

Service bulletin

Surveying and Mapping Services

2006



Highlights

- The surveying and mapping services industry continued to benefit from substantial and continuous growth of the resource sector in 2006 as its operating revenue climbed 18.1% to \$2.7 billion. This strong growth is especially significant because it follows an almost equally strong increase of 16.9% in 2005.
- Growth in operating revenue was especially strong in Western Canada. Increases of over 20%, compared with 2005 levels, were posted in Manitoba (+54%), Saskatchewan (+26%), Alberta (+21%) and British Columbia (+27%). By comparison, growth reported in Central Canada, especially in Ontario, was substantially less.
- The Canadian surveying and mapping industry is dominated by Alberta, which generated almost two-thirds of national operating revenue in 2006. Alberta saw its share rise rapidly, from 60.6% in 2004 to 64.6% in 2006. During this same period, Quebec's share (from 9.5% to 8.2%) and Ontario's share (from 16.1% to 12.2%) dropped significantly, whereas British Columbia's share was up (from 7.4% to 8.5%).
- In 2006, the industry's operating expenses increased less than its operating revenue, resulting in a rise in its operating profit margin from 10.3% in 2005 to 11.6% in 2006. In fact, this profit margin has been increasing since the 8.5% level of 2002. Employee salaries, wages and benefits accounted for 45% of operating expenses in 2006.

2006 Survey Detailed Results

Operating revenue

The surveying and mapping services industry continued to benefit from the substantial and continuous growth of the resource sector in 2006. The industry experienced strong growth in 2006, as its operating revenue climbed 18.1% to \$2.7 billion. This strong growth is especially significant because it follows an almost equally strong increase of 16.9% in 2005.

Chart 1
Operating revenue

billions of dollars

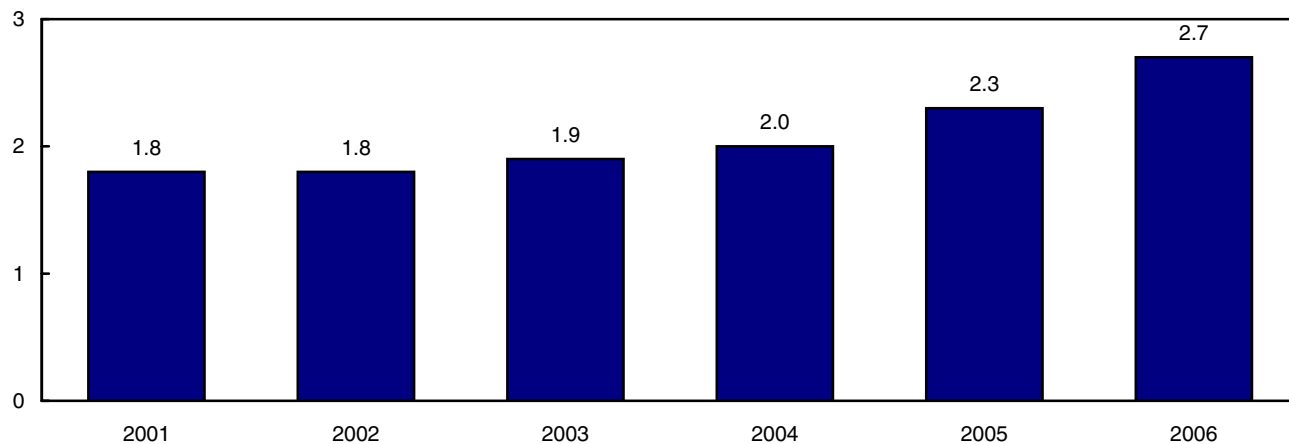
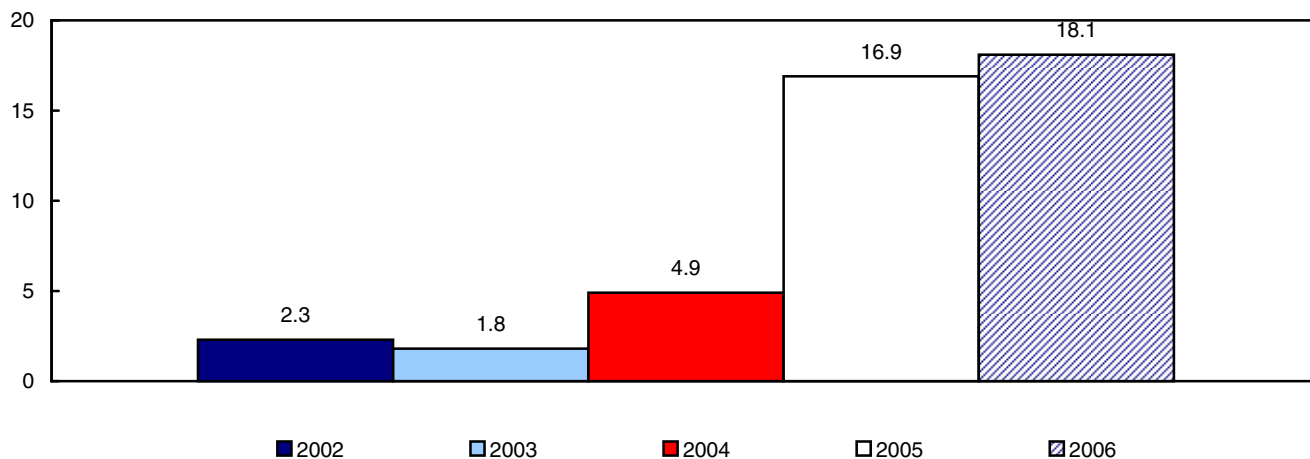


Chart 2
Growth rate of operating revenue

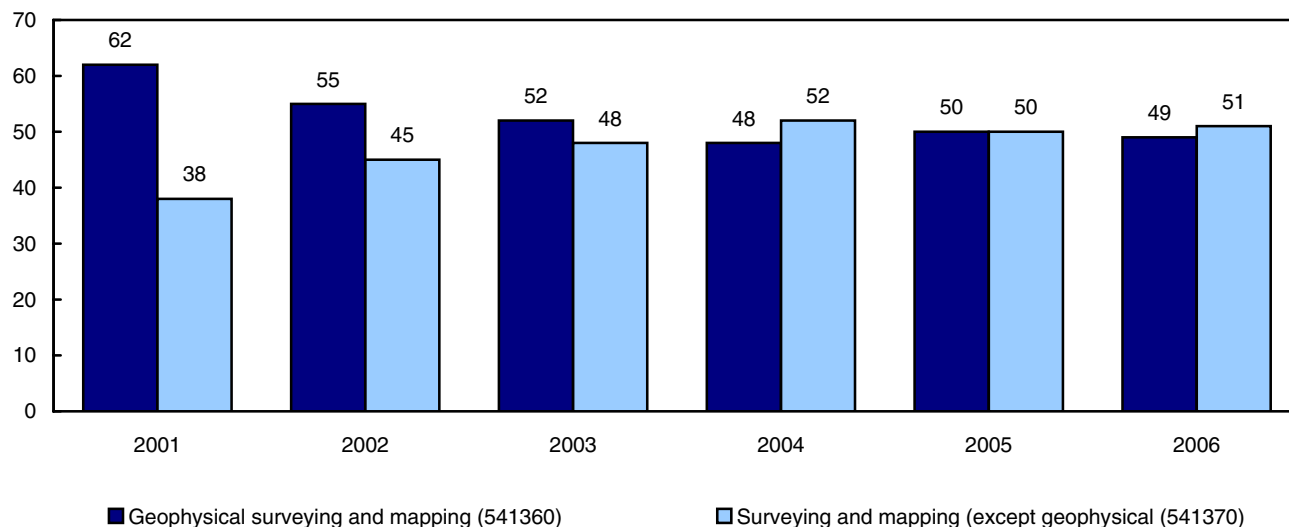
percent



Firms whose primary activity is geophysical surveying and mapping (NAICS 541360) generated 62% of industry operating revenues in 2001 while the firms whose primary activity is surveying and mapping (except geophysical) (NAICS 541370) generated the other 38%. These shares have changed rapidly in the two subsequent years, and since 2003 have each represented approximately half of industry operating revenue.

Chart 3
Distribution of operating revenue by industry

percent

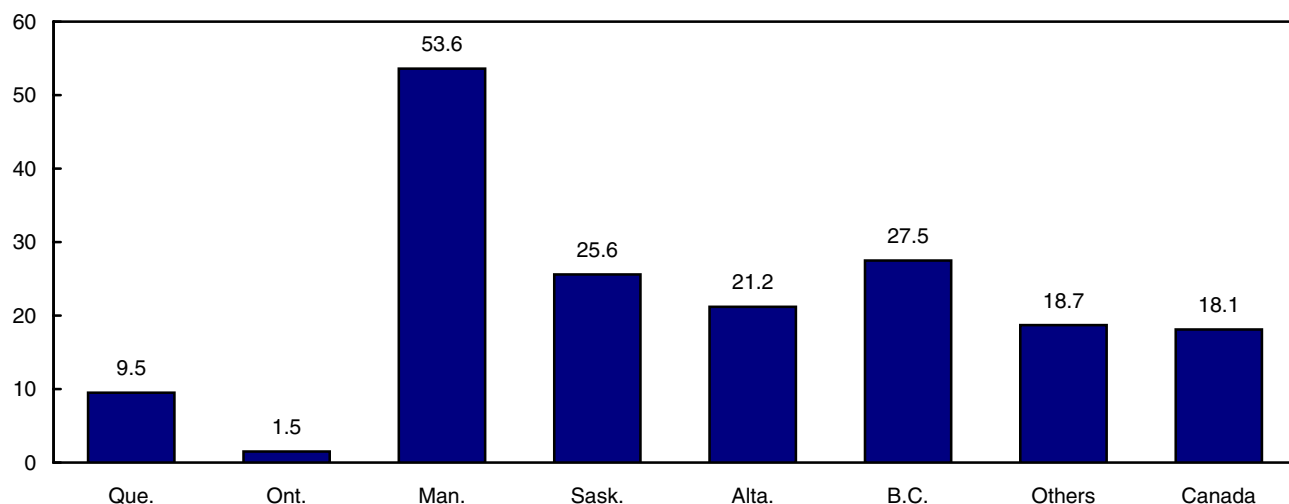


Operating revenue by province

Growth in operating revenue was especially strong in Western Canada. Increases of over 20% above 2005 levels were posted in Manitoba (+54%), Saskatchewan (+26%), Alberta (+21%) and British Columbia (+27%). In comparison, the growth was substantially lower in Quebec (+10%) and in Ontario (+1%).

Chart 4
Growth rate of operating revenue in 2006

percent

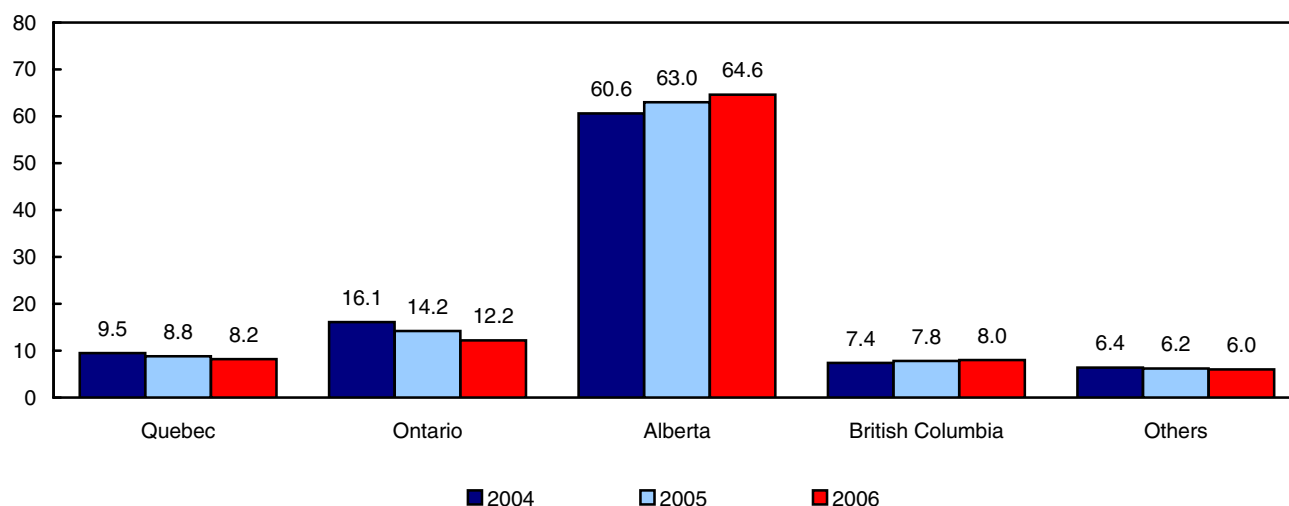


The Canadian surveying and mapping industry is dominated by Alberta, which generated almost two-thirds (64.6%) of national operating revenue in 2006. Alberta saw its share rise rapidly, from 60.6% in 2004 to 64.6% in 2006.

During this same period, Quebec's share (from 9.5% to 8.2%) and Ontario's share (from 16.1% to 12.2%) dropped significantly, whereas British Columbia's share was up (from 7.4 % to 8.5%).

Chart 5
Provincial distribution of operating revenue

percent



Sales by type of goods and services

Based on "survey" portion data (which does not include estimations derived from administrative sources), in 2006, no less than 47% of industry sales were for geophysical surveying or mapping, 50% for non-geophysical surveying or mapping and 3% for all other goods and services.

Surveying services (land, cadastral, hydrographic, topographic, civil engineering and marine surveying) account for three-quarters of revenues from non-geophysical surveying or mapping services.

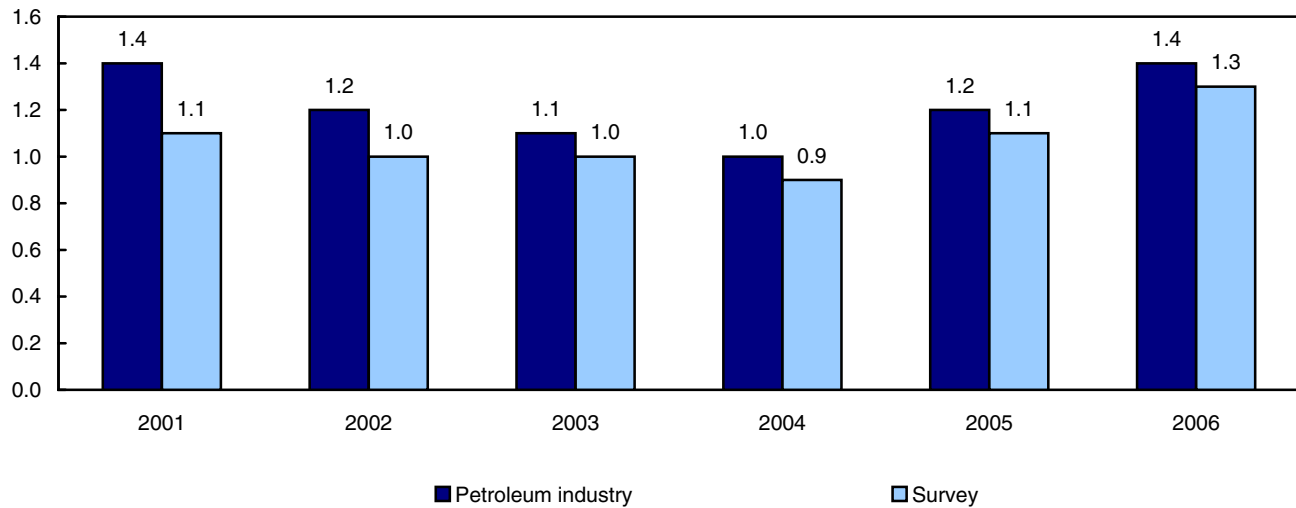
The primary activity of the geophysical surveying and mapping industry (541360) consists of locating and measuring the extent of subsurface resources such as oil, gas and minerals. Conventional petroleum industry expenditures for geological and geophysical¹ operations are not exactly comparable to survey revenue of the geophysical surveying and mapping industry (541360). The concepts measured are not identical and the petroleum industry is not the only industry engaged in geophysical surveying and mapping. Despite these differences, the two levels compare very well, as indicated in the table below.

1. Statistics Canada Publication 26-213-XWF (Oil and Gas Extraction), Table 3 (Net cash expenditures of the conventional petroleum industry), item: Geological and geophysical exploration.

Chart 6

Expenses on geological and geophysical operations by the conventional petroleum industry and Survey geophysical surveying and mapping revenue (541360)

billions of dollars



Source(s): Statistics Canada Publication 26-213-XWF (Oil and Gas Extraction), Table 3 (Net cash expenditures of the conventional petroleum industry), item: Geological and geophysical exploration.

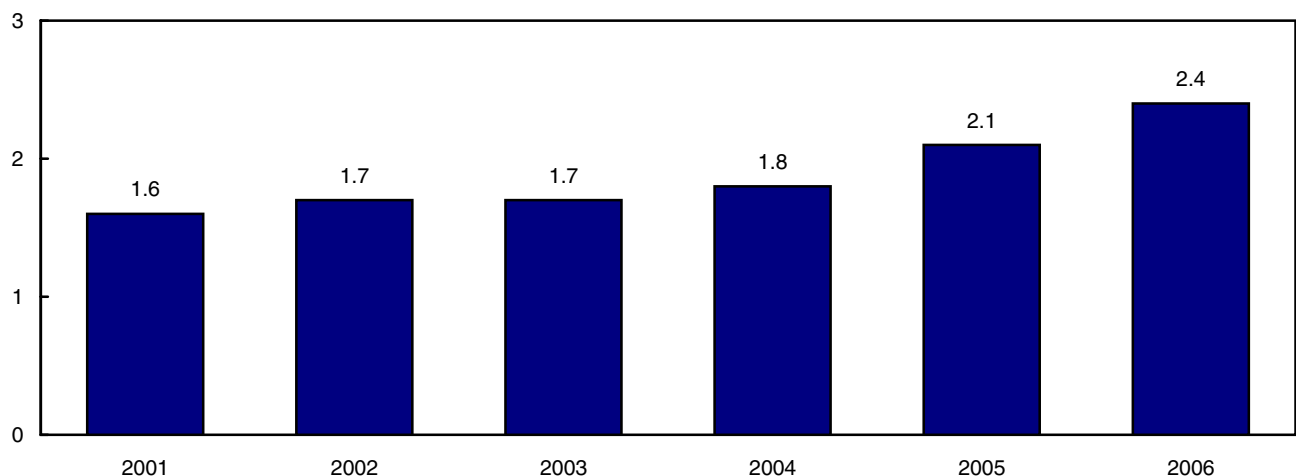
Operating expenses

In 2006, the industry operating expenses reached \$2.4 billion, an increase of 16.4% from 2005, slightly less than the 18.1% growth in operating revenue over this period.

Chart 7

Operating expenses

billions of dollars



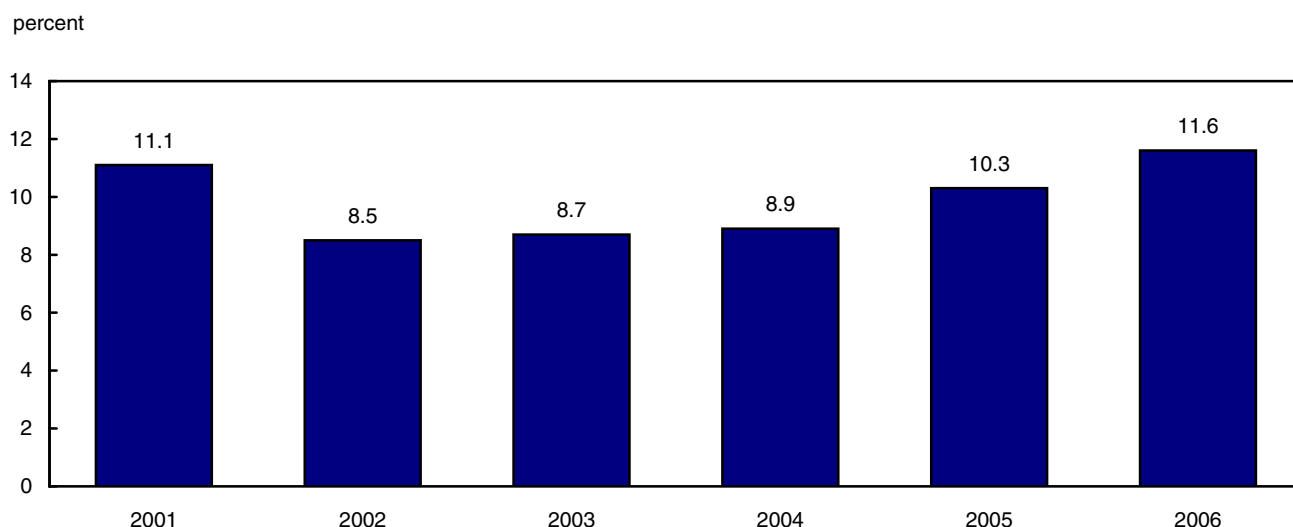
Employee salaries, wages and benefits accounted for 45% of industry operating expenses in 2006. This is a larger share as compared with the level of the last five years, which fluctuated between 41% and 43%.

Data from the “survey” portion (which does not include estimations derived from administrative sources) also indicate that employee salaries, wages and benefits account for 45% of operating expenses, followed by office expenses (11%) and surveying and mapping data services sub-contracted to other firms and other fees (10%). The remaining one-third of expenditures is distributed among a variety of other categories.

Operating profits

Expressed as a percentage, the industry’s operating profits reached 11.6%, a significant increase over the 10.3% level of 2005. Since 2002, the operating profit margin has risen from 8.5% to 11.6%, reaching the highest level of the 2001-2006 period.

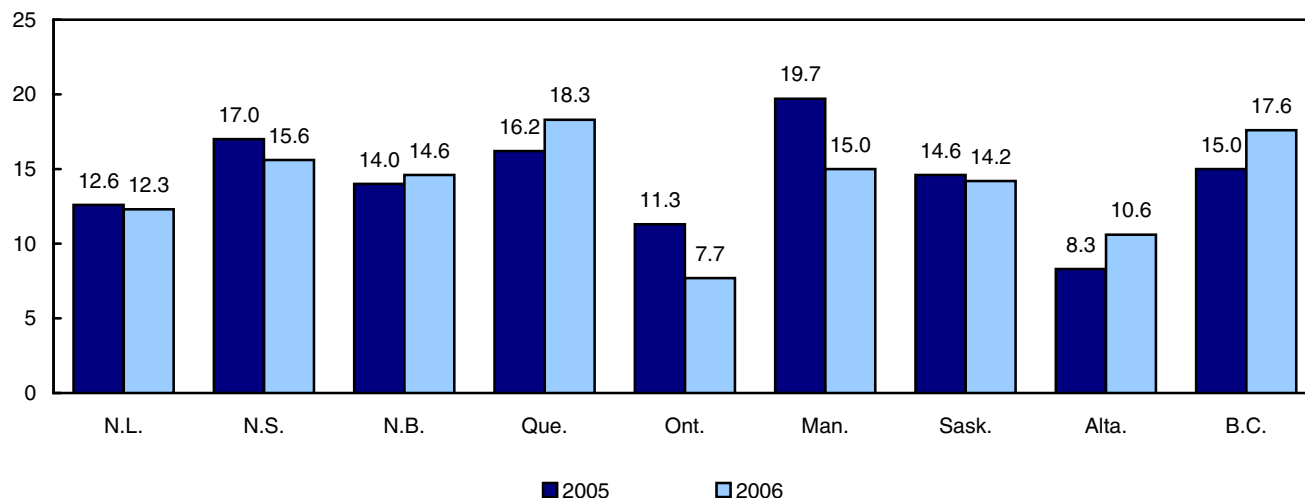
Chart 8
Operating profit margin



From 2005 to 2006, the operating profit margin grew in New Brunswick, Quebec, Alberta and British Columbia, while there were significant reductions in Ontario and Manitoba.

Chart 9
Operating profit margin

percent

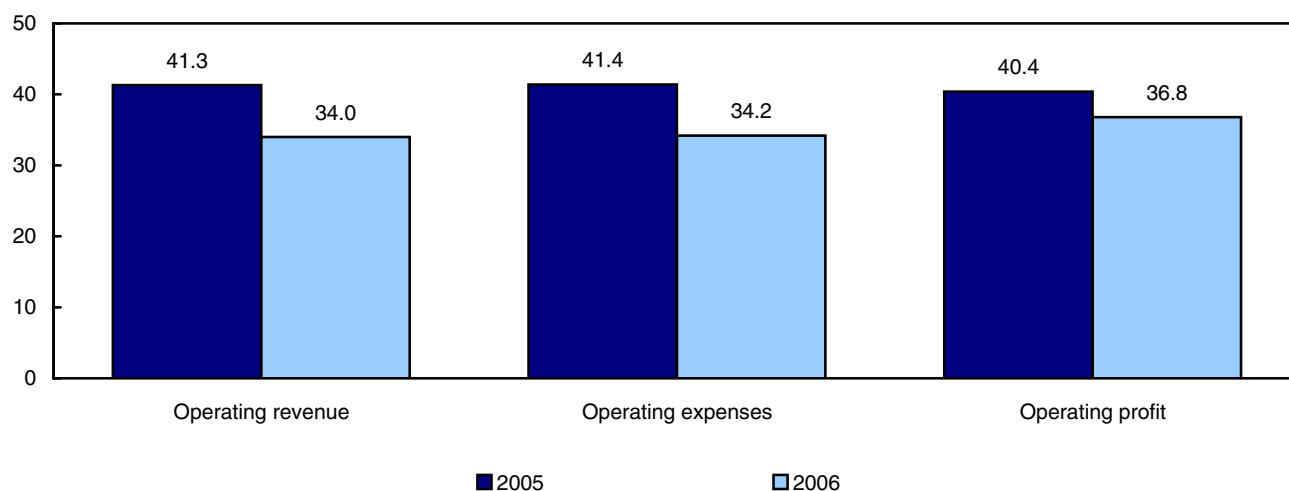


Industry's 20 largest firms

The surveying and mapping services industry is characterized by a limited number of firms with high revenue and a large number of firms with more modest revenue. In 2006, the 20 largest firms generated 34% of the industry's operating revenue, a marked drop from the 41% level generated by the top 20 firms in 2005. Over the same period, these largest firms also saw their share of operating expenses drop from 41% to 34%. Thus, the 20 largest firms generated 37% of operating profit, a decrease from the 40% generated in 2005.

Chart 10
Share of the industry's 20 largest firms

percent

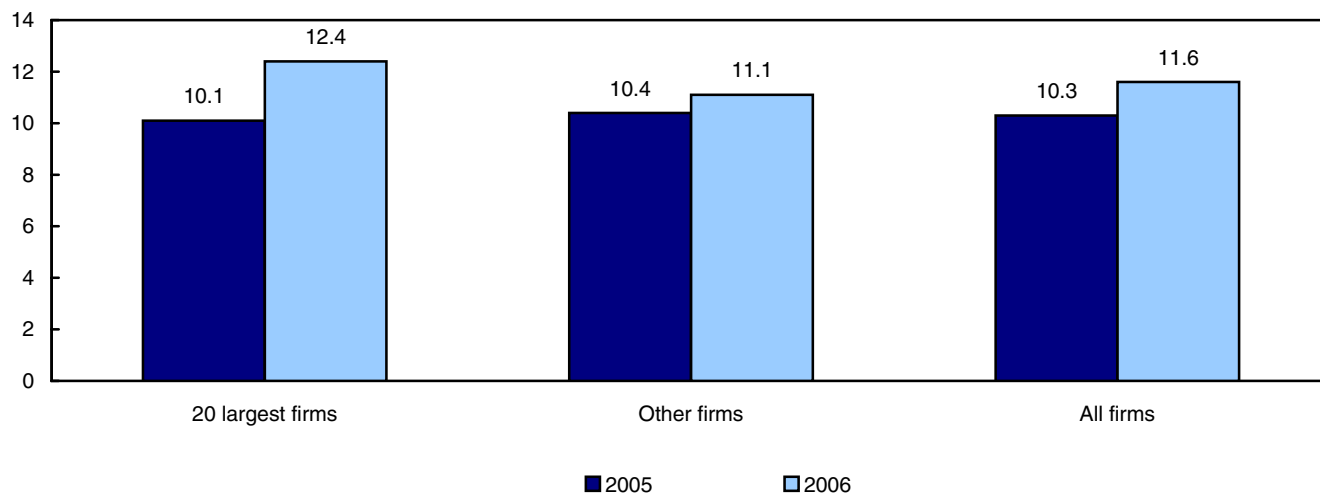


Expressed as a percentage, the 2005 operating profit margin was slightly lower for the 20 largest firms than for other firms. However, from 2005 to 2006, the operating profit increased more for the 20 largest firms (from 10.1%

to 12.4%) than for other firms (from 10.4% to 11.1%). As a result, operating profit is now higher for the 20 largest firms.

Chart 11
Operating profit margin

percent

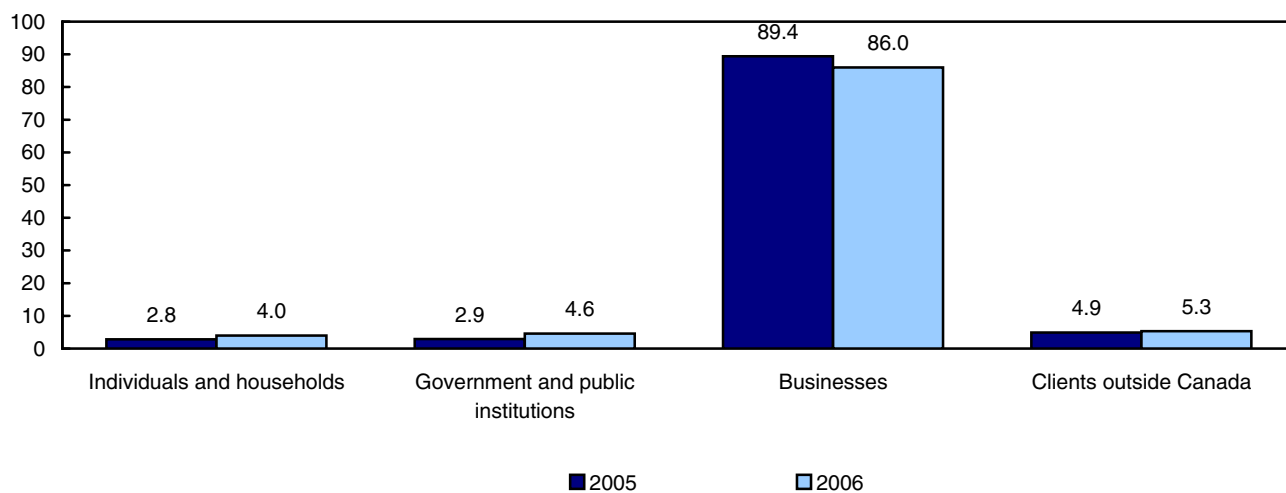


Client base

Data from the 2006 "survey" portion indicate that clients in Canada accounted for almost all (95%) of industry sales. Of these sales in Canada, a large majority were to the businesses.

Chart 12
Sales by type of client

percent



Statistical tables

Table 1

Summary statistics for the surveying and mapping services industry, 2001 to 2006

	Operating revenue	Operating expenses	Salaries, wages and benefits	Operating profit margin	Statistical establishments
	millions of dollars			percent	number
2006 p					
Newfoundland and Labrador	19.8	17.4	9.4	12.3	34
Prince Edward Island	x	x	x	x	x
Nova Scotia	23.6	19.9	10.7	15.6	83
New Brunswick	12.3	10.5	6.5	14.6	53
Quebec	221.0	180.5	79.2	18.3	435
Ontario	330.3	304.9	159.9	7.7	431
Manitoba	22.5	19.1	7.3	15.0	36
Saskatchewan	61.6	52.8	24.9	14.2	91
Alberta	1,746.5	1,561.6	682.3	10.6	1,466
British Columbia	228.6	188.4	82.6	17.6	468
Yukon	x	x	x	x	x
Northwest Territories	x	x	x	x	x
Nunavut	x	x	x	x	x
Canada	2,702.0	2,389.6	1,077.1	11.6	3,125
2005 r					
Newfoundland and Labrador	15.9	13.9	6.3	12.6	61
Prince Edward Island	x	x	x	x	x
Nova Scotia	24.5	20.4	10.8	17.0	119
New Brunswick	12.1	10.4	5.7	14.0	71
Quebec	201.8	169.2	78.2	16.2	394
Ontario	325.5	288.6	143.7	11.3	486
Manitoba	14.7	11.8	3.7	19.7	38
Saskatchewan	49.0	41.9	21.3	14.6	93
Alberta	1,441.4	1,321.4	527.0	8.3	1,283
British Columbia	179.3	152.5	68.4	15.0	418
Yukon	x	x	x	x	x
Northwest Territories	x	x	x	x	x
Nunavut	x	x	x	x	x
Canada	2,288.8	2,053.6	873.6	10.3	2,990
2004 r					
Newfoundland and Labrador	15.7	14.3	6.8	9.3	55
Prince Edward Island	x	x	x	x	x
Nova Scotia	25.7	21.7	11.6	15.5	97
New Brunswick	11.5	10.1	6.0	12.7	51
Quebec	186.8	154.8	68.1	17.1	428
Ontario	314.9	291.7	162.3	7.4	476
Manitoba	12.1	9.6	4.1	20.3	29
Saskatchewan	38.9	30.3	16.5	22.1	91
Alberta	1,186.3	1,107.2	418.0	6.7	1,259
British Columbia	144.8	123.8	58.7	14.5	404
Yukon	x	x	x	x	x
Northwest Territories	x	x	x	x	x
Nunavut	x	x	x	x	x
Canada	1,957.6	1,783.6	759.6	8.9	2,917

Table 1 – continued

Summary statistics for the surveying and mapping services industry, 2001 to 2006

	Operating revenue	Operating expenses	Salaries, wages and benefits	Operating profit margin	Statistical establishments
	millions of dollars			percent	number
2003					
Newfoundland and Labrador	10.7	9.4	4.5	12.6	50
Prince Edward Island	x	x	x	x	x
Nova Scotia	22.4	19.2	11.4	14.2	98
New Brunswick	12.3	10.8	6.1	11.8	54
Quebec	176.1	146.5	66.2	16.8	411
Ontario	275.4	249.5	135.2	9.4	457
Manitoba	9.1	7.1	3.7	21.2	30
Saskatchewan	29.0	21.8	12.0	24.8	90
Alberta	1,174.1	1,108.3	411.8	5.6	1,571
British Columbia	142.3	117.8	53.6	17.2	402
Yukon	x	x	x	x	x
Northwest Territories	x	x	x	x	x
Nunavut	x	x	x	x	x
Canada	1,865.4	1,703.8	710.0	8.7	3,190
2002					
Newfoundland and Labrador	19.1	17.7	6.2	7.1	49
Prince Edward Island	x	x	x	x	x
Nova Scotia	36.9	32.3	14.0	12.4	106
New Brunswick	11.8	10.8	6.0	8.5	52
Quebec	149.5	129.3	57.9	13.5	440
Ontario	252.7	224.0	120.4	11.4	447
Manitoba	13.0	9.7	4.8	25.3	36
Saskatchewan	30.5	27.2	15.1	10.7	91
Alberta	1,172.1	1,100.5	415.4	6.1	1,476
British Columbia	120.1	98.1	46.7	18.3	368
Yukon	x	x	x	x	x
Northwest Territories	x	x	x	x	x
Nunavut	x	x	x	x	x
Canada	1,833.1	1,676.8	695.5	8.5	3,095
2001					
Newfoundland and Labrador	17.1	15.2	4.8	10.9	42
Prince Edward Island	x	x	x	x	x
Nova Scotia	27.0	23.4	11.0	13.6	102
New Brunswick	10.9	10.6	5.1	2.5	56
Quebec	122.7	100.4	50.5	18.2	365
Ontario	199.9	184.2	107.0	7.9	395
Manitoba	9.7	8.2	4.1	16.0	28
Saskatchewan	27.0	23.5	12.8	13.3	81
Alberta	1,246.3	1,116.3	432.6	10.4	1,110
British Columbia	123.1	104.1	55.3	15.4	270
Yukon	x	x	x	x	x
Northwest Territories	x	x	x	x	x
Nunavut	x	x	x	x	x
Canada	1,792.1	1,593.5	686.9	11.1	2,471

Note(s): According to the North American Industry Classification System (NAICS 5413). See "Data sources, definitions and methodology" at the end of tables for definition of terms. Due to rounding, components may not add to total.

Table 2
Sales by goods and services for the surveying and mapping industry¹, Canada, 2001 to 2006

	2005 ^r	2006 ^p
	percent	
Geophysical Surveying and/or Mapping Services	48.4	46.9
Surveying (data acquisition, processing or interpretation)	44.6	44.0
Mapping and cartography	1.6	1.6
Geophysical Consulting Services	2.2	1.3
Non-geophysical surveying and/or mapping services	47.4	49.5
Surveying (e.g., land, cadastral, hydrographic, topographic, marine, engineering)	36.2	36.7
Mapping and cartography (e.g., photogrammetry, charting)	6.4	4.8
Remote sensing (e.g., airborne, satellite, radar, lidar)	2.8	3.9
Surveying and mapping consulting services	2.1	4.1
Other Goods and Services	4.2	3.5
Total	100.0	100.0

1. The smallest firms, in terms of revenues earned, are not included in the estimates. These firms account for a relatively small portion of total industry revenues.
Note(s): According to the North American Industry Classification System (NAICS 5413). See "Data sources, definitions and methodology" at the end of tables for definition of terms. Due to rounding, components may not add to total.

Table 3
Operating expenses for the surveying and mapping industry¹, Canada, 2001 to 2006

	2001	2002	2003	2004 ^r	2005 ^r	2006 ^p
	percent					
Wages, salaries and employee benefits	44.0	43.1	42.5	42.9	43.0	46.1
Sub-contracted surveying and mapping services and other fees (legal, accounting, consulting)	14.6	13.8	12.6	11.5	10.3	8.9
Office expenses	7.8	8.4	9.7	7.1	11.7	9.9
Rental and leasing	6.6	6.0	7.5	5.2	5.3	4.9
Depreciation	8.3	7.3	9.0	9.8	5.6	4.9
Other expenses	18.6	21.5	18.6	23.4	24.2	25.4
Total operating expenses	100.0	100.0	100.0	100.0	100.0	100.0

1. The smallest firms, in terms of revenues earned, are not included in the estimates. These firms account for a relatively small portion of total industry revenues.
Note(s): According to the North American Industry Classification System (NAICS 5413). See "Data sources, definitions and methodology" at the end of tables for definition of terms. Due to rounding, components may not add to total.

Table 4
Sales by type of client for the surveying and mapping industry¹, Canada, 2001 to 2006

	2001	2002	2003	2004 ^r	2005 ^r	2006 ^p
	percent					
Clients in Canada	95.0	94.9	92.9	..	95.1	94.7
Individuals and households	11.5	10.2	8.2	..	2.8	4.0
Government and public institutions	7.0	7.4	7.7	..	2.9	4.6
Businesses	76.4	77.3	77.1	..	89.4	86.0
Clients outside Canada	5.0	5.1	7.1	..	4.9	5.3

1. The smallest firms, in terms of revenues earned, are not included in the estimates. These firms account for a relatively small portion of total industry revenues.
Note(s): According to the North American Industry Classification System (NAICS 5413). See "Data sources, definitions and methodology" at the end of tables for definition of terms. Due to rounding, components may not add to total.

Data sources, definitions and methodology

Description

This annual sample survey collects the financial and operating data needed to produce statistics on the Surveying and Mapping Services in Canada. The survey also collects detailed information on the characteristics of the businesses, such as type of revenue and type of client. These data are aggregated with information from other sources to produce official estimates of the national and provincial economic production of the Surveying and Mapping Services industry in Canada. The results from this survey provide data to businesses, governments, investors, and associations. These data allow these groups to monitor the growth of the industry, measure performance, allow comparison across similar businesses and to better understand this industry to react to trends and patterns.

Target population

The target population consists of all establishments classified to the Surveying and Mapping Services industry (NAICS 541360 and 541370) according to the North American Industry Classification System (NAICS) during the reference year. This industry comprises establishments primarily engaged in gathering, interpreting and mapping geophysical data. These establishments often specialize in locating and measuring the extent of subsurface resources such as oil, gas and minerals. These establishments are also engaged in providing surveying and mapping services of the surface of the earth, including sea floor.

Industry structure

Under the North American Industrial Classification System (NAICS), the Surveying and Mapping Services Industry consists of Geophysical Surveying and Mapping Services (541360) and Surveying and Mapping (except Geophysical) Services (541370).

Geophysical Surveying and Mapping Services – 541360

This industry group comprises establishments primarily engaged in gathering, interpreting and mapping geophysical data. These establishments often specialize in locating and measuring the extent of subsurface resources, such as oil, gas and minerals, but they may also conduct surveys for engineering purposes. A variety of surveying techniques are used, including seismic, magnetic, gravity, electrical and electromagnetic, radioactive and remote sensing, depending on the purpose of the survey.

Surveying and Mapping (except Geophysical) Services – 541370

This industry group comprises establishments primarily engaged in providing surveying and mapping services of the surface of the earth, including the sea floor. These services may include surveying and mapping of areas above or below the surface of the earth, such as the creation of view easements or segregating rights in parcels of land by creating underground utility easements. Examples of activities are: cadastral and topographic surveying and mapping services; control surveying services, such as geodesy and Global Positioning System (GPS) surveying; cartographic surveying services, including photogrammetric mapping; geographic information system (GIS) base mapping and quality control services; and geospatial mapping services.

Data users who wish to learn more about NAICS, its underlying principles, and many of the other statistical concepts discussed in this brief summary, are referred to the Introduction section of the Statistics Canada publication “North American Industry Classification System: Canada 2007” (catalogue no. 12-501-XPE).

Sampling

This is a sample survey with a cross-sectional design.

The frame is the list of establishments from which the portion eligible for sampling is determined and the sample is taken. The frame provides basic information about each firm including address, industry classification, and information from administrative data sources. The frame is maintained by Statistics Canada's Business Register and is updated using administrative data. The basic objective of the survey is to produce estimates for the whole industry - incorporated and unincorporated businesses. The data come from two different sources: a sample of all businesses with revenue above or equal to a certain threshold (note: the threshold varies between surveys and sometimes between industries and provinces in the same survey) for which either survey or administrative data may be used; and administrative data only for businesses with revenue below the specified threshold. It should be noted that only financial information is available from businesses below the threshold; e.g., revenue, and expenses such as depreciation and salaries, wages and benefits. Detailed characteristics are collected only for surveyed establishments. Prior to the selection of a random sample, establishments are classified into homogeneous groups (i.e., groups with the same NAICS codes and same geography). Quality requirements are targeted, and then each group is divided into sub-groups called strata: take-all, must-take, and take-some. The take-all stratum represents the largest firms in terms of performance (based on revenue) in an industry. The must-take stratum is comprised of units selected based on complex structural characteristics (multi-establishment, multi-legal, multi-NAICS, or multi-province enterprises). All take-all and must-take firms are selected to the sample. Units in the take-some strata are subject to simple random sampling. The effective sample size for reference year 2006 was 590 collection entities.

Definitions

Estimates for the most recent year are preliminary. Preliminary data are subject to revision.

Operating revenue excludes investment income, capital gains, extraordinary gains and other non-recurring items.

Operating expenses excludes write-offs, capital losses, extraordinary losses, interest on borrowing, and other non-recurring items.

Operating profit margin is derived as follows: operating revenue minus operating expenses, expressed as a percentage of operating revenue. The derived figure excludes corporation income tax paid by incorporated businesses and individual income tax paid by unincorporated businesses. For unincorporated businesses, operating profit margin includes unpaid remuneration to partners and proprietors, which is not recorded as salaries, wages and benefits. Therefore the profit estimate will be higher in industries where unincorporated proprietorships and partnerships are significant contributors.

Salaries, wages and benefits include vacation pay and commissions for all employees for whom a T4 slip was completed. This category also includes the employer portion of employee benefits for items such as Canada/Québec Pension Plan or Employment Insurance premiums. Salaries and wages do not include working owners' dividends nor do they include the remuneration of owners of unincorporated business. Therefore the relative level of salaries, wages and benefits will be lower in industries where unincorporated businesses are significant contributors.

Quality evaluation

Prior to dissemination, combined survey results are analyzed for comparability; in general, this includes a detailed review of individual responses (especially for the largest companies), general economic conditions, historic trends, and comparisons with other data sources.

Disclosure control

Statistics Canada is prohibited by law from releasing any data which would divulge information obtained under the Statistics Act that relates to any identifiable person, business or organization without the prior knowledge or the consent in writing of that person, business or organization. Various confidentiality rules are applied to all data that are released or published to prevent the publication or disclosure of any information deemed confidential. If necessary, data are suppressed to prevent direct or residual disclosure of identifiable data.

Data accuracy

Of the units contributing to the estimate, the (weighted) response rate was 84%. CVs were calculated for each estimate and are available upon request.

Related products**CANSIM**

Available on CANSIM: table 360-0006 - Summary statistics for surveying and mapping services (all establishments), by North American Industry Classification System (NAICS), annual (75 series)

Survey(s)

Definitions, data sources and methods: survey number 4715 - Annual Survey of Service Industries: Surveying and Mapping

Publications

Service Industries Newsletter, Catalogue no. 63-018-X.

Analytical paper series - Service Industries Division, Catalogue no. 63F0002X.

Release date: August 2008

Symbols

The following standard symbols are used in Statistics Canada publications:

.	not available for any reference period
..	not available for a specific reference period
...	not applicable
0	true zero or a value rounded to zero
0 ^s	value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
p	preliminary
r	revised
x	suppressed to meet the confidentiality requirements of the <i>Statistics Act</i>
E	use with caution
F	too unreliable to be published

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