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Information and Communications Technologies (ICT)



ICT Sector Intramural R&D Expenditures

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Information and Communications Technologies Statistical Overview

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ICT Sector Intramural R&D Expenditures, 2011

- ICT sector R&D expenditures rebounded in 2011 after three years of decline. In 2011 ICT sector R&D expenditures were \$5.3 billion, which represents an increase of 7.0% from 2010. ICT R&D expenditures increased by only 1.2% over the 2002-2011 period, a much slower growth than the total Canadian private sector R&D expenditures (15.5%). As a result, the ICT sector share of total Canadian private sector R&D spending has been falling since 2002, accounting for 34.1% of 2011 total in comparison to 39.0% in 2002.
- At the industry level, the communications equipment industry posted the largest nominal growth in 2011 (\$242 million), while the largest drop was recorded by the instruments industry (\$39 million).
- Since 2002, R&D spending in the ICT manufacturing sub-sector has declined by 27.2%. The largest declines over this period were in the computer and peripheral equipment (-77.0%) industry, followed by the electronic components (-38.5%) and communications equipment (-30.5%) industries. In the case of the electronic components industry, the drop in R&D spending was amplified by the reclassification of one or more companies towards the wholesaling industry in 2008.
- In the ICT services sub-sector, R&D spending has increased by 36.6% since 2002 with the largest increases in the data processing (449%) and communications services (216%) industries. However, it is important to note that; a) the data processing industry is relatively small and only accounts for 3.4% of total ICT services sub-sector R&D and b) that the communications services industry's R&D reached a peak in 2004 and has been declining since, though it rebounded this year.
- In the ICT wholesaling industries, R&D increased by 9.5% in 2011, totalling \$524 million.
- The manufacturing industries, as a percentage of total ICT sector R&D, decreased from 65% in 2002 to 47% in 2011. During the same period, the share of the services industries grew from 32% to 43% and the share of the wholesaling industries increased from 2.7% to 9.8%. As mentioned earlier, reclassification of one or more companies from the manufacturing industries towards the wholesaling industries in 2008 amplified the shift in these shares.
- The total Canadian private sector R&D expenditures in 2011 were \$15.6 billion, up 5.0% from the previous year.

**ICT Sector Intramural R&D Expenditures, 2002-2011
(Manufacturing and Services)**

NAICS 2002	Industry (\$'000,000)	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
33331	Commercial and Service Industry Machinery Mfg	37	43	43	65	56	61	75	164	180	186
33411	Computer and Peripheral Equipment Mfg	206	192	165	156	112	110	105	59	44	47
3342/33592	Communications Equipment and Communication Wire and Cable Mfg ¹	2,007	1,694	1,486	1,379	1,456	1,471	1,447	1,523	1,153	1,395
33431	Audio and Video Equipment Mfg	13	15	18	11	10	17	16	15	16	16
33441	Semiconductor and Other Electronic Component Mfg	811	743	811	849	847	849	452	505	514	499
33451	Navigational, Measuring, Medical and Control Instruments Mfg	369	365	383	482	451	402	416	416	403	364
	Total ICT Manufacturing	3,444	3,052	2,907	2,943	2,932	2,911	2,511	2,683	2,309	2,508
51121	Software Publishers	390	468	393	558	634	703	686	493	495	497
517	Communications Services (incl. Telecom and Cable/Other Program Distribution)	191	604	832	823	804	704	598	537	544	605
51821	Data Processing, Hosting and Related Services	14	15	19	20	26	34	49	57	63	78
54151	Computer Systems Design and Related Services	1,087	1,120	1,176	1,152	1,178	1,286	1,234	1,069	1,097	1,123
81121	Electronic and Precision Equipment Repair and Maintenance	8	9	6	8	7	17	9	7	7	8
	Total ICT Services	1,691	2,216	2,425	2,561	2,649	2,745	2,575	2,163	2,206	2,310
	ICT Wholesaling (NAICS 4173/41791) ²	145	169	193	186	184	213	560	492	478	524
	Total ICT Sector	5,280	5,437	5,525	5,691	5,760	5,869	5,647	5,338	4,993	5,341
	TOTAL CANADIAN PRIVATE SECTOR R&D	13,545	14,094	15,144	15,638	16,474	16,756	16,409	15,110	14,895	15,646
	ICT R&D as a PERCENTAGE of CANADIAN PRIVATE SECTOR R&D	39.0%	38.6%	36.5%	36.4%	35.0%	35.0%	34.4%	35.3%	33.5%	34.1%

¹ NAICS 33421, 33422 and 33592 are combined to maintain confidentiality among respondents (excluding NAICS 33429 which is not part of the ICT definition).

² NAICS 53242, ICT rental and leasing, is included in ICT wholesaling

Source: Statistics Canada (p=planned for 2008, i=intentions for 2009).

Due to rounding, numbers may not sum exactly to totals.

See Sources and Technical Notes for more details.

**Growth in ICT Sector Intramural R&D Expenditures, 2002-2011
(Manufacturing and Services)**

NAICS 2002	Industry	% Change 2010-2011	% Change 2002-2011	CAGR 2002-2011
33331	Commercial and Service Industry Machinery Mfg	3.3%	400.6%	19.6%
33411	Computer and Peripheral Equipment Mfg	8.7%	-77.0%	-15.1%
3342/33592	Communications Equipment and Communication Wire and Cable Mfg ¹	21.0%	-30.5%	-4.0%
33431	Audio and Video Equipment Mfg	3.5%	25.9%	2.6%
33441	Semiconductor and Other Electronic Component Mfg	-2.9%	-38.5%	-5.3%
33451	Navigational, Measuring, Medical and Control Instruments Mfg	-9.5%	-1.4%	-0.2%
	Total ICT Manufacturing	8.6%	-27.2%	-3.5%
51121	Software Publishers	0.4%	27.3%	2.7%
517	Communications Services (incl. Telecom and Cable/Other Program Distribution)	11.2%	216.2%	13.6%
51821	Data Processing, Hosting and Related Services	24.1%	448.6%	20.8%
54151	Computer Systems Design and Related Services	2.3%	3.3%	0.4%
81121	Electronic and Precision Equipment Repair and Maintenance	9.9%	-5.8%	-0.7%
	Total ICT Services	4.7%	36.6%	3.5%
	ICT Wholesaling (NAICS 4173/41791)²	9.5%	260.9%	15.3%
	Total ICT Sector	7.0%	1.2%	0.1%
	TOTAL CANADIAN PRIVATE SECTOR R&D	5.0%	15.5%	1.6%

¹ NAICS 33421, 33422 and 33592 are combined to maintain confidentiality among respondents (excluding NAICS 33429 which is not part of the ICT definition)

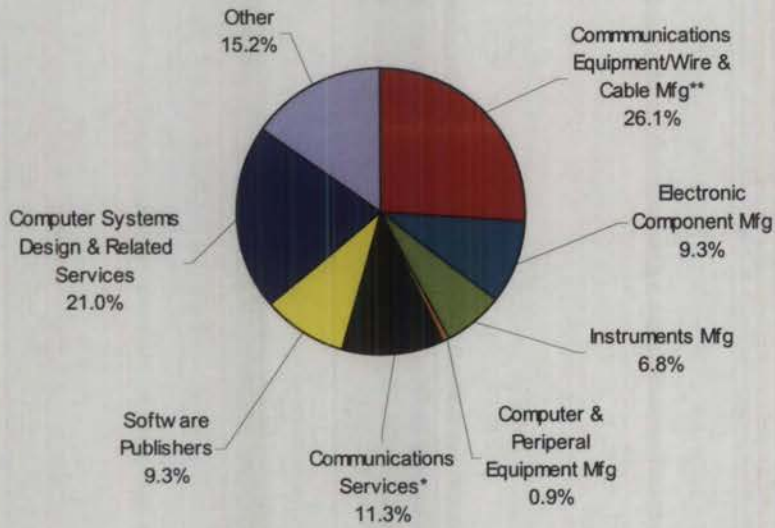
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Source: Statistics Canada (p=planned for 2008, i=intentions for 2009).

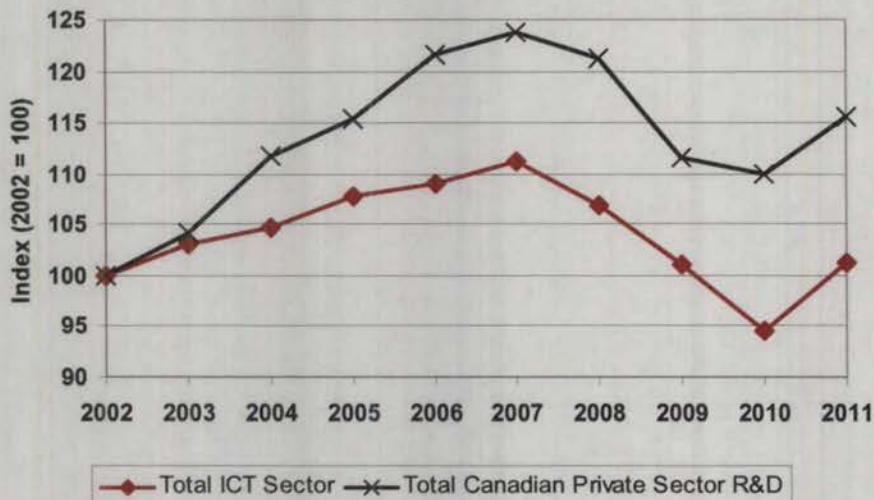
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**Distribution of R&D Expenditures by ICT Industry,
2011 (Total: \$5.3 Billion)**



Indexed Growth in R&D Expenditures for the ICT Sector and the Canadian Private Sector, 2002-2011



**Indexed Growth in R&D Expenditures
by ICT Segment, 2002-2011**

