

Top 100 Hold the Line

Company spending on research and development (R&D) by Canada's leading R&D companies held the line in the face of an economic downturn in Fiscal 2002. Sixty-five (65) companies

on the 2003 list of Top 100 Corporate R&D Spenders increased their research spending, while 34 firms cut back. (One company stayed the same.)

With Nortel Networks' results included, total revenue of the 100 companies on this year's list increased only 0.3% to \$236.3 billion. Total spending on R&D declined by -8.7%, to \$10.9 billion. However, with Nortel's results omitted, total revenue grew by 5.4% and R&D spending increased by 6.5%, demonstrating a modestly positive underlying trend. The Fiscal 2002 result is far less than the double-digit R&D spending increases of 2001 and 2000, but still better than many predicted last year.

Nortel Networks, Canada's largest R&D performer, resisted the lure of short-term cost savings, in the face of a 38.8% decline in revenue, instead choosing to reinforce its long-term competitiveness and cut research spending by only 29.8%. This left Nortel with total R&D spending of \$3.5 billion, and a research intensity ratio (R&D as a percent of revenue) of 21.1%, far in excess of the all-company average of 4.6%.

The \$100 Million Club

This year 24 companies are included in RESEARCH Infosource's elite "\$100 Million Club", spending \$100 million or more on R&D. Club members include 16 Canadian firms and 8 foreign subsidiaries.

The \$100 Million Club		
2002 Rank	Company	Industry
1	Nortel Networks	Comm/telecom equipment
2	Magna International	Automotive
3	Pratt & Whitney Canada	Aerospace
4	JDS Uniphase	Comm/telecom equipment
5	IBM Canada	Software and computer services
6	Bell Canada	Telecommunications services
7	ATI Technologies	Computer equipment
8	Bombardier	Aerospace
9	Ericsson Canada	Comm/telecom equipment
10	Alcan	Mining and metals
11	Ballard Power Systems	Primary energy
12	Atomic Energy of Canada	Primary energy
13	Apotex	Pharmaceuticals/biotechnology
14	Pfizer Canada	Pharmaceuticals/biotechnology
15	Creo	Software and computer services
16	PMC Sierra	Electronic parts and components
17	Zarlink Semiconductor	Comm/telecom equipment
18	GlaxoSmithKline	Pharmaceuticals/biotechnology
19	Merck Frosst Canada	Pharmaceuticals/biotechnology
20	CAE	Aerospace
21	Cognos	Software and computer services
22	Tembec	Forest and paper products
23	Aventis Pasteur Limited	Pharmaceuticals/biotechnology
24	Hydro-Québec	Electrical power and utilities

New to this year's list are Bell Canada, which spent \$300.0 million on research, and Aventis Pasteur, which spent \$105.7 million. Members of the \$100 Million Club accounted for 76% of total Top 100 spending, slightly down from 79% in Fiscal 2001.

Industry Performance

With Nortel's \$3.5 billion of R&D spending anchoring the sector, the Communication/telecommunication equipment industry continued to lead all other sectors, posting total spending of \$4.6 billion in Fiscal 2002. Nortel's high research intensity also helped the sector to lead on this measure, posting 21.1% overall research intensity.

But, remove Nortel's results and Canada's vibrant Pharmaceuticals/biotechnology sector jumps into the lead, leaving Communication/telecommunication equipment in second place. Topped by \$153.2 million of research at Apotex, 31 Pharmaceuticals/biotechnology companies spent a total of \$1.5 billion in Fiscal 2002, representing 20% of Top 100 spending. This compares with only \$1.1 billion, representing 15% of R&D spending, in Communication/telecommunication equipment sector, without Nortel.

Third place in the industry standings goes to the Software and computer services sector where, led by IBM Canada's \$315.3 million of R&D, 11 companies spent a total of \$905.3 million, or 12% of total Top 100 spending. Pratt & Whitney Canada led spending of the 3 Aerospace companies, to move the sector into 4th place overall, accounting for 10% of the Top 100 total. Pratt's \$428.0 million of research spending helped the company to retain its 3rd place overall ranking.

A stellar increase of 60.0% in its R&D spending, to \$574.8 million, helped Magna International to single-handedly propel the Automotive sector into 5th place overall in the industry sector rankings.

Six (6) companies in the Primary energy sector spent \$431.0 million on research, to narrowly edge-out 3 Telecommunications services firms that spent \$414.3 million, capturing 6th and 7th spots respectively, in the industry sector rankings.

The 3 leading industries led the others, with research intensity exceeding 8.3%.

The Top 10 R&D Intensive Firms

These firms have far higher research intensity than other Top 100 companies. Eight (8) of the 10 firms are operating in the Pharmaceuticals/biotechnology sector. Two (2) others are in the allied Medical devices/instrumentation industry. Most of the companies are start-up or early stage firms, still working to commercialize products. And all of them are spending more on research than they earn in revenues.

Gainers and Losers

Defying market conditions, 10 of the Top 100 companies managed to post high growth in their research spending (60% or more). Topping the list was Aastra Technologies, a Communication/telecommunication equipment manufacturer, which managed a 180.7% increase in spending. Start-up company Inflazyme Pharmaceuticals increased its research spending by 111.9%, but recorded no revenue. Another start-up, ID Biomedical, increased its research spending by 102.2% against a 328.9% increase in revenue. At Research In Motion, manufacturers of Blackberry wireless devices, revenue grew by 34.7%, and R&D spending jumped an impressive 95.6%.

But all was not sweetness and light in Fiscal 2002, as many high profile companies put the brakes on their R&D spending, sometimes exceeding their revenue declines. Interestingly, the 10 companies whose R&D spending dropped most are all household names. 724 Solutions saw the largest decline in research, shedding -56.8% of its spending, in line with a -52.0% drop in revenues.

Mining and metals leader Noranda dropped its research spending by 43.2%, in response to a small -1.0% decline in revenue. Husky Injection Molding Systems cut its research spending by 37.6% to counteract a -8.0% fall in revenue. And, Biomira's research spending dropped -32.8% against a -27.7% decline in revenue. Even though its revenue fell by only -0.8%, Bayer's Canadian operation slipped its research spending by -32.6%.

Looking Ahead

What can we look forward to in Fiscal 2003? The Top 100 companies where revenues are rising will do well to keep their R&D growing at the same pace. Companies where revenues are static or falling, will face a difficult choice; to cut R&D or not? That will be a hard decision for management and shareholders. Cutting research spending will improve the bottom line short-term, but could jeopardize the company's long-term prospects.

Of course, Canadian firms are not alone. US, Japanese and European companies have also encountered a slowing economy, and will no doubt respond as their Canadian counterparts have. At best, this could mean that the federal govern-

The Most R&D Intensive Industries

Industry	R&D as % of Revenue
Comm/telecom equipment	21.1
Pharma/biotechnology	15.0
Software & computer services	8.4

The Top 10s

Top 10 Research Intensive Companies

2002 Rank	Company	R&D as % of revenue*
69	Theratechnologies	761.5
96	Neurochem	673.9
91	GlycoDesign	569.1
62	Biomira	533.6
53	Inex Pharmaceuticals	427.2
95	AnorMED	293.5
94	CryoCath Technologies	258.8
74	World Heart	247.5
54	Stressgen Biotechnologies	239.8
93	Angiotech Pharmaceuticals	222.5

*\$1 million or more of revenue

Top 10 Companies by R&D Growth

2002 Rank	Company	R&D Exp % Change '01-'02
76	Aastra Technologies	180.7
99	Inflazyme Pharmaceuticals	111.9
97	ID Biomedical	102.2
29	Research In Motion	95.6
69	Theratechnologies	90.7
44	Westport Innovations	90.5
8	Bombardier	89.2
55	ConjuChem	83.4
90	General Electric Canada	67.5
53	Inex Pharmaceuticals	60.7

Bottom 10 Companies by R&D Growth

2002 Rank	Company	R&D Exp % Change '01-'02
70	724 Solutions	-56.8
81	Noranda	-43.2
73	Husky Injection Molding Systems	-37.6
62	Biomira	-32.8
48	Bayer	-32.6
1	Nortel Networks	-29.8
22	Tembec	-26.7
9	Ericsson Canada	-25.6
74	World Heart	-25.5
30	EnCana	-24.0

ment's strategy to move Canada from 15th to 5th place in worldwide R&D spending might benefit from slower research growth abroad than in Canada. Overall, though, policymakers will probably breathe a sigh of relief if companies can maintain their current standing and if Fiscal 2003 research spending keeps pace with revenue growth. ■

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