Canadian Space Agency
Agence spatiale canadienne

STATE OF THE CANADIAN SPACE SECTOR 2003

EXTERNAL RELATIONS DIRECTORATE
CANADIAN SPACE AGENCY

www.space.gc.ca

Canada

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Note to readers: *The Annual Survey of the Canadian space sector has been undertaken since 1996. Comparative analyses of trends across time typically examine a 5-year period. Consequently, in this edition comparison and changes are reported for the 1999 to 2003 period. Readers should consult previous editions for information regarding results prior to 1999.*

Aussi disponible en français

MISSION STATEMENT
About the Authors
About this Report

The Canadian Space Agency is committed to leading the development and application of space knowledge for the benefit of Canadians and humanity.

About the Authors

The External Relations Directorate manages the strategic relationships between the Canadian Space Agency and its domestic and international partners. Key mandates include the development and implementation of policies and strategies relating to co-operation partnerships with domestic stakeholders (Federal and Provincial governments, industry and academia), international agencies and foreign industries. External Relations plays a pivotal role in supporting the commercial initiatives of Canadian space companies in world markets - a core mandate of the CSA - and in providing stakeholders with strategic and timely information.

About this Report

The **State of the Canadian Space Sector** report provides those working in the space sector, government and industry alike, with insight into the sector in which we operate. In turn, this information supports decision-makers in their endeavor to make informed and strategic choices for the future.

For more information

Information specific to Canadian space business and industry, including an electronic version of this report, is found at the following address: www.space.gc.ca (Science & Industry).

Acknowledgments

The CSA wishes to acknowledge the contribution of the organizations, both public and private, without which this report would simply not have been possible.

MESSAGE FROM THE PRESIDENT

Marc Garneau
President

I am pleased to report that the results of the 2003 Annual Survey indicate there has been an incremental improvement, even some modest growth in the space sector. Total revenues for 2003 were C$2B. This represents an 11% increase over levels reported in 2002. While we can attribute this growth to increases in both domestic and export revenues, the ratio of revenues streaming from the domestic and export markets remained at 60%/40% respectively. Since exports are tremendously important for the growth of the Canadian Space Sector, we are ever hopeful that our collective efforts can be combined to increase this figure in the near future.

Telecommunications activities generated over seventy percent of total revenues, remaining the core workhorse for the space sector and, I believe, continuing to buttress it against the uncertainties of the international marketplace. Given the significant contribution of the revenues generated by the Telecommunications sector in comparison to overall space revenues, we examined the data further to better discern the specific characteristics of this revenue stream, to better understand where future growth might more likely be and where new efforts in development might be apt. I am sure you will find this further segmentation of the data most worthwhile.

Three of the four Space Categories monitored through the Annual Survey demonstrated growth during 2003; Ground Segment activities increased 40%, Space Research revenues grew 43% and Applications and Services revenues increased 20%. However, the Space Segment area of activity lost substantial ground with revenues declining 33% ($148M) over the course of the year. This marks the third consecutive year of decline in revenues for the space segment category.

I meet regularly with heads of industry and leaders in the space research and development fields to discuss the challenges we share in our collective efforts to strengthen the Canadian space sector. I continue to be impressed with the resiliency they convey in expressing their on-going commitment to keep working towards the growth of a strong Canadian Space Sector. I look forward to reviewing next year's results.

EXECUTIVE SUMMARY

Total revenues for the Canadian space sector in 2003 were $2B[1], an increase of 11% or $199M, over those achieved during 2002. Over the last five years (since 1999) the total revenues generated by the Canadian space sector have increased 40%. Increases were seen in both the Domestic and Export revenue streams.

During 2003, revenues from domestic sources were $1.2B, representing an increase of 12% over those reported in 2002 ($1.073B). Similarly, export revenues also increased during 2003, growing 10% (approximately $70M) from $728M in 2002 to $798M in 2003. Over the past five-years, domestic and export revenues demonstrated similar growth levels, with total domestic revenues increasing 41% and total export revenues increasing by 40%.

In 2003, domestic revenues represented 60% of total revenues, ($1.2 of $2B) and it is also noteworthy that in 2003, Canada's space sector derived the significant majority of its domestic revenues from non-government (or Private) sources. This finding where non-government sources outweigh revenues from government sources in 2003, is consistent with the overall trend observed since reporting began in 1996 (save for a one-time observation in 2000). The survey results show that the overall share of non-government derived sources of revenues increased in 2003 yielding a ratio of **78%/22%.**

In 2003, the proportion (ratio) of overall space revenues represented by export revenues remained at 2002 levels, namely 40%. The 40% ratio of exports to total revenues found in this year's results continues to highlight the strong export orientation of the Canadian space industry while perhaps also reflecting the on-going difficulty the industry is encountering growing sales in the international marketplace.

In this regard, the **U.S.** continued as the strongest market for export revenues representing 45% of the total export revenues. **European** markets generated the second largest share of export revenues and increased 8% during 2003. Strong positive growth was also found in **Asia** where revenues increased 35% ($24M).

Of the four **Space Categories monitored** through the Annual Survey, strong growth was found in Ground Segment activities where revenues increased 40% over levels observed in 2002. Space Research revenues also grew during 2003, increasing 43% ($16M). Similarly, Applications and Services revenues increased during 2003, up 20%. Conversely, Space Segment areas of activity lost substantial ground showing revenues declining 33% ($148M).

Amongst the **Space Activities in Canada**, the Telecommunications sector generated the lion's share of the Canadian space sector's revenues in 2003, representing 72% or $1.45B of the total reported revenues. This represents a 28% ($319M) increase over levels observed in 2002. Over the past five years, telecommunications revenues have increased by 61%.

Revenues from the Navigation sector remained at 2002 levels. Revenues from the Earth Observation and Robotics sectors both showed declines during 2003, 20% each. Space science activity increased $4M or 7% during 2003.

Given the significant contribution of the revenues generated by the Telecommunications sector to overall space revenues, the data were again broken down to identify the specific sources of revenues. The results are shown in the **Chart: Breakdown of Telecommunications Revenues (2003) (page 12).**

[1] *All currency in Canadian dollars.*

EXECUTIVE SUMMARY

Of the $1.45B generated in the Telecommunications Sector, the large majority of revenues, that is 74% or $1.069B, are from activities in Applications and Services. This is short of that found last year at 78%. Of the remaining 26% the breakdown is as follows: 21% or $298M is generated from Ground Segment activities, 5% or $70M is from Space Segment, and 1% or $10M is from Space Research. Clearly, the noteworthy increase in revenues generated within the Ground Segment during 2003 has contributed appreciably to the overall growth in the Telecommunications Sector.

The 2003 **Regional Space Revenues** results found there to be growth in Ontario (25%) and the Prairie Region (21%). Revenues in Atlantic Canada remained stable in 2003 while declining in both British Columbia and Quebec (15% and 17% respectively).

During 2003, 333 new workers joined the Canadian space sector bringing the total employees to 6,122. Ontario continued to employ the majority of space sector employees representing 60% of the total workforce. Quebec, British Columbia, the Prairies and Atlantic Canada employed 22.9%, 6.6%, 6.5%, and 4.0% of the total workforce respectively.

OVERALL RESULTS: 1999-2003

Year	Total Revenues	Domestic Revenues		Export Revenues		Workforce
	$	$	%	$	%	n
2003	1,999,433,240	1,201,312,758	60	798,120,482	40	6,122
2002	1,800,139,269	1,072,633,400	60	727,505,869	40	5,789
2001	1,871,511,842	1,077,212,382	58	794,299,460	42	6,275
2000	1,430,941,403	774,729,039	54	656,212,364	46	5,950
1999	1,425,498,040	854,697,263	60	570,800,777	40	6,408

OVERVIEW OF THE REPORT

In order to measure the changes taking place in Canada's space sector, the CSA undertakes an annual survey and publishes the results in the *State of the Canadian Space Sector* report. The 2003 edition profiles the sector over the course of January 1 to December 31, 2003. Data is provided in the following areas:

- Overall space revenues;
- Domestic v. export revenues;
- Revenues of Canada's Top 30 organizations developing and/or using space to generate revenues;
- Revenues by space categories (Space Segment, Ground Segment, Applications and Services, and Space Research);
- Revenues by sectors of activity (Telecommunications, Robotics, Earth Observation, Space Science, and Satellite Navigation);
- Regional Revenues (British Columbia, Prairies, Ontario, Quebec and Atlantic Canada);
- Workforce characteristics.

METHODOLOGY

Questionnaires were sent to over 200 private sector companies, research organizations and universities in Canada who have a defined strategic interest in the space industry. Additional data were collected through internal consultation with CSA and government officials whose dealings with stakeholders were deemed statistically relevant.

It is important to note that the company-specific information used to compile this report remains strictly confidential and cannot be released in a manner other than in an aggregate form.[2] Consequently, in certain circumstances, the authors are prevented from providing a more detailed explanation or in-depth analysis of the results.

DEFINITION OF CANADA'S SPACE SECTOR

The Canadian space sector is defined as organisations (private, public and academic) whose activities rely on the **development and use** of space assets and/or space data. Accordingly, the sector encompasses the following activities:

Space Segment: Research and Development (R&D), manufacturing, testing, integration and launch of platforms (satellites, spacecraft and robotic systems), complete systems, subsystems and components.

Ground Segment: R&D, manufacturing, testing, and integration of facilities on Earth for controlling space-based systems and satellites, for linking satellites to operational terrestrial networks and for processing satellite-derived data.

Applications and Services: Development and/or provision of services and value-added products and technologies that are derived from the use of space systems and/or data, and the provision of consulting and engineering services.

Fundamental Space Research: Primarily research related to non- or pre-commercial space activities.

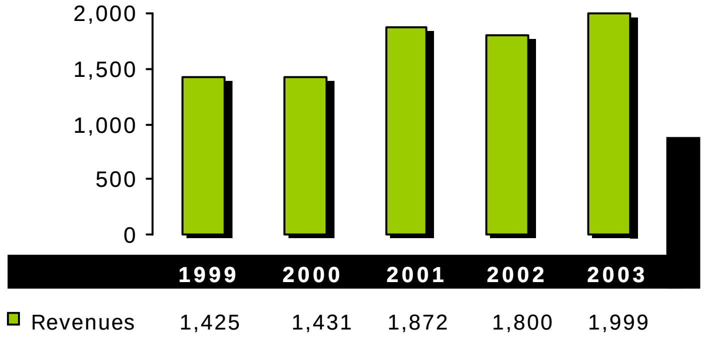
[2] *CSA acknowledges a margin of error in the final results of approximately 2.5%.*

REVENUES
Overall Revenues
Domestic v. Export Revenues

OVERALL REVENUES

Total revenues for the Canadian space sector in 2003 were reported as $2B, an increase of 11% or $199M, over those achieved during 2002. Over the last five years (since 1999) the total revenues generated by the Canadian space sector have increased 40%. Increases were seen in both Domestic and Export revenue streams.

Total Space Revenues: 1999-2003 (C$m)



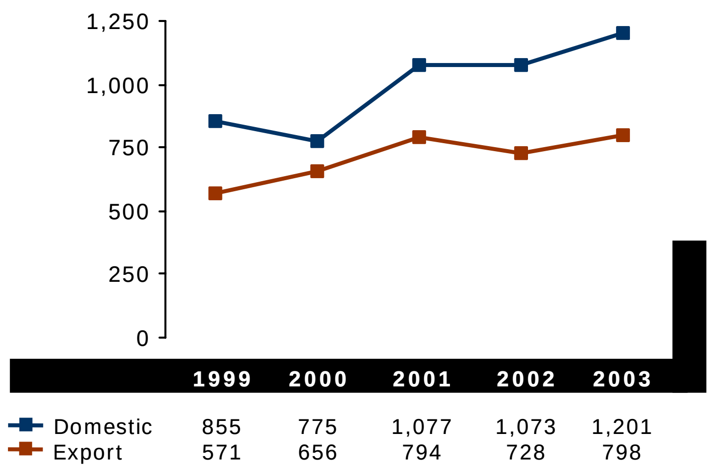
DOMESTIC v. EXPORT REVENUES

During 2003, revenues from domestic sources were $1.2B, representing an increase of 12% over those reported in 2002 ($1.073B).

In 2003, domestic revenues represented 60% of total revenues, ($1.2 of $2B) achieving the same levels as seen in 2002. Export revenues also increased during 2003, growing 10% (approximately $70M) from $728M in 2002 to $798M in 2003. Over the past five years, total export revenues have increased by 40%.

In 2003, the proportion (ratio) of overall space revenues represented by export revenues remained at 2002 levels, namely 40%. The 40% ratio of exports to total revenues found in this year's results continues to highlight the strong export orientation of the Canadian space industry while perhaps also reflecting the on-going difficulty the industry is encountering growing sales in the international marketplace.

Domestic v. Export Revenues: 1999-2003 (C$m)

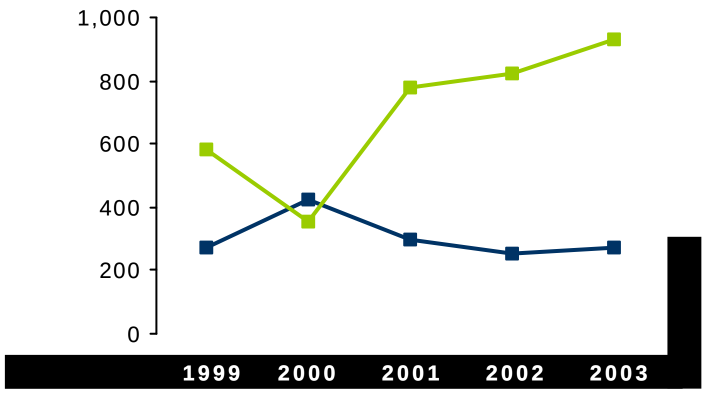


DOMESTIC REVENUES

Annually, respondents are asked to identify the source of their domestic revenues as either being derived from government ("Public") or non-government ("Private") sources. In 2003, the space sector continued the trend by deriving the large majority of their revenues from non-government sources.

In 2003, of the total $1.2B total domestic revenues, non-governmental sources yielded $932M or 78%. Domestic revenues from government sources increased 7%, increasing from $252M in 2002 to $270M in 2003. Once again, this finding where non-government sources outweigh revenues from government sources in 2003, is consistent with the overall trend observed since reporting began in 1996 (save for a one-time observation in 2000). The survey results show that the overall share of non-government derived sources of revenues increased in 2003 yielding a ratio of **78%/22%**, for "Private"/"Public" sources respectively compared with a ratio of **77%/23%** observed in 2002.

Sources of Domestic Revenues
Public v. Private: 1999-2003 (C$m)



	1999	2000	2001	2002	2003
Public	272	422	299	252	270
Private	583	353	778	821	932

EXPORT REVENUES

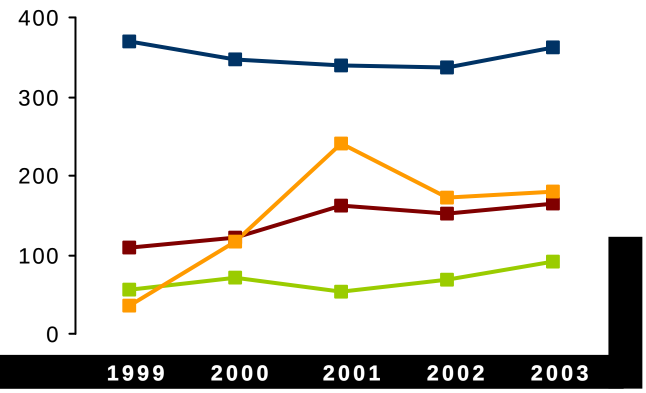
The 2003 survey results confirm the **U.S.** as the strongest performing market source of export revenues for Canada's space organizations, representing 45% (or $363M) of the $798M in total export revenues, and increased by 8% over levels observed in 2002. This is the same proportional representation achieved in 2002. Revenues from US sources in 2003 returned to within striking distance of those observed in 1999, hopefully reversing the downward trend observed over the past few years.

Revenues from **Europe** increased 8% during 2003, increasing $12M from $153M in 2002 to $165M in 2003. European-derived revenues accounted for 21% of the overall $798M export revenues, the same proportion achieved during 2002.

Revenues from **Asia** showed positive growth in 2003, increasing $24M, or a significant 35% during 2003. Asian-derived revenues represented 11% ($91M) of total export revenues compared with the 9% reported for 2002. This is the most significant growth for Asian-derived revenues seen since 1997 and are proving to continue to be a good source of revenues for Canada's space industry.

In 2003, Canada's space industry derived $179M from sources of trade outside of its traditional trade markets. Revenues registered by respondents in the category **'Other'** represented 22% of total export revenues. Sources of revenues reported in this edition of survey results, in this category, include Canadian industrial activity in South and Central America, amongst others.

Sources of Export Revenues: 1999-2003 (C$m)

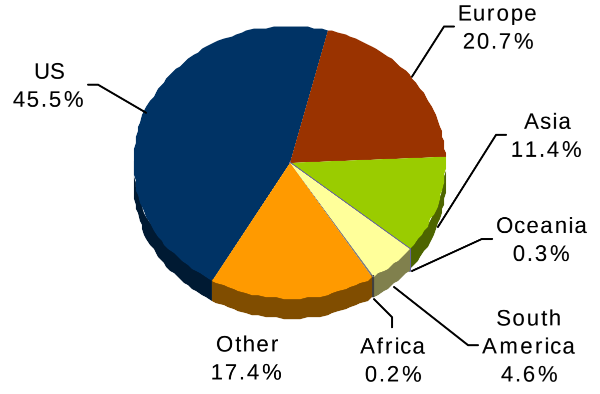


	1999	2000	2001	2002	2003
US	370	348	339	336	363
Europe	110	121	161	153	165
Asia	55	71	53	68	91
Other	35	116	241	171	179

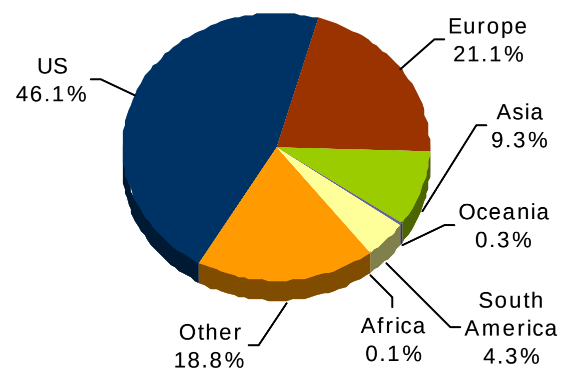
EXPORT REVENUES CONT.

Since 2000, respondents have been asked for a further breakdown of their revenues derived from **'Other'** sources to provide a more complete understanding of market-performance for the continents of Oceania, South America and Africa. The results of this new breakdown are provided in the accompanying graph, providing a comparison of results for the two-year period from 2002-2003. In 2003, there was a growth in revenues reported for all three of these sources: Africa, a significant 239%; South America, 17%; and Oceania, 0.4%.

Proportion of Export Revenues: 2003



Proportion of Export Revenues: 2002



REVENUES OF CANADA'S TOP 30 SPACE ORGANISATIONS

In 2003, 98% of the total space revenues are accounted for by the Top 30 Canadian organizations developing and/or using space assets. This finding mirrors the results of the 2002 survey.

In 2003, **40** organizations reported revenues equal to or in excess of $1M compared with 40 organizations so reporting in 2002. This number still falls short of the levels previously reported, for example in 1996, where 47 companies earned revenues in excess of $1M.

REVENUES
Revenues by Space Categories

REVENUES BY SPACE CATEGORIES

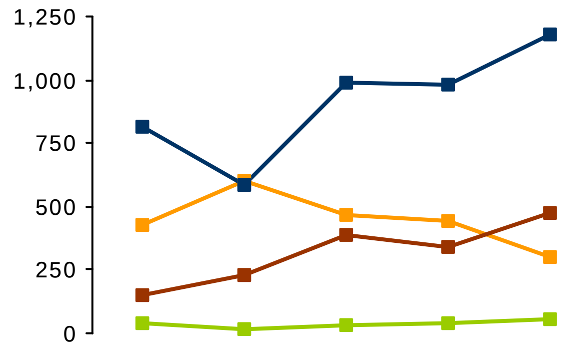
Space Segment: Revenues declined during 2003, 33% ($148M) over levels achieved in 2002. This makes three consecutive years of decline in revenues for the space segment category. Since 1999, revenues in this category have declined $128M or 30%. Space segment revenues represented 15% of total space sector revenues in 2003, down from the percentage (25%) found in 2002.

Ground Segment: Revenues grew during 2003, increasing an impressive 40% ($133M) over levels achieved in 2002. This marks a major recovery for the ground segment, which last year reported decreases. Ground Segment revenues represented 24% of total revenues in 2003 compared with the 19% it represented in 2002.

Applications and Services: Revenues increased during 2003, up 20% (198M) from levels achieved in 2002. Applications and Services revenues represented 59% of total space sector revenues in 2003, a 4% increase over that recorded in 2002. Over the 1999-2003 timeframe, revenues from Applications and Services have grown 44% and continue to represent the leading source of total revenues for the space sector industry.

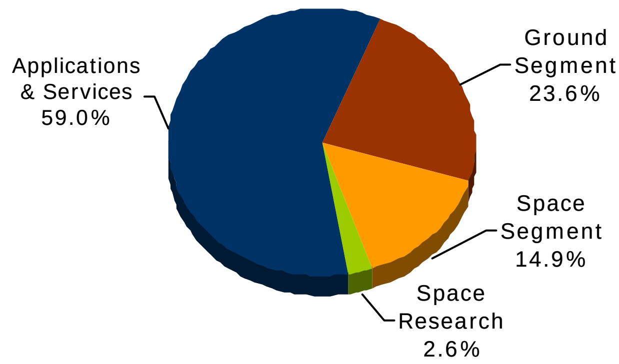
Space Research: Revenues increased 43% ($16M) during 2003, growing from $37M in 2002 to $53M in 2003. Space Research revenues accounted for 3% of total space revenues, compared with the 2% reported in 2002.

Total Revenues by Space Category: 1999-2003 (C$m)



	1999	2000	2001	2002	2003
Space Segment	425	602	467	445	297
Ground Segment	147	229	386	338	471
Apps & Services	816	584	989	981	1,179
Space Research	38	16	30	37	53

Proportion of Revenues by Space Category: 2003



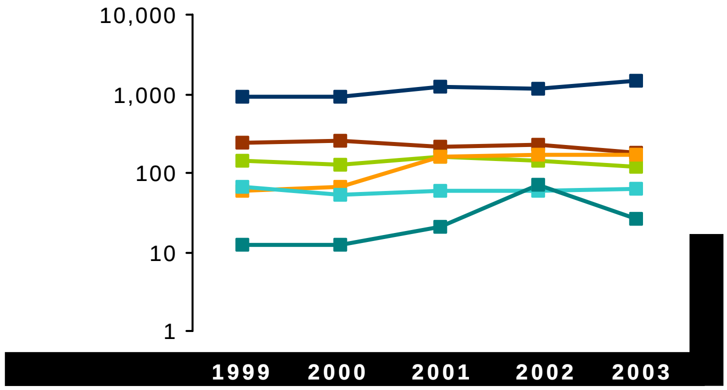
REVENUES BY SECTOR OF ACTIVITY

Telecommunications: As has been the case since tracking began, the Telecommunications sector generated the lion's share of the Canadian space sector's revenues in 2003, representing 72% or $1.45B of the total reported revenues. This represents a 28% ($319M) increase over levels observed in 2002. Over the past five years, telecommunications revenues have increased by 61%.

Given the significant contribution of the revenues generated by the Telecommunications sector to overall space revenues, the data were again broken down to identify the specific sources of revenues. The results are shown in the **Chart: Breakdown of Telecommunications Revenues (2003).**

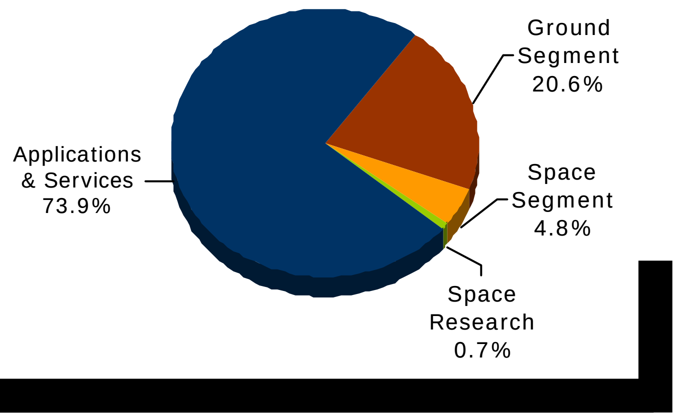
Of the $1.45B generated in the Telecommunications Sector, the large majority of revenues, that is 74% or $1.069B, is from activities in Applications and Services, although this is short of that found last year (at 78%). Of the remaining 26% the breakdown is as follows: 21% or $298M is generated from Ground Segment activities, 5% or $70M is from Space Segment, and 1% or $10M is from Space Research. Clearly, the noteworthy increase in revenues generated within the Ground Segment during 2003 has contributed appreciably to the overall growth in the Telecommunications Sector.

Total Revenues by Sectors of Activity: 1999-2003 (C$m) (Logarithmic)



	1999	2000	2001	2002	2003
Telecom	901	920	1,261	1,128	1,447
Earth Obs.	246	254	219	232	184
Robotics	140	126	156	146	116
Navigation	58	67	155	165	165
Space Sci.	68	52	59	58	62
Other	12	12	21	71	26

Breakdown of Telecommunications Revenues: 2003



REVENUES BY SECTOR OF ACTIVITY CONT.

Earth Observation: Revenues for the Earth Observation (EO) sector, the second largest space sector of activity, declined 21% in 2003, dropping from $232M to $184M (or $48M). EO revenues represented 9% of the total revenues, showing a decrease from the 13% observed in the previous year. Overall, revenues have declined 25% ($63M) between 1999 and 2003.

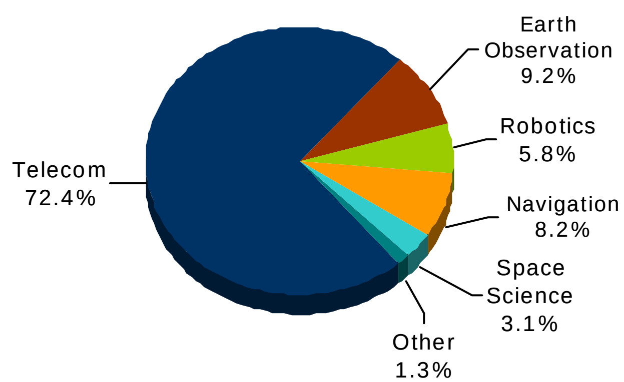
Robotics: Revenues in this sector fell by 20% during 2003 ($30M) and generated 6% of the total space revenues, in contrast to its stronger proportional position in 2002 at 8%. In fact, the 2003 revenues from Robotics activities were the lowest observed since tracking began in 1996.

Navigation: Revenues from the navigation sector stabilized during 2003 remaining at levels observed in 2002 ($165M). Navigation revenues represented 8% of the total space revenues, a 1% decrease over 2002 figures, where Navigation generated 9% of total revenues. Since specific tracking of this sector began in 1998, revenues have grown by $98M or 146%, signifying the importance of this sector of activity for the Canadian space sector.

Space Science: During 2003, revenues within the Space Science sector of activity increased 7% or $4M, up from $58M to $62M. Revenues generated from Space Science activities represented 3.1% of total revenues, similar to levels reported for 2002. Since 1999, revenues have decreased $5M or 8.1%. It is interesting to note that revenues from Space Sciences in general have varied little since tracking began in 1996 where revenues were reported as $57M.

Other: Space-related activities in areas other than those classified above, reported a very significant 64% decrease over revenues reported in 2002, dropping from $71M to $26M. Activities in the "Other" activity represented 1.3% of total space revenues.

Proportion of Revenues by Sectors of Activity: 2003



REVENUES
Revenues by Region

REVENUES BY REGION

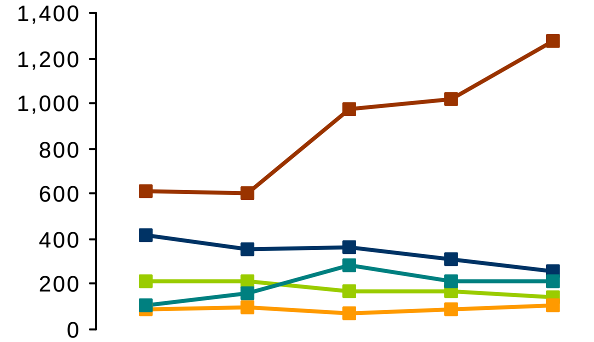
British Columbia: Revenues from British Columbia decreased by 15.1% during 2003, declining $26M over 2002 levels (declining from $169M to $144M). British Columbia revenues represented 7.2% of total revenues for the space sector, a 2% decrease over 2002. Since 1999, revenues from British Columbia have decreased 32% (or $67M).

B.C. derived a slight majority of its revenues from the domestic market ($76M), which in 2003 represented 53.1% of its total revenues, compared to 46.9% ($67M) derived from export markets. In 2002, the ratio of domestic to export sources was 62/38. It is worth noting that in 2003 B.C. overall revenue decreases are largely accounted by decreases in the domestic sources. In 2003, domestic revenues decreased 26.7% and since 1999, domestic revenues have decreased 34% (or $-39M). Export revenues in 2003 grew a modest 3.4% and since 1999, export revenues have decreased 29.5% (or -$28M)

Prairies: Total revenues for Canada's Prairie region (Alberta, Saskatchewan and Manitoba) increased a notable 21% between 2002 and 2003 (growing from $88M to $106M). In 2003, the Prairies generated 5.3% of the total space sector revenues, a 0.4% increase over 2002. Over the five-year period 1999 to 2003, total revenues have risen 25.3% ($21M).

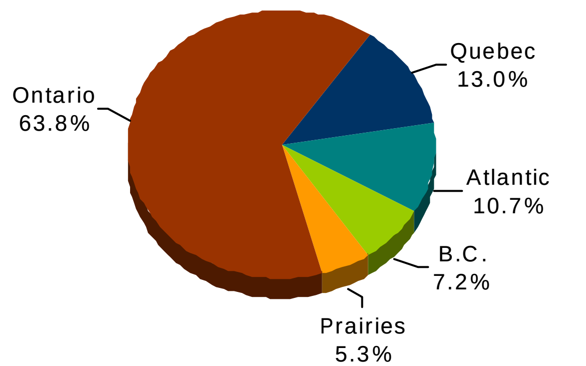
Canada's Prairie region continued to derive the majority (63.8%) of its total revenues from exports in 2003, reporting a total of $68M in exports. This represented an increase of 7.1% over exports for 2002. Domestic revenues also grew, by a significant 55.4%, from $25M to $38M. Between 1999 and 2003, the Prairie's export revenues have grown 19.4% and its domestic revenues have grown 37.1%.

Revenues by Region: 1999-2003 (C$m)



	1999	2000	2001	2002	2003
B.C.	211	217	166	169	144
Prairies	85	101	75	88	106
Ontario	611	600	978	1,018	1,275
Quebec	416	353	366	313	261
Atlantic	103	160	286	213	214

Regional Proportion of Total Revenues: 2003



REVENUES BY REGION CONT.

Ontario: Given that a major proportion of overall revenues are typically generated within Ontario, it is noteworthy that revenues in Ontario rebounded in 2003, growing 25.3%, or $257M growing from $1.018B to $1.275B. In 2003, Ontario further increased its contribution to overall space revenues, generating 63.8% of the total, up from the 57% contribution level reported in 2002, further signifying the importance of the economic activity within Ontario for the Canadian space industry. Overall, between 1999 and 2003, space revenues have more than doubled, increasing 108.6% and adding $664M to overall Canadian space revenues.

Once again, in 2003 the majority of Ontario revenues were derived from domestic sources; 76.5% (or $976M) of Ontario's space revenues were derived from domestic sources while 23.5% ($300M) were derived from exports. Domestic-derived revenues increased 21.3% during 2003 and exports increased 40.3%. Over the five-year period 1999 to 2003, domestic revenues have more than doubled growing from $466M in 1999 to $976M in 2003. Exports have also doubled, growing from $146M in 1999 to $300M in 2003.

Quebec: Revenues from Quebec decreased 16.6% or $52M during 2003 and represented 13% of the total space revenues in Canada. This is a decrease from the 17.4 percentage contribution observed in 2002. Over the five-year period 1999 – 2003, revenues have decreased 37%.

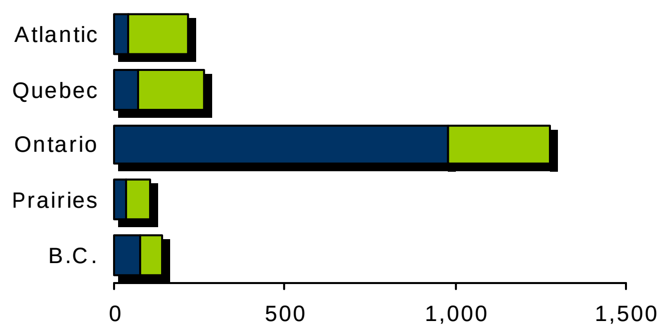
In 2003, Quebec continued to derive the majority of its revenues – 72.9% - from exports ($190M). However, the 2003 figures are once again lower than for 2002 and 2001 where the comparable numbers were $212M/68% and $257M/70% respectively. Export revenues dropped 10.5%, from $212M in 2002 to $190M in 2003.

Domestic revenues also decreased, dropping 29.7% from $100M to $71M. Since 1999, export revenues have decreased by $7M or 3.6%, as have domestic revenues, which decreased by $162M or 69.6% during the same period of time.

Atlantic: Revenues increased in Atlantic Canada during 2003 by 0.7%, up from $213M to $214M in 2003. Atlantic Canada represented 10.7% of the total space revenues whereas it represented 11.8% of the total in 2002.

Atlantic Canada continued to derive the majority of its revenues from export sources, which in 2003 represented $173M (or 81.0%) of the total $214M. Export revenues remained at 2002 levels, that is $173M. Domestic revenues increased 3.8% from $39M in 2002 to $41M in 2003. Since 1999, Atlantic Canada's export revenues have shown significant growth (93.9%). Domestic revenues have also shown major growth, showing over 203% growth since 1999.

Domestic v. Export Revenues by Region: 2003 (C$m)



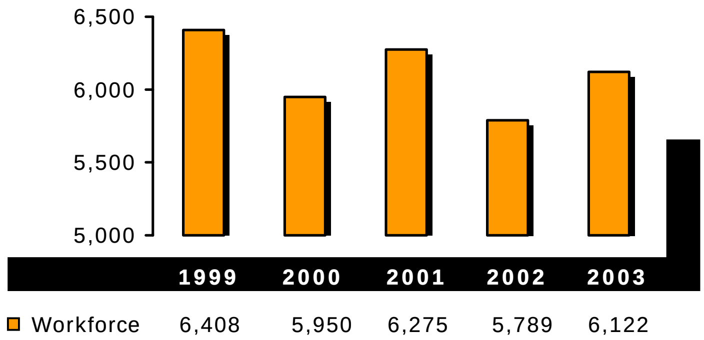
	B.C.	Prairies	Ontario	Quebec	Atlantic
Domestic	76	38	976	71	41
Export	67	68	300	190	173

SPACE SECTOR WORKFORCE
Workforce Groups

SPACE SECTOR WORKFORCE

During 2003, the Canadian space sector employed 6122 workers; 333 new workers were employed representing an increase of 5.7% over 2002. Although an increase over the ground lost during 2002, the 2003 employment figure is still below that achieved in 1999.

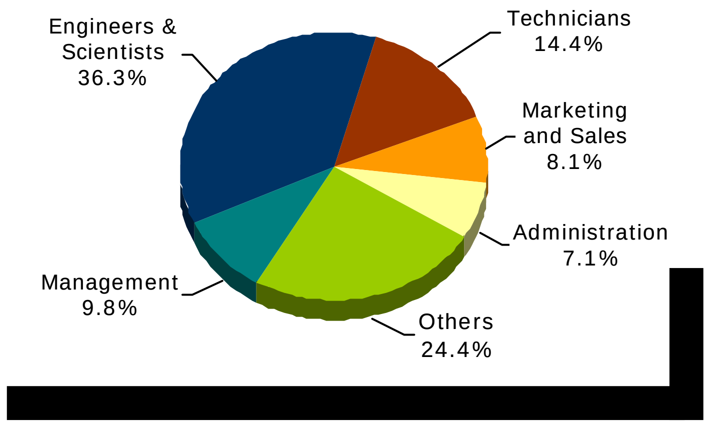
Space Sector Workforce: 1999-2003



WORKFORCE GROUPS

Of the five main sector employment groups, the **"Engineers and Scientists"** group continued to predominate the workforce, comprising the largest number of employees, namely 2221 workers or 36% of the space sector workforce in 2003. The chart below provides a breakdown of the distribution of employment groups working in the Canadian space sector in 2003.

Workforce by Space Employment Categories: 2003



Workforce Groups by Region: 2003

	BC	Prairies	Ont.	Que.	Atlantic	Total
Mngmt	62	33	370	99	34	598
Eng/Sci.	184	218	853	924	43	2,221
Tech.	39	59	532	180	75	884
Mktg/Sls	61	16	351	21	45	494
Admin.	56	25	271	59	23	434
Other	3	47	1,298	120	23	1,491
Total	405	397	3,675	1,403	243	6,122

WORKFORCE BY REGION

British Columbia employed 405 or 6.6% of the nation's space workforce in 2003. This represents a 20.4% (-104) decrease in employment for BC in 2003.

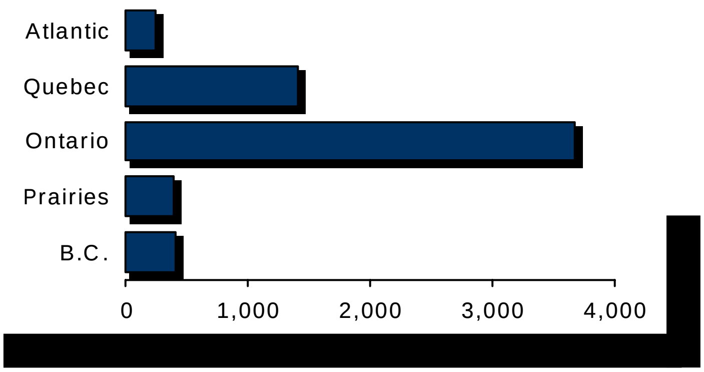
The **Prairies** employed 6.5% of the space sector workforce (397), representing a 4.7% increase over 2002. In 2003, the Prairies employed 18 more workers than in 2002.

Ontario added 250 workers to its roster during 2003, employing 3,675 people, growing its relative contribution to the total workforce to 60% (from 59% in 2002) of the total space sector workforce. The space sector workforce in Ontario has grown by 19.8% from 3066 to 3675 between 1999 and 2003.

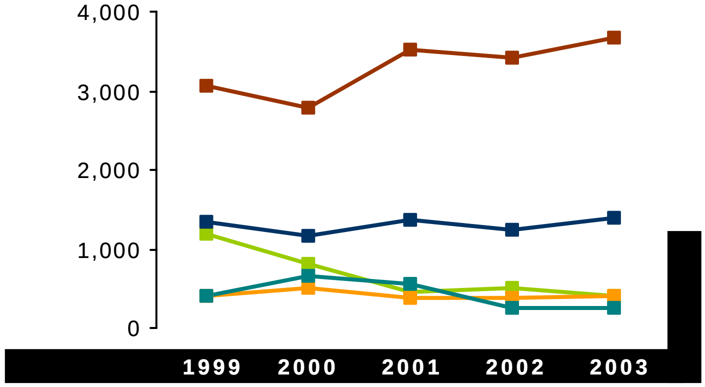
While still representing 22.9% (1,403) of the total space sector workforce, the **Quebec** based space sector employment figures increased by 14.2% (174) during 2003. Since 1999, Quebec has shown a positive growth in employment of 5%.

Atlantic Canada employed 4.0% of the country's space sector workforce in 2003, the same proportion it shared in 2002. Since 1999, Atlantic Canada has decreased its space sector workforce by 39.5% or 158 workers.

Space Sector Workforce by Region: 2003



Space Sector Workforce by Region: 1999-2003



	1999	2000	2001	2002	2003
B.C.	1,193	817	457	509	405
Prairies	414	499	374	379	397
Ontario	3,066	2,793	3,525	3,425	3,675
Quebec	1,335	1,176	1,366	1,229	1,403
Atlantic	401	665	553	248	243