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Industrial Research and Development, 2002 to 2006

Highlights

- ▶ Industrial research and development (R&D) spending should reach \$14.9 billion in 2006 according to reported intentions. Industrial R&D spending is still recovering from the information communications technology (ICT) sector and in particular the communications equipment industry's decreased spending in R&D that occurred in 2002. At the height of the ICT boom in 2001, R&D spending by these industries represented 46% of industrial R&D, this has since levelled at just below 40%.
- ▶ Between 2002 and 2006 the manufacturing sector's share of industrial R&D has declined five percentage points from 61% to 56% while the services sector's share has increased by five percentage points from 35% to 40%. The industry that showed the strongest decline in its share of industrial R&D and is primarily responsible for the overall decline in industrial R&D spending in manufacturing, is communications equipment, which has seen its proportion of total industrial R&D spending fall from 15% to 11% between 2002 and 2006. Within the services sector, the industry group showing the strongest increase in its share of total industrial R&D spending is information and cultural industries which have doubled their share from 5% to 10%.
- ▶ Although communications equipment industry's share of industrial R&D spending has been declining since 2001, this industry still leads all industries in R&D spending. Information and cultural industries are a close second (\$1.58 billion to \$1.52 billion). The next largest industrial R&D spenders continue to be pharmaceutical and medicine manufacturing (\$1.29 billion) scientific research and development services (\$1.14 billion) and computer system design and related services (\$1.06 billion).

Note to users:

A new estimation system was put in place for survey year 2003. Data for outstanding administrative records are estimated to reduce any understatement of R&D and in particular R&D employment counts. The new estimation system has projected data for more than 2,500 firms. The estimation of these records is also reflected in the 2005 planned expenditures and the 2006 spending intentions. For survey year 2004, a new reconciliation process was introduced for revenue data for firms in which their R&D spending data were taken from Canada Revenue Agency (CRA) records.

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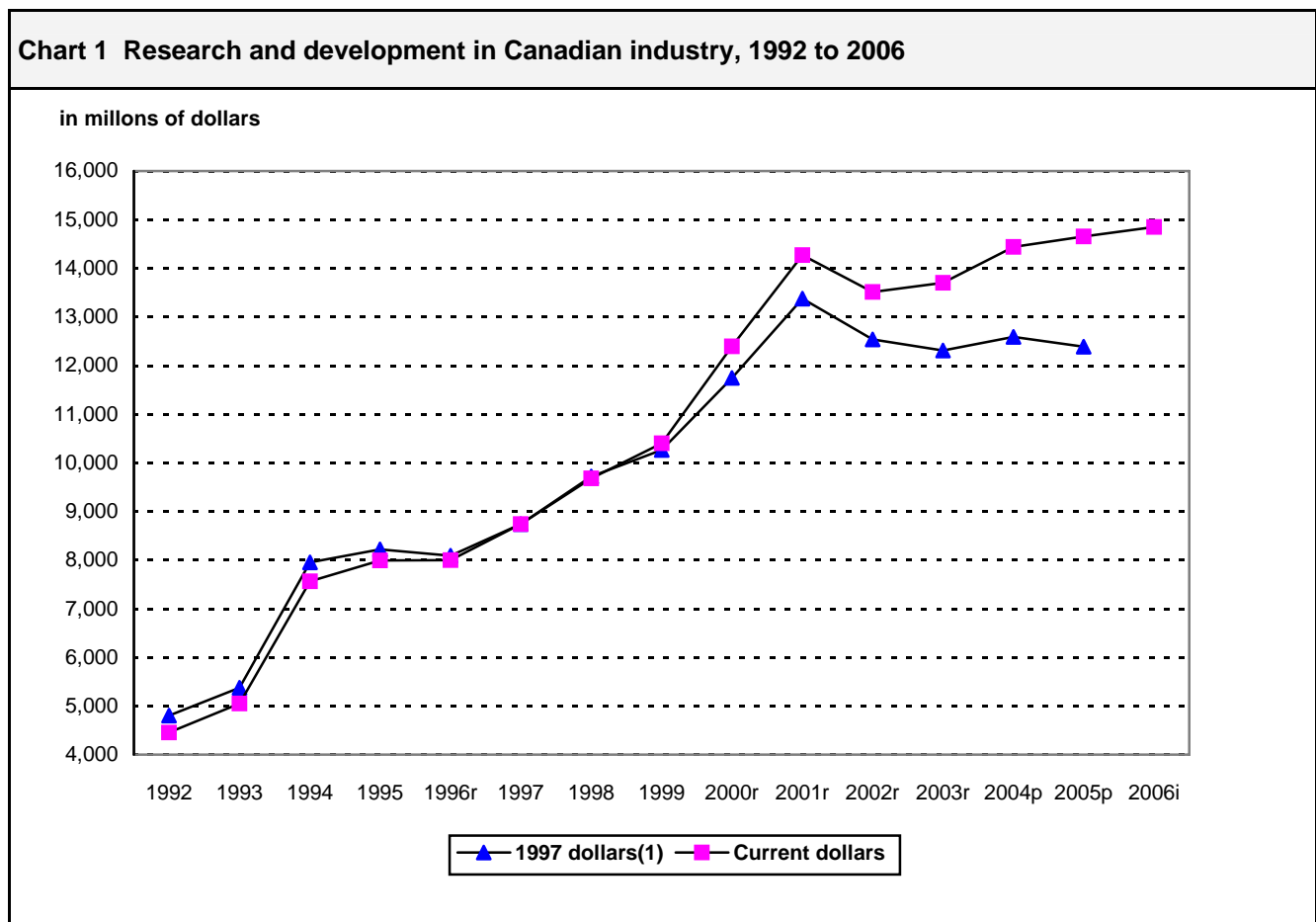
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The statistics in this bulletin are derived from the 2004 survey of industrial R&D activities in Canada, which covers firms spending a million dollars or more on the performance or funding of R&D in Canada, and from the administrative data of the Canada Revenue Agency (CRA) for firms which spend less than a million dollars on the performance or funding of R&D in Canada. CRA data are supplemented with estimates data, to allow for the timing difference between CRA filing and the survey. This is explained in the note on Methodology on page 13. The 2004 survey, conducted in 2005, collected data on actual R&D spending for 2004, on preliminary figures for 2005, and on spending intentions for 2006.

R&D statistics are provided for 46 industries falling under 6 sub-groups: Agriculture, forestry, fishing and hunting; Mining and oil and gas extraction; Utilities; Construction; Manufacturing; and, Services industries. The industry breakdown is in accordance with the *North American Industry Classification System Canada 2002* (NAICS) (Catalogue no. 12-501-XPE) and is necessary to preserve the confidentiality of the respondents. In a small number of cases, adjustments to the NAICS classification was necessary in order to adhere to the international guidelines for science and technological surveys as defined in the Organisation for Economic Co-operation and Development (OECD) *Frascati Manual: Proposed Standard Practice for Surveys on Research and Experimental Development*.

Chart 1 shows that industrial research and development spending in 1997 constant dollars peaked in 2001 and has remained relatively stable since 2002. The 2006 industrial research and development spending intentions indicates that this pattern continues.



1. The deflator for 1992-2005 is the implicit price index of the GDP: 1997=100, CANSIM Table 384-0036.

Table 1 Total intramural R&D expenditures, by industry, 2002 to 2006					
Industries	2002 ^r	2003 ^r	2004 ^p	2005 ^p	2006 ⁱ
	in millions of dollars				
Agriculture, forestry, fishing and hunting					
Agriculture	84	59	64	61	56
Forestry and logging	17	20	19	18	19
Fishing, hunting and trapping	6	6	5	5	5
Total agriculture, forestry, fishing and hunting	107	86	88	85	80
Mining and oil and gas extraction					
Oil and gas extraction	209	215	208	178	191
Mining	45	53	66	67	70
Total mining and oil and gas extraction	254	268	274	245	261
Utilities					
Electric power	125	121	233	184	186
Other utilities	6	9	11	11	11
Total utilities	131	130	244	195	197
Construction					
Construction	47	43	46	46	46
Manufacturing					
Food	89	108	123	117	117
Beverage and tobacco	27	42	26	30	29
Textile	48	51	54	51	48
Wood products	56	58	61	59	59
Paper	405	403	468	468	468
Printing	22	22	25	25	25
Petroleum and coal products	99	139	135	131	143
Pharmaceutical and medicine	1,163	1,121	1,185	1,251	1,293
Other chemicals	260	260	201	185	178
Plastic products	88	110	116	127	131
Rubber products	16	23	23	23	23
Non-metallic mineral products	46	45	50	52	52
Primary metal (ferrous)	42	31	37	35	36
Primary metal (non-ferrous)	192	231	214	205	203
Fabricated metal products	156	171	175	172	177
Machinery	456	452	446	470	488
Computer and peripheral equipment	206	191	165	167	170
Communications equipment	1,995	1,698	1,504	1,553	1,580
Semiconductor and other electronic components	811	740	802	837	869
Navig., measuring, medical and control instruments	364	346	365	330	345
Other computer and electronic products	18	19	22	22	22
Electrical equipment, appliance and components	212	167	136	134	129
Motor vehicle and parts	432	451	533	523	537
Aerospace products and parts	867	889	886	890	912
All other transportation equipment	17	24	44	44	45
Furniture and related products	21	23	26	26	26
Other manufacturing industries	149	161	165	162	167
Total manufacturing	8,257	7,973	7,986	8,092	8,273
Services					
Wholesale trade	628	633	729	770	757
Retail trade	46	33	24	24	24
Transportation and warehousing	45	35	37	40	40
Information and cultural industries ¹	624	1,115	1,361	1,456	1,518
Finance, insurance and real estate	215	235	303	331	356
Architectural, engineering and related services	499	487	497	478	442
Computer system design and related services	1,076	1,077	1,126	1,163	1,056
Management, scientific and technical consulting	88	74	65	66	69
Scientific research and development services	888	922	1,110	1,083	1,142
Health care and social assistance	383	381	347	365	364
All other services	229	212	206	215	225
Total services	4,720	5,205	5,803	5,992	5,993
Total all industries	13,516	13,704	14,441	14,655	14,850

1. The increase in the R&D expenditures from 2002 to 2003 in the Information and cultural industries industry group is due to a revision of R&D expenditures in the Wired telecommunications carriers industry.

Table 2 R&D expenditures and personnel in information and communications technology (ICT), 2002 to 2006					
	2002 ^r	2003 ^r	2004 ^p	2005 ^p	2006 ⁱ
in millions of dollars					
ICT industries					
Total R&D expenditures	5,268	5,366	5,501	5,696	5,730
Current	4,886	4,955	5,160	5,335	5,274
Capital	382	411	341	361	456
full-time equivalent					
Total R&D personnel	48,626	47,647	49,222	..	..
Professional	35,135	33,495	35,513	..	..
Technicians	9,845	9,337	9,538	..	..
Other	3,646	4,815	4,171	..	..
in millions of dollars					
Non ICT industries					
Total R&D expenditures	8,248	8,338	8,940	8,959	9,120
Current	7,575	7,784	8,355	8,418	8,558
Capital	673	554	586	541	562
full-time equivalent					
Total R&D personnel	69,652	72,573	77,449	..	..
Professional	37,985	38,663	40,768	..	..
Technicians	21,725	23,502	25,587	..	..
Other	9,942	10,408	11,094	..	..

Table 2 indicates that R&D spending for both the ICT and the non ICT industries continues at a constant level with the share of industrial R&D spending by ICT industries remaining around 39%. The same is not true for R&D personnel. Between 2002 and 2004, non ICT industries registered steady increases in their R&D personnel attaining 77,449 in 2004 up from 69,652 in 2002. On the other hand, the number of R&D personnel in ICT industries has fluctuated during this three year period, declining between 2002 and 2003 and then rebounding to reach the high for this period of 49,222 full-time equivalents in 2004. The information and communications technology (ICT) sector is comprised of a subset of the NAICS codes from various industries. (NAICS 3333, 33411, 33421, 33422, 33431, 33441, 33451 and 33592); Wholesale trade (NAICS 4173 and 41791); Information and cultural industries (NAICS 5112, 517 to 518); Real estate and rental leasing (NAICS 53242); Professional, scientific and technical services (NAICS 5415) and Other services (NAICS 8112). For a complete description of these NAICS, refer to the *North American Industry Classification System Canada 2002 (NAICS)* (Catalogue no. 12-501-XPE).

Chart 2 Total intramural expenditures on information and communication technology (ICT) R&D, 2002 to 2006

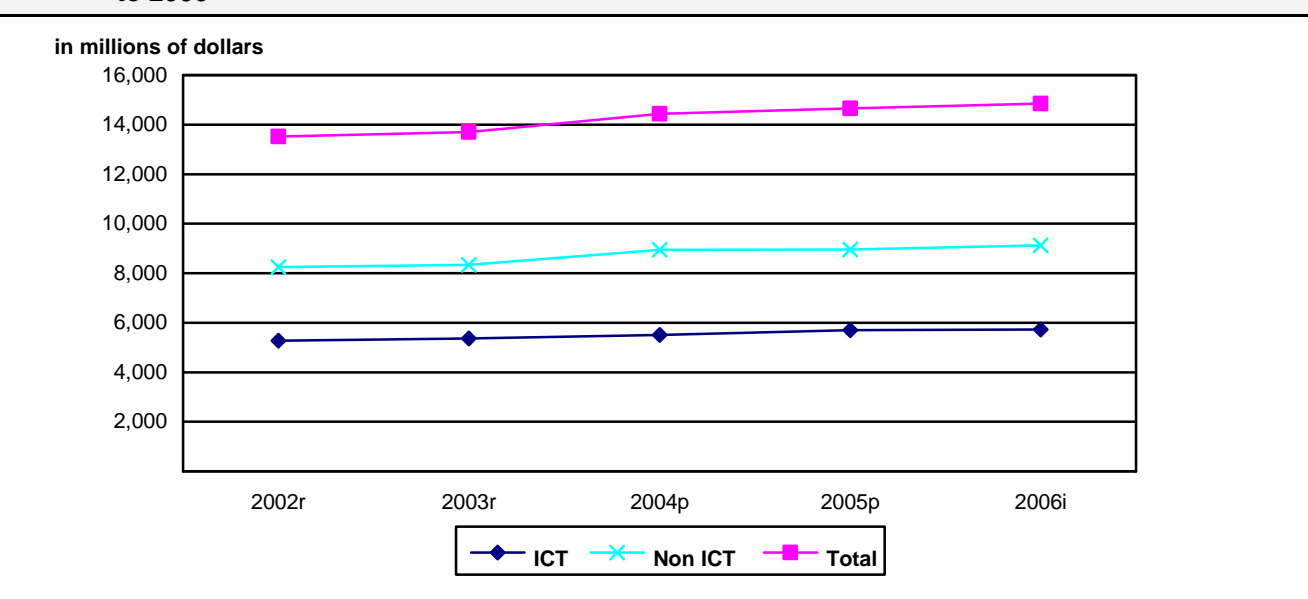
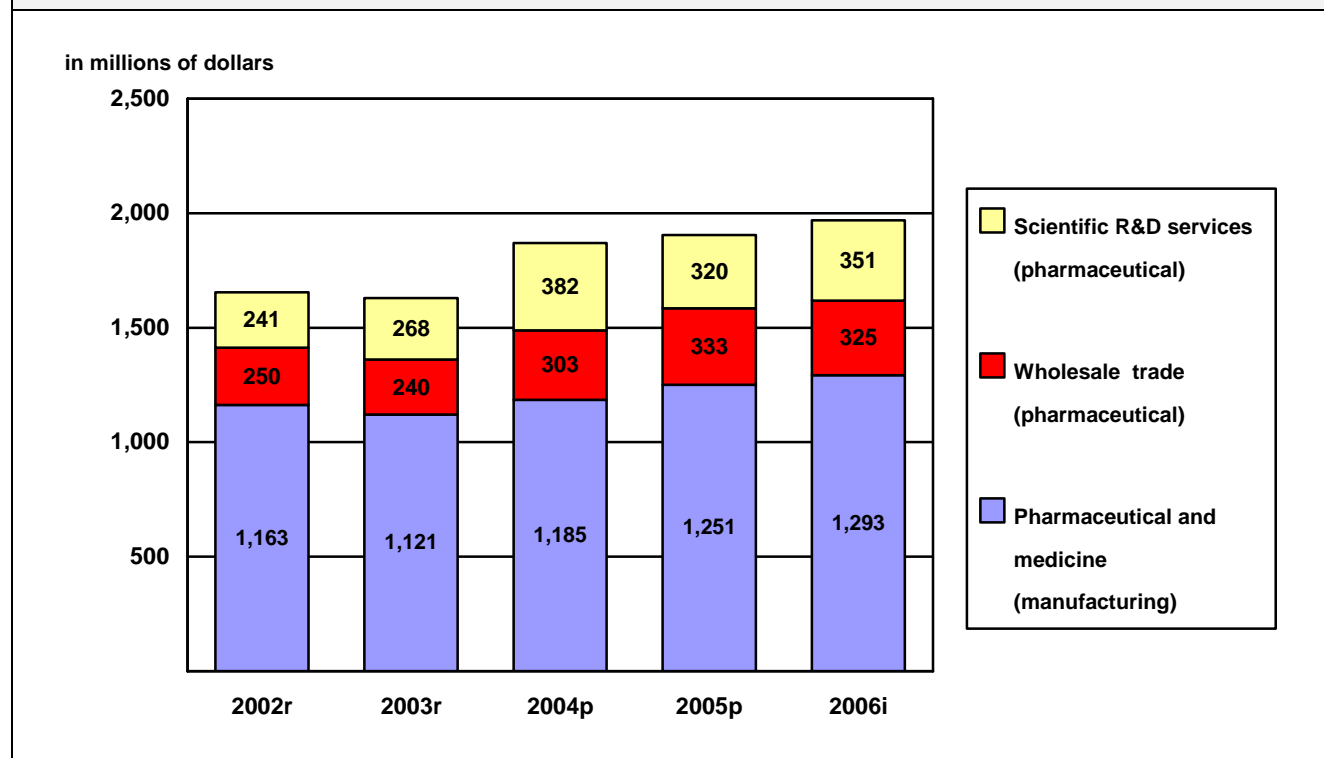


Table 3 Total intramural expenditures, on pharmaceutical and medicine R&D, 2002 to 2006

Industries	2002 ^f	2003 ^f	2004 ^p	2005 ^p	2006 ⁱ
	in millions of dollars				
Pharmaceutical and medicine (manufacturing)	1,163	1,121	1,185	1,251	1,293
Wholesale trade (pharmaceutical)	250	240	303	333	325
Scientific research and development services (pharmaceutical)	241	268	382	320	351
Total pharmaceutical and medicine R&D	1,654	1,629	1,870	1,904	1,969

The special industrial aggregation created for pharmaceutical and medicine research and development includes firms in pharmaceutical and pharmacy supplies wholesaler-distributors (NAICS 414510 within the wholesale trade), scientific research and development services and pharmaceutical and medicine manufacturing. In the scientific research and development services industry, major performers of pharmaceutical R&D are identified on a case by case basis. The pharmaceutical and medicine manufacturing industry continues as the second largest industry after communications equipment in terms of industrial R&D spending in manufacturing in 2006. Total pharmaceutical and medicine R&D accounted for 13.3% of all industrial R&D spending in 2006, a much smaller share than that registered for the ICT industries of 38.6%.

Chart 3 Total intramural expenditures on pharmaceutical and medicine R&D, 2002 to 2006



Industrial R&D spending can be allocated regionally and this distribution is presented in tables 4 to 12. Planned 2005 R&D spending and 2006 R&D intentions cannot be distributed therefore the tables present R&D spending from 1995 to 2004. Not surprisingly Canada's most populous provinces, Ontario and Quebec, that together account for 63% of gross domestic product by province in 2004 (CANSIM 384-0002) were also the two provinces that together accounted for four-fifths of industrial R&D in Canada (Table 4). The next two largest provinces, British Columbia at almost one-tenth (9%) and Alberta (6%) ranked third and fourth according to share of industrial R&D.

Alberta continued to dominate industrial R&D in the mining and oil and gas extraction industries with 74% of this activity overall occurring there. Because mining and oil and gas extraction comprises 24% of Alberta's industrial R&D, it is the one of just two regions or provinces in 2004 in which the share of industrial R&D for services industries at 34% is greater than that for manufacturing industries (30%). Industrial R&D in British Columbia is now concentrated in the services industries (63%) which is up from 55% of industrial R&D in 2002. In 1995, in British Columbia one-half (50%) of industrial R&D was conducted in services industries.

Table 4 Total intramural R&D expenditures, by province, 1995 to 2004										
Province	1995	1996 ^f	1997	1998	1999	2000 ^f	2001 ^f	2002 ^f	2003 ^f	2004 ^p
	in millions of dollars									
Newfoundland and Labrador	11	16	14	17	18	20	20	22	26	26
Prince Edward Island	3	3	3	3	3	5	6	4	7	6
Nova Scotia	64	54	54	62	62	67	91	95	77	89
New Brunswick	53	59	35	39	38	40	45	64	62	76
<i>Sub-total, Atlantic Provinces</i>	<i>131</i>	<i>132</i>	<i>106</i>	<i>121</i>	<i>121</i>	<i>132</i>	<i>163</i>	<i>185</i>	<i>172</i>	<i>197</i>
Quebec	2,277	2,393	2,519	2,764	3,047	3,642	4,159	4,131	4,154	4,307
Ontario	4,320	4,257	4,833	5,394	5,799	6,856	7,900	7,063	7,241	7,457
Manitoba	96	93	89	102	148	133	173	149	136	165
Saskatchewan	74	58	82	74	78	76	87	112	84	111
Alberta	491	524	546	618	491	583	711	782	790	892
British Columbia	602	538	564	608	714	973	1,080	1,092	1,127	1,309
Yukon, Northwest Territories and Nunavut	1	0	1	1	2	0	1	1	0	3
Total	7,991	7,997	8,739	9,682	10,400	12,395	14,272	13,516	13,704	14,441

Table 5 Total intramural R&D expenditures, by major NAICS industry – Canada, 1995 to 2004

Industrial sector	1995	1996 ^f	1997	1998	1999	2000 ^f	2001 ^f	2002 ^f	2003 ^f	2004 ^p
	in millions of dollars									
Agriculture, forestry, fishing and hunting	58	63	61	52	69	77	92	107	86	88
Mining and oil and gas extraction	202	197	189	154	134	182	216	254	268	274
Utilities	206	234	185	218	196	187	171	131	130	244
Construction	24	24	37	26	35	45	51	47	43	46
Manufacturing	4,977	5,117	5,789	6,505	7,077	8,509	9,236	8,257	7,973	7,986
Services	2,524	2,363	2,478	2,728	2,888	3,395	4,504	4,720	5,205	5,803
Total¹	7,991	7,997	8,739	9,682	10,400	12,395	14,272	13,516	13,704	14,441

1. Canada totals include the Yukon, Northwest Territories and Nunavut.

Table 6 Total intramural R&D expenditures, by major NAICS industry – Atlantic Canada, 1995 to 2004

Industrial sector	1995	1996	1997	1998	1999	2000	2001	2002 ^f	2003 ^f	2004 ^p
	in millions of dollars									
Agriculture, forestry, fishing and hunting	5	5	3	2	2	3	2	3	3	3
Mining and oil and gas extraction	x	x	x	x	x	x	x	x	x	x
Utilities	x	x	x	1	1	x	x	x	x	x
Construction	1	0 ^s	x	x	x	2	2	2	0 ^s	0 ^s
Manufacturing	57	56	55	70	68	60	84	88	95	109
Services	66	65	47	46	48	61	69	86	68	78
Total	131	132	106	121	121	132	163	185	172	197

Table 7 Total intramural R&D expenditures, by major NAICS industry – Quebec, 1995 to 2004

Industrial sector	1995	1996	1997	1998	1999	2000	2001 ^f	2002 ^f	2003 ^f	2004 ^p
	in millions of dollars									
Agriculture, forestry, fishing and hunting	11	13	12	13	17	23	27	37	32	33
Mining and oil and gas extraction	19	11	x	x	x	x	x	x	x	x
Utilities	x	x	x	x	x	x	x	x	x	x
Construction	x	x	22	11	16	20	23	18	19	23
Manufacturing	1,371	1,434	1,551	1,640	1,811	2,136	2,457	2,434	2,374	2,400
Services	724	810	825	963	1,086	1,358	1,543	1,533	1,621	1,747
Total	2,277	2,393	2,519	2,764	3,047	3,642	4,159	4,131	4,154	4,307

Table 8 Total intramural R&D expenditures, by major NAICS industry – Ontario, 1995 to 2004

Industrial sector	1995	1996 ^f	1997	1998	1999	2000 ^f	2001 ^f	2002 ^f	2003 ^f	2004 ^p
	in millions of dollars									
Agriculture, forestry, fishing and hunting	20	26	21	19	23	18	25	28	25	26
Mining and oil and gas extraction	22	18	30	29	25	27	20	16	29	30
Utilities	x	x	x	x	x	x	52	12	15	15
Construction	x	x	x	x	x	x	20	20	16	16
Manufacturing	3,041	3,085	3,581	4,098	4,453	5,371	5,658	4,877	4,699	4,620
Services	1,171	1,009	1,115	1,167	1,215	1,361	2,125	2,111	2,457	2,750
Total	4,320	4,257	4,833	5,394	5,799	6,856	7,900	7,063	7,241	7,457

Table 9 Total intramural R&D expenditures, by major NAICS industry – Manitoba, 1995 to 2004

Industrial sector	1995	1996	1997	1998	1999	2000	2001	2002 ^f	2003 ^f	2004 ^p
	in millions of dollars									
Agriculture, forestry, fishing and hunting	0 ^s	0 ^s	0 ^s	1	1	1	2	2	1	1
Mining and oil and gas extraction	x	x	x	x	x	x	x	x	x	x
Utilities	x	x	x	x	x	x	x	x	x	x
Construction	0 ^s	0 ^s	0 ^s	0 ^s	x	1	0 ^s	2	1	0 ^s
Manufacturing	49	42	34	43	83	75	124	87	80	98
Services	43	49	53	51	59	49	45	57	52	64
Total	96	93	89	102	148	133	173	149	136	165

Table 10 Total intramural R&D expenditures, by major NAICS industry – Saskatchewan, 1995 to 2004

Industrial sector	1995	1996	1997	1998	1999	2000	2001	2002 ^f	2003 ^f	2004 ^p
	in millions of dollars									
Agriculture, forestry, fishing and hunting	x	4	X	x	x	x	x	x	x	4
Mining and oil and gas extraction	4	x	22	3	x	x	12	33	16	13
Utilities	0	0	0	0	0	0	0	x	0	x
Construction	x	x	x	x	0	0 ^s	x	0	x	x
Manufacturing	39	28	27	33	35	34	37	32	32	41
Services	25	23	26	36	36	31	31	40	32	36
Total	74	58	82	74	78	76	87	112	84	111

Table 11 Total intramural R&D expenditures, by major NAICS industry – Alberta, 1995 to 2004

Industrial sector	1995	1996	1997	1998	1999	2000	2001 ^f	2002 ^f	2003 ^f	2004 ^p
	in millions of dollars									
Agriculture, forestry, fishing and hunting	5	4	2	4	9	8	7	7	3	3
Mining and oil and gas extraction	138	155	118	101	84	129	163	179	206	203
Utilities	x	x	x	x	0 ^s	0 ^s	0 ^s	1	1	x
Construction	x	x	x	x	0 ^s	2	2	2	2	x
Manufacturing	157	203	259	298	219	258	299	300	291	271
Services	188	160	163	212	177	187	240	292	288	303
Total	491	524	546	618	491	583	711	782	790	892

Table 12 Total intramural R&D expenditures, by major NAICS industry – British Columbia, 1995 to 2004

Industrial sector	1995	1996	1997	1998	1999	2000	2001	2002 ^f	2003 ^f	2004 ^p
	in millions of dollars									
Agriculture, forestry, fishing and hunting	12	11	15	11	15	20	23	23	18	17
Mining and oil and gas extraction	16	5	13	12	11	x	18	20	9	10
Utilities	x	5	5	5	x	x	6	5	7	7
Construction	x	3	2	5	x	9	5	4	5	4
Manufacturing	261	267	281	322	407	574	577	438	402	446
Services	307	246	248	252	266	348	451	601	687	825
Total	602	538	564	608	714	973	1,080	1,092	1,127	1,309

Table 13 Total intramural R&D expenditures, by employment size, 2002 to 2006					
Employment size	2002 ^f	2003 ^f	2004 ^p	2005 ^{E(1)}	2006 ^{E(1)}
	in millions of dollars				
Non-commercial enterprise	163	204	193	195	198
1 to 49	1,960	2,130	2,250	2,284	2,314
50 to 99	1,222	1,087	1,157	1,175	1,190
100 to 199	1,208	1,025	1,110	1,126	1,141
200 to 499	1,274	1,260	1,186	1,204	1,220
500 to 999	1,283	1,386	1,329	1,349	1,367
1,000 to 1,999	1,866	1,862	2,260	2,293	2,324
Greater than 1,999	4,541	4,751	4,955	5,029	5,096
Total	13,516	13,704	14,441	14,655	14,850

1. Values for 2005 and 2006 are estimated based on employment size as reported for 2004 fiscal year.

As Chart 1 indicates, R&D spending in 2002 declined sharply and this was due primarily to the technology bubble bursting in communications equipment. Table 13 shows that the share of industrial R&D attributed to large firms with at least 1,999 employees has remained quite consistent from 2002 to 2006 at around one third. The largest firms, based on revenue size group have also maintained a relatively consistent share of industrial R&D spending.

Table 14 Total intramural R&D expenditures, by performing company revenue size, 2002 to 2006					
Revenue size	2002 ^f	2003 ^f	2004 ^p	2005 ^{E(1)}	2006 ^{E(1)}
	in millions of dollars				
Non-commercial firms	163	204	193	195	198
< \$ 1,000,000	1,440	1,151	1,285	1,304	1,321
\$ 1,000,000 – 9,999,999	1,933	2,093	1,937	1,965	1,992
\$ 10,000,000 – 49,999,999	1,709	1,565	1,680	1,704	1,727
\$ 50,000,000 – 99,999,999	655	721	862	874	886
\$ 100,000,000 - \$399,999,999	1,924	2,059	2,003	2,033	2,060
> \$ 399,999,999	5,692	5,912	6,482	6,580	6,666
Total	13,516	13,704	14,441	14,655	14,850

1. Values for 2005 and 2006 are estimated based on revenue size as reported for 2004 fiscal year.

The principal source of funding in 2004 continued to be the performing business enterprises themselves. They financed 79% of the total R&D expenditures. Funding of the industrial R&D from foreign sources remained 15% of the total industrial R&D while the federal government's contribution was still 2% and other Canadian sources accounted for 4% (Table 15).

Table 15 Sources of funds for intramural R&D, by industrial sector 2004, with total values for 2003					
Industrial sector	Canadian performing company	Federal government ¹	Other Canadian sources ²	Foreign sources	Total
in millions of dollars					
Agriculture, forestry, fishing and hunting	53	4	16	15	88
Mining and oil and gas extraction	231	1	42	0	274
Utilities	218	0	21	5	244
Construction	45	0	1	0	46
Manufacturing	6,644	170	222	950	7,986
Services	4,171	82	297	1,253	5,803
Total 2004^P	11,362	257	599	2,223	14,441
Total 2003^r	10,739	302	618	2,045	13,704

1. Taxes foregone as a result of income tax incentives for R&D are not considered direct government support and are not attributed to the Federal Government according to international standards.

2. Includes funds from related companies, from R&D contracts for other firms and grants and contracts from the provincial governments.

The number of FTE's (full-time equivalent) engaged in industrial R&D in 2004 increased by 5.4% (6,451 workers) from the previous year. R&D professionals, those with a university degree, increased by 5.7%. Technicians also saw a strong increase of 7% or 2,286 workers in 2004. The remaining R&D personnel that include administrative support personnel remained stable at 15,265 workers (Table 16).

The preliminary R&D personnel for 2004 have been estimated for the outstanding smaller firms. This is the result of the revised survey methodology as explained on page 13. The intended improvements in the estimates based on this estimation system are reflected in the 2003 revised R&D personnel data which increased by only 3.4% as compared to the previously released 2003 data. The revision increase for these data in 2002 was 12.5%.

Table 16 Number of FTE's engaged in R&D, by occupational category and by degree level, 2002 to 2004			
Occupation/degree level	2002 ^r	2003 ^r	2004 ^p
	full-time equivalent		
Professionals			
Bachelor's	58,959	54,819	56,426
Master's	9,564	11,893	14,108
Doctorate	4,597	5,446	5,747
<i>Sub-total, Professionals</i>	<i>73,120</i>	<i>72,158</i>	<i>76,281</i>
Technicians	31,570	32,839	35,125
Other	13,588	15,223	15,265
Total	118,278	120,220	126,671

Methodology

The Annual survey "Research and Development in Canadian Industry, 2004" was mailed out in June 2005, to all companies known to be performing or funding \$1 million or more in R&D. The data collected from this survey are augmented by tax data for those companies falling below the \$1 million threshold.

Prior to 1997, Statistics Canada surveyed all firms that performed or funded R&D in Canada. Virtually all of these firms also provided information to CRA in order to claim tax benefits under the Scientific Research and Experimental Development (SR&ED) program. In an effort to reduce respondent burden, Statistics Canada stopped surveying the small performers and funders (those with less than \$1 million of R&D in Canada) and instead, imputed their R&D data using CRA administrative data from the SR&ED program.

This initiative resulted in an understatement of the total value of intramural expenditure and of the total number of R&D personnel, for the most recent years reported. The understatement was a result of the different time frame for the collection of the survey and the administrative data. Beginning last year a new estimation system was put in place to impute values for these outstanding data. The estimation system uses industry trends and Statistics Canada's extensive Business Register database, to ensure the company is active, before applying an estimate.

The 2004 survey collected data on four years. The four years were: 2003 for which the data are expected to be final; 2004, for which the data are expected to be close to final, 2005 for which the data are planned expenditures, and 2006 for which the data are a forecast of spending intentions.

Data from the surveyed firms in 2004 represent approximately 86% of the total expenditures. Estimates are not available for administrative data for 2005 and 2006. Therefore, based on the percentage increase or decrease by industry reported by the surveyed firms, forecasts are made for planned expenditures and spending intentions based on the administrative data.

Trends in R&D spending are important economic signals and the trends are not seriously affected by a small estimation of the outstanding CRA data. For this reason, the R&D data are published as soon as possible after the survey is conducted, and revised in subsequent publications.

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 Statistics Act
E	use with caution
F	too unreliable to be published

Other symbols

i	intentions
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NOTE: Due to rounding, components may not add to totals.

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<http://www.statcan.ca:8096/bsolc/english/bsolc?catno=88-001-X>

Current publications of the Science and Technologies Surveys section include:

Industrial Research and Development, 2005 Intentions (with 2004 preliminary estimates and 2003 actual expenditures) Catalogue No. 88-202-XIE, annual. It presents statistics on research and development (R&D) activities performed and funded by Canadian business enterprises. The report covers current and capital expenditures on R&D, R&D as a percent of performing company revenues, R&D expenditures by province, the company's country of control, personnel engaged in R&D and payments for technological services.

<http://www.statcan.ca:8096/bsolc/english/bsolc?catno=88-202-X>

Federal Science Activities, 2004-2005, Catalogue No. 88-204-XIE, annual. It presents statistics on the federal government's activities in science and technology (S&T). It covers expenditures and full-time equivalent by type of science, performing sectors, provinces, federal departments and agencies.

<http://www.statcan.ca:8096/bsolc/english/bsolc?catno=88-204-X>

Note of appreciation

Canada owes the success of its statistical system to a long-standing cooperation involving Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued cooperation and goodwill.

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