

# Canada's Top 100 Corporate R&D Spenders List 2002 Analysis

## R&D Spending Defies Gravity

Despite 2001's market doldrums, and a downturn in the telecom sector, Canada's Top 100 R&D companies continued to expand their research and development spending at a torrid pace. In total, Canada's leading firms spent a total of \$11.9 billion to develop new products and processes in Fiscal 2001, up from same-company spending of \$11.5 billion in 2000, for an apparent year-over-year increase of 3%. However, the 2001 results are depressed by Nortel Networks' R&D spending, which dropped from \$5.9 billion in Fiscal 2000 to \$5.0 billion in 2001. Without Nortel in the mix, the top companies' spending would have jumped a healthy 23.3%, indicating a strong underlying performance trend. (In Fiscal 2000 the Top 100 firms grew their R&D spending by 28.5%, which was an outstanding year.)

Mirroring the healthy increase in overall spending, the research intensity (R&D spending as a percent of revenues) of the Top 100 firms (excluding Nortel), increased from 3.0% to 3.4% of revenues. Overall, this represents a growing commitment to research in most Top 100 firms, although in others it may reflect a slowing of revenue growth. Sixty-nine (69) of the Top 100 firms saw their revenues remain the same or increase in 2001, whereas R&D increased at 72 companies.

## The \$100 Million Club

This year, 23 companies gained membership in RE\$EARCH Infosource's elite "\$100 Million Club", spending \$100 million or more on R&D. This compares with 18 club members in Fiscal 2000. Sixteen (16) of the 23 companies are Canadian and 7 are foreign subsidiaries, indicating a strong showing by domestic companies. Two are crown corporations - Atomic Energy of Canada and Hydro Québec.

Members of the \$100 Million Club accounted for fully 77% (\$9.2 billion) of Top 100 R&D spending, and a still-impressive 61% if Nortel's spending is excluded. New to the \$100 Million Club in 2002 are Tembec (\$152 million), Creo (\$147 million), Pfizer Canada (\$132 million), Ballard Power Systems (\$128 million), and Cognos (\$104 million).

The \$100 Million Club		
2001 Rank	Company	Industry
1	Nortel Networks	Comm/telecom equipment
2	JDS Uniphase	Comm/telecom equipment
3	Pratt & Whitney Canada	Aerospace
4	Magna International	Automotive
5	Ericsson Canada	Comm/telecom equipment
6	ATI Technologies	Computer equipment
7	IBM Canada	Software and computer services
8	Alcan	Mining and metals
9	Atomic Energy of Canada	Energy
10	PMC Sierra	Electronic parts and components
11	Tembec	Forest and paper products
12	Creo	Software and computer services
13	Pfizer Canada	Pharmaceuticals/biotechnology
14	Zarlink Semiconductor	Comm/telecom equipment
15	Ballard Power Systems	Energy
16	Bombardier	Aerospace
17	CAE	Aerospace
18	Geac Computer Corporation	Software and computer services
19	Merck Frosst Canada	Pharmaceuticals/biotechnology
20	Apotex	Pharmaceuticals/biotechnology
21	Cognos	Software and computer services
22	Hydro-Québec	Electrical power and utilities
23	GlaxoSmithKline	Pharmaceuticals/biotechnology

## Industry Performance

Boosted by Nortel's \$5 billion of R&D spending, the Communication/Telecommunication Equipment sector posted \$6.4 billion of total spending, which easily put it in first place among industry sectors. Communication/Telecommunication firms accounted for 54% of Top 100 spending in Fiscal 2001. However, without Nortel, sector spending drops to \$1.4 billion (20% of the total), compared with \$1.3 billion in Pharmaceuticals/Biotechnology (18%), and \$955 million in Software and Computer Services (14%). The Aerospace sector captured fourth place overall with \$686 million of spending (10%).

With 18 companies in the industry investing a total of \$6.4 billion in R&D in 2001, the Communication/Telecommunication Equipment sector remains Canada's largest R&D performer. JDS Uniphase, which was still reporting strong revenues in 2001, increased its R&D spending by nearly 200%, to \$505 million, somewhat ameliorating Nortel's \$1 billion drop in spending. Overall, sector firms recorded a research intensity of 17.3%, compared with the Top 100 total of 5.2%. The sector's research intensity increased 31.4% over Fiscal 2000. Individual company results ranged from a low of 5.8% (Motorola Canada) to 89.1% (724 Solutions).

Second place in industry spending goes to Pharmaceuticals/Biotechnology. Twenty five (25) companies - fully one-quarter of the Top 100 - spent over \$1.27 billion on R&D. Sector spending increased 14.7% over Fiscal 2000, which lagged revenue growth of 24.4%. As a result, the sector posted a 7.8% decrease in its research intensity. Top spot went to Pfizer Canada, which posted \$132 million of R&D.

Third among industry performers is Software & Computer Services. Sixteen (16) firms, led by IBM Canada, spent a total of \$955 million in 2001. The industry posted a 19.2% increase in Fiscal 2001 spending, compared with the 3.0% Top 100 total.

Although there are only 3 Top 100 firms represented, the Aerospace sector occupies fourth place in industry spending. Total sector spending reached nearly \$686 million, paced by Pratt & Whitney Canada. Pratt & Whitney Canada increased spending by 32.9% to a total of \$440 million, or 16.9% of revenues. P&WC accounts for 64% of Top 100 Aerospace spending, and ranks third overall on the Top 100 list. R&D spending at the two other Top 100 Aerospace firms, Bombardier and CAE, dropped in 2001.

Thanks to strong growth in R&D spending, the Energy industry overtook Electronic Parts & Components, to hold down fifth spot in sector spending in Fiscal 2001. Six (6) Energy firms increased their overall R&D spending by 24%, against revenue increases of 13.4%. R&D spending was flat at AECL (3.2% increase), but large jumps at Ballard Power Systems (up 44.7%), Global Thermoelectric (up 452%) and Suncor Energy (up 650%) moved the sector up the ranking.

Another way of expressing the performance of the different industries is to rank their companies' total research intensity (R&D as a percent of revenue). Three industries stand out, with their companies spending upwards of 9.7% of revenues on R&D.

<b>The Most R&amp;D Intensive Industries</b>	
<b>Industry</b>	<b>R&amp;D as % of Revenue</b>
Comm/telecom equipment	17.3
Pharma/biotechnology	14.1
Software & computer services	9.7

## The Top 10 R&D Intensive Firms

The R&D intensity of this select group of firms greatly exceeds that of most Top 100 companies. Leading the pack are early-stage companies in the Pharmaceuticals & Biotechnology industry. The leader in research intensity is ConjuChem, which reported \$17.8 million of R&D spending against revenues of only \$1.1 million. Four other Pharma/Bio firms - Angiotech Pharmaceuticals, Stressgen Biotechnologies, Biomira and Inex Pharmaceuticals - are also investing heavily in R&D, with no significant revenues to show. World Heart Corporation continues to spend on R&D in its quest for markets for its mechanical heart product. Ballard Power Systems increased its revenues by 36.4% last year, but increased its R&D investment even faster, up 44.7% over Fiscal 2000.

Top 10 Research Intensive Companies*		
2001 Rank	Company	R&D as % of revenue
85	ConjuChem	1,551.5
95	Angiotech Pharmaceuticals	1,346.6
54	Stressgen Biotechnologies	662.6
43	Biomira	574.1
57	World Heart Corporation	407.1
76	Inex Pharmaceuticals	385.5
15	Ballard Power Systems	228.4
96	Global Thermoelectric	98.2
33	724 Solutions	89.1
90	Visible Genetics	79.8

\*\$1 million or more of revenue

## Gainers and Losers

Twenty-five (25) of the Top 100 firms increased their R&D spending by 50% or more between Fiscal 2001 and Fiscal 2000. Heading the list of gainers was Suncor Energy, which recorded \$15 million of R&D - a 650% increase - against revenues of nearly \$4 billion. However, Suncor still spends only 0.4% of revenues on R&D. With \$15 million of R&D spending, Global Thermoelectric, another Energy firm, realized a 452.4% increase, spending as much on R&D as the company recorded in revenues.

Delano Technology, a Software & Computer Services firm, increased R&D spending from \$5.4 million to \$26.9 million, even faster than its revenues, which grew from \$14 million to \$47 million.

Other firms which reported significant R&D spending increases are Pfizer Canada, Certicom, JDS Uniphase, Westport Innovations, NSI Global, AltaRex and ConjuChem.

Top 10 Companies by R&D Growth		
2001 Rank	Company	R&D Exp % Change '00-'01
99	Suncor Energy	650.0
96	Global Thermoelectric	452.4
67	Delano Technology	396.8
13	Pfizer Canada	202.1
81	Certicom	201.0
2	JDS Uniphase	199.6
77	Westport Innovations	157.5
97	NSI Global	144.6
66	AltaRex	123.9
85	ConjuChem	123.9

A number of well known companies reported disappointing R&D results in 2001, mostly in line with falling revenues. Topping the list was Moore Corporation, which cut R&D spending by -50.7%, even though in its case revenues were stable. Genpharm cut back R&D spending by -43.1% even though revenues increased over 24%. Corel's revenues declined 11.1% in 2001, but the firm cut R&D spending even faster by -40%. However, Corel continued to devote nearly 19% of revenues to R&D.

Bottom 10 Companies by R&D Growth		
2001 Rank	Company	R&D Exp %Change '00-'01
93	Moore Corporation	-50.7
78	Genpharm	-43.1
48	Corel	-40.0
88	Falconbridge	-39.5
82	Westaim	-35.4
72	Schering Canada	-34.8
87	Teck Cominco	-26.1
52	Noranda	-22.9
10	PMC Sierra	-22.7
47	GSI Lumonics	-21.2

A tough metal market depressed Falconbridge's revenues by -18.2%, but the firm slashed R&D spending faster, by -39.5%. Both Westaim and PMC Sierra suffered large decreases in revenues and cut their R&D expenditures by 46.1% and 45.7% respectively. However, both these firms continue to spend a high proportion of revenues on R&D (Westaim=28.2% and PMC Sierra=45.5%). Even though revenues grew by 25.9%, Schering Canada cut R&D spending by nearly 35%. Teck Cominco, Noranda, and GSI Lumonics all saw their revenues fall, and responded by cutting back on R&D.

## A Sigh of Relief

Last year, we wondered whether 2001 R&D spending would hold up under the prospect of poor revenue prospects, which were then on the horizon for many firms and industries. Overall, Canada's Top 100 R&D companies came through with flying colours, maintaining a strong 23.3% growth in R&D spending (without Nortel). As expected, the growth of R&D spending in Communication/Telecommunication Equipment and the Electronic Parts & Components sectors fared poorly, but continued strong results in other sectors compensated. It helped that JDS Uniphase's spending increase compensated in part for Nortel's drop. It is highly likely that Nortel's spending will fall again next year, but unlike this year, JDS will not bail out the sector.

The federal government is currently formulating a national innovation strategy. The 2002 Top 100 list can give comfort to planners that Canada's R&D scene has become diverse enough to weather storms in one or two sectors. Also, two years of data indicate that business R&D is rising handsomely, which is necessary for the government to attain its objective of moving Canada from 15<sup>th</sup> to 5<sup>th</sup> position in worldwide R&D spending. The continued strength of Pharmaceuticals and Biotechnology - which represents 25% of the companies on the list - and Software & Computer services - 16% of Top 100 firms - has had a moderating effect on the overall R&D results. With the economy growing quickly in the first half of 2002, we look forward to strong R&D results next year. RE\$EARCH Infosource will continue to track corporate R&D spending trends in 2003, using our proprietary Canadian Corporate R&D Database.

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