

New Global Innovation Study Identifies Select Group Of Companies Who Sustain Superior Financial Performance While Spending Less On R&D Than Their Competitors

- ***Booz Allen Hamilton analysis of the world's 1,000 largest R&D spenders finds no statistical relationship between R&D spending and sales growth, earnings, or shareholder returns***
 - ***Growth in R&D spending lagged sales growth in 2005, continuing trend since 2001***
 - ***CSL, Aristocrat Leisure the only Australian companies in latest Global Innovation 1000***

Sydney, 14 November 2006 – A select group of the world's 1,000 largest corporate R&D spenders perform significantly better than their competitors over a sustained period while spending less on R&D than their industry rivals, according to the second annual global innovation study conducted by global management consulting firm Booz Allen Hamilton.

The study found that although R&D spending of these 1,000 companies rose by more than \$20 billion in 2005, this increased spending does not necessarily buy effective innovation.

A group of 94 "high-leverage innovators," including Toyota, Apple, Christian Dior, Google and Caterpillar spend less than their competitors on research and development, yet consistently outperform their industry rivals across a broad set of performance measures.

The top 10 global R&D spenders in 2005 were, in descending order: Ford, Pfizer, Toyota, Daimler Chrysler, General Motors, Siemens, Johnson & Johnson, Microsoft, IBM, and GlaxoSmithKline.

Australian companies barely visible on global R&D stage

The latest Booz Allen Global Innovation 1,000 study comes as recent Australian Bureau of Statistics data shows spending on R&D in Australia rose to \$15.8 billion (1.76% of GDP) in 2004/05 from \$13.2 billion (1.69% of GDP) in 2002/03, a 19.7% increase driven partly by a surge in investment in engineering and technology in resource-rich Western Australia.

Although a record high for Australia, the country's spending as a percentage of GDP in 2004/05 still lags the OECD average of 2.26%.

Only two Australian companies recorded sufficient R&D spending to be included in the latest Booz Allen Global Innovation 1000 study - bioscience company CSL (ranked 495, with spending of USD\$110 million in 2005), and gaming company Aristocrat Leisure (ranked 885, with spending of USD\$50 million).

The study also comes as leading Australian companies and State Governments step up pressure on the Federal Government to boost public funding and support for R&D, including making changes to the R&D tax concession regime, in the lead up to the Government's industry statement expected early in 2007.

Key findings of global study

Considered the most comprehensive assessment of the influence of R&D on corporate performance to date, Booz Allen's Global Innovation 1000 identified the linkages between spending on innovation and corporate performance, and uncovered insights into how organizations can get the greatest return on their innovation investment.

Among key findings of the 2005 study:

Less than 10% of companies are High-Leverage Innovators. This year's study analysed financial data for the Global Innovation 1000 using a basket of seven performance measures from 2000 through 2005. Compared with others in their industries, only 94 of the 1,000 companies studied consistently outperformed their peers over the entire five-year period, while spending less on R&D as a percentage of sales than their industry median.

These High-Leverage Innovators use many different models and approaches to outperform their competitors, but are generally noted for their distinctive skill in at least one element of the innovation process and are adept across all of the stages. Google, for example, is known for generating new ideas with blistering speed. Toyota excels at developing its products and processes far more efficiently and effectively than most other companies. And Apple is noted for its well-honed capabilities in project selection and customer understanding. (The full list of 94 "High-Leverage Innovators" is attached.)

"Innovation can lead to higher performance, but the process isn't automatic and it does not necessarily require above average levels of investment," said Sydney-based Principal of Booz Allen Hamilton in Australia, Owen Young.

"The most successful companies combine an integrated process and a supportive culture to create a sustainable competitive advantage. There's no silver bullet, and just throwing money at the problem is not the answer," Mr Young said.

Companies are getting better at squeezing benefits from their R&D spending. Although R&D spending by the Global Innovation 1000 rose last year by more than \$20 billion, revenues rose at an even faster rate. Indeed, the most meaningful indicator of innovation investment, R&D spending as a percentage of sales, has decreased steadily since 2001, and by that measure, only 40% of the companies actually increased their spending rate in 2005.

Deep pockets can be dry wells. Analysis of the 2005 Global Innovation 1000 confirms the major finding from Booz Allen's initial 2004 study: Money simply cannot buy effective innovation. There are no significant statistical relationships between R&D spending and the primary measures of financial or corporate success: sales and earnings growth, gross and operating profitability, market capitalization growth, and total shareholder returns. Gross profits as a percentage of sales is the single performance variable with a statistical relationship to R&D spending.

Bigger can be better. Scale provides advantages to R&D spenders. For the largest 500 companies, median R&D spending was only 3.5% of sales in 2005, compared with 7.6% for the 500 smallest firms.

"For Australian companies the challenge can be particularly acute because most lack global scale," Mr Young said. "The answer is to spend on R&D wisely, and our experience suggests that channeling funds within collaborative industry networks – often involving Government or not-for-profit bodies – can be a very effective path."

Patents generally don't drive profits. Boosting R&D spending can increase the number of patents that a company creates, but there is no statistical relationship between the number or even the quality of patents and overall corporate financial performance.

One size does not fit all. R&D budget levels vary substantially, even within industries, which suggests there's no consensus on the right level of innovation investment, since companies are using a range of different innovation business models.

Effective innovators excel at four key elements. The high-leverage innovators distinguish themselves not by the money they spend, but by building strong capabilities in the four principal elements of innovation: ideation, project selection, product development, and commercialization. High-leverage innovators listen closely to their customers across the entire innovation cycle. Companies such as Stryker and Black & Decker design their innovation strategy around a keen understanding of their end customers' needs.

“The research finds that most companies can achieve a greater return on their R&D spending if they view innovation as an end-to-end process that begins with a new idea and ends with a satisfied customer,” Mr Young said. “The most effective innovation is often not the most expensive.”

Additional study findings include:

- The Global Innovation 1000 companies spent a total of \$407 billion on research and development in 2005, up 6% from 2004 — an amount larger than the combined Gross Domestic Product of Denmark and Norway and roughly equivalent to the budget of the U.S. Department of Defense.
- Global R&D spending is highly concentrated among the top 1,000. The next 1,000 companies spent a total of a mere \$25 billion in 2005. Booz Allen estimates that the Global Innovation 1000 accounts for about 85% of total global corporate R&D spending, and 55% of all R&D spending, including government and not-for-profit R&D.
- R&D spending is highly concentrated in just a few large industries. Nearly two-thirds of the 2005 total was spent in just three industries: computing and electronics (26%), health (22%), and automotive (17%).
- The proportion of R&D spending by Innovation 1000 companies outside the traditional leaders of Europe, North America and Japan increased by nearly 60% in 2005, to 4.6% of the total for the world’s top 1,000 corporate R&D spenders.

The Global Innovation 1,000 study is available online at www.boozallen.com

Booz Allen Hamilton Global Innovation 1,000: Study Methodology

Booz Allen Hamilton identified the 1,000 public companies around the world that spent the most on research and development in 2005 (companies for which public data on R&D spending was available). Subsidiaries that were more than 50% owned by a single corporate parent were excluded because their financial results were included in the parent company’s reports.

Booz Allen analyzed key financial metrics for each of the top 1,000 companies for 2000 through 2005 — sales, gross profit, operating profit, net profit, historical R&D expenditures, and market capitalization. In addition, total shareholder return was computed and adjusted for each company’s corresponding local market total shareholder return.

Each company was coded into one of 10 industry sectors (or “other”) according to Bloomberg’s industry designations, and into one of five regional designations according to reported headquarters locations for each company. To enable meaningful comparisons across industries on R&D spending levels, Booz Allen indexed the R&D spending level for each company against the median R&D spending level for that industry. A similar approach was employed for financial metrics. Approximately 10,000 analyses were required to explore all combinations of timing lags, regions, performance variables, and industries.

About Booz Allen Hamilton

Booz Allen Hamilton has been at the forefront of management consulting for businesses and governments for more than 90 years. Providing consulting services in strategy, operations, organization and change, and information technology, Booz Allen is the one firm that helps clients solve their toughest problems, working by their side to help them achieve their missions. Booz Allen is committed to delivering results that endure.

With 18,000 employees on six continents, the firm generates annual sales that exceed \$3.7 billion. Booz Allen has been recognized as a consultant and an employer of choice.

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2005 Booz Allen Global Innovation 1000: High Leverage Innovators

Company	Headquarters Region	2005 R&D (M)	2005 R&D/Sales
Alliant Techsystems	North America	\$52	1.60%
Apple Computer	North America	\$534	3.80%
Barr Pharmaceuticals	North America	\$128	12.30%
Biomet	North America	\$85	4.20%
Black & Decker	North America	\$134	2.10%
Boston Scientific	North America	\$680	10.80%
C.R. Bard	North America	\$115	6.50%
Caterpillar	North America	\$1,084	3.00%
ConocoPhillips	North America	\$125	0.10%
Dell	North America	\$463	0.80%
Dentsply International	North America	\$47	2.70%
Eaton	North America	\$287	2.60%
eBay	North America	\$328	7.20%
Ecolab	North America	\$68	1.50%
Endo Pharmaceuticals	North America	\$88	10.80%
Energizer	North America	\$70	2.30%
Exxon Mobil	North America	\$712	0.20%
Falconbridge	North America	\$59	0.70%
Fisher Scientific	North America	\$44	0.80%
Forest Laboratories	North America	\$410	14.10%
Google	North America	\$484	7.90%
Illinois Tool Works	North America	\$128	1.00%
International Rectifier	North America	\$105	8.90%
Kellogg	North America	\$181	1.80%
Kronos	North America	\$51	9.80%
Lyondell Chemical	North America	\$91	0.50%
MEMC Electronic Materials	North America	\$51	4.50%
Newmont Mining	North America	\$73	1.70%
PACCAR	North America	\$118	0.80%
Par Pharmaceutical	North America	\$63	14.50%
Parker Hannifin	North America	\$165	2.00%
Petro-Canada	North America	\$224	1.50%
Plantronics	North America	\$63	8.40%
Praxair	North America	\$80	1.00%
Research In Motion	North America	\$158	7.60%
Respironics	North America	\$46	5.00%
Reynolds American	North America	\$53	0.60%
SanDisk	North America	\$195	8.40%
Smith International	North America	\$74	1.30%
St. Jude Medical	North America	\$369	12.70%
Stryker	North America	\$280	5.70%
Suncor Energy	North America	\$46	0.50%
Symantec	North America	\$665	16.00%
The Cooper Companies	North America	\$43	5.30%
Varian Medical Systems	North America	\$82	5.90%
Weatherford	North America	\$107	2.50%
Woodward Governor	North America	\$50	6.00%
Yahoo	North America	\$547	10.40%
Adidas	Europe	\$78	0.90%

Cadbury Schweppes	Europe	\$122	1.00%
Christian Dior	Europe	\$47	0.30%
Meda	Europe	\$49	12.80%
Phonak	Europe	\$49	7.30%
Recordati	Europe	\$56	7.80%
Smith & Nephew	Europe	\$122	4.80%
Synthes	Europe	\$115	5.50%
Trelleborg	Europe	\$64	2.00%
Volvo Group**	Europe	\$1,011	3.10%
Casio Computer	Japan	\$161	3.10%
Daiwa House	Japan	\$55	0.40%
Fujikura	Japan	\$108	2.40%
Ibiden	Japan	\$60	2.10%
Kobe Steel	Japan	\$213	1.40%
Komatsu	Japan	\$444	3.00%
Konica Minolta	Japan	\$593	6.30%
Makita	Japan	\$43	2.10%
Nidec	Japan	\$258	5.40%
NOK	Japan	\$81	2.10%
Sanken Electric	Japan	\$100	6.90%
Shimadzu	Japan	\$71	3.30%
Sumitomo Electronics Industries	Japan	\$569	3.20%
Sysmex	Japan	\$72	9.30%
Tokyo Ohka Kogyo	Japan	\$50	5.80%
Toyota Motor**	Japan	\$7,178	3.90%
Asustek Computer	Rest of World	\$189	1.70%
AU Optronics	Rest of World	\$152	2.20%
Chi Mei Optoelectronics	Rest of World	\$134	2.70%
Cia Vale Do Rio Doce	Rest of World	\$276	2.00%
Coretronic	Rest of World	\$43	2.30%
High Tech Computer	Rest of World	\$75	3.30%
Hon Hai Precision Industry	Rest of World	\$272	1.00%
Hyundai Motor**	Rest of World	\$1,405	2.40%
Korea Circuit	Rest of World	\$73	14.60%
Lite-On Technology	Rest of World	\$115	1.60%
Mediatek	Rest of World	\$225	13.70%
NCsoft	Rest of World	\$44	13.40%
Petrobras	Rest of World	\$384	0.70%
POSCO	Rest of World	\$220	0.90%
Powerchip Semiconductor	Rest of World	\$55	3.40%
Samsung Electronics	Rest of World	\$5,428	6.90%
Taiwan Semiconductor Manufacturing	Rest of World	\$437	5.30%
Tata Motors**	Rest of World	\$108	2.00%
Techtronic Industries	Rest of World	\$63	2.20%
Teva Pharmaceutical Industries	Rest of World	\$369	7.00%