Proven paths to innovation success

The 2014 Global Innovation 1000
For the past 10 years, Strategy& has analyzed R&D investment at the 1,000 biggest-spending public companies in the world, and explored various innovation-related topics based on in depth interviews and surveys with innovation leaders. This year, we took a look at the last decade of innovation and what lies ahead in the next.
R&D spending has reached an all-time high in 2014. With the exception of the year of the Great Recession, overall spending growth has never been lower. China and the software and Internet industry, however, continue to significantly increase their spending.

- R&D spending by the Global Innovation 1000 companies in 2014 reached a record US$647 billion—this represents about 40 percent of total innovation spending by all public, private and not-for-profit organizations worldwide—but growth in spending slowed to just 1.4%.

- The computing and electronics industry and the healthcare industry together represent 47 percent of all R&D spending in 2014, yet both industries actually reduced their spending this year, by 1.8 percent and 1.2 percent respectively.

- The software and Internet industry was one of four industries to increase its R&D spending in 2014, and it did so by 16.5 percent, the greatest increase of any sector.

- Companies headquartered in North America, Europe, and Japan continued to dominate R&D spending, but with smaller shares of the global spend than they had 10 years ago.

- Over the past decade, China’s share of R&D spending has grown by a factor of 15 while the number of China-based companies among the Global Innovation 1000 jumped from just eight to 114.

The companies that executives identified as the 10 Most Innovative companies in 2014 were not typically those that spent the most on R&D.

- Apple and Google remain at the top of the 10 Most Innovative companies list this year; Amazon continued its rise up the rankings, edging Samsung out of third place.

- The 10 Most Innovative companies outperformed the Top 10 R&D Spenders on growth in market capitalization, revenue growth, and profitability.

- Only Microsoft has been among the 10 Most Innovative companies and Top 10 R&D Spenders in each of the past five years.

Companies overall believe they are getting better at innovation, with Need Seekers reporting the best innovation performance. However, there remains room for improvement for all.

- More than three-quarters of innovation leaders (76 percent) say that they are better at innovation today than they were 10 years ago. However, only 41 percent say their companies are highly proficient in the innovation areas that they have tried to improve in the past.

- A full 86 percent of Need Seekers report being better at innovation today than they were 10 years ago, whereas only 73 percent of each Market Readers and Technology Drivers state the same. Need Seekers also more often report that they outperform their peers financially.

- According to survey respondents, the most important element to success will be aligning business and innovation strategies over the next decade.
Global spending still rising, but pace has slowed

R&D spending by the Global Innovation 1000 has reached its highest level ever, but spending growth is at a new post-recession low.

- R&D spending has increased in nine out of the last 10 years, reaching an all-time high of $647 billion in 2014.
- Growth in R&D spending by the Global Innovation 1000 slowed sharply to 1.4 percent, the second-lowest rate ever in the study’s history. But R&D intensity – the ratio of R&D spending to revenue – remains close to the 10-year average of 3.7 percent.

“Our study has consistently shown that there is no statistically significant relationship between financial performance and R&D spending. With R&D intensity remaining relatively constant, the slowdown in R&D spending growth may be an indication that companies have realized that spending more doesn’t always yield better results. Improving how they spend delivers greater impact.”

Barry Jaruzelski, Senior Partner

Global Innovation 1000 R&D Spending US$ billions

Note: Historical data referenced in the 2014 and future studies will not always align with previously published figures for the 2005 through 2012 studies because of a methodology change implemented in 2013 that was applied to prior year data in 2014.

For more information, see methodology on p.14.

Sources: Bloomberg data; Capital IQ data; Strategy& analysis
Smaller industries show bigger growth in spending

The computing and electronics and healthcare industries have spent the most on R&D over the past 10 years.

- The computing and electronics and healthcare industries have contributed 50 percent of total R&D spending over the past decade and have also spent the most on R&D in each of those years in absolute dollars.
- In 2014, both the computing and electronics and healthcare industries reduced their spending for the first time since 2010, a decline of 1.8 percent and 1.2 percent, respectively.

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Just four industry sectors drove R&D spending growth in 2014: software and Internet, chemicals and energy, industrials, and auto — more than making up for the declines in the five other industries examined. 
Barry Jaruzelski, Senior Partner
Smaller industries show bigger growth in spending continued

The software and Internet industry has increased its spending at one of the fastest rates.

- The software and Internet industry has had the greatest growth in R&D spending over the past 10 years, 11.7 percent. This year, only software and Internet (16.5 percent), chemicals and energy (4.2 percent), industrials (4.1 percent), and auto (2.1 percent) saw growth increases.

- In 2014, R&D intensity was highest in the software and Internet industry (13.4 percent), followed by healthcare (11.2 percent) and computing and electronics (6.7 percent).

Percentage Change in R&D Spending by Industry 2013-14

Sources: Bloomberg data; Capital IQ data; Strategy& analysis
Firms headquartered in North America, Europe, and Japan continue to lead R&D spending, but China vastly outpaces all other regions in spending growth.

- North America, Europe, and Japan have together spent the most on R&D in each of the past 10 years, but their growth in spending has steadily slowed.

- In 2014, North America increased its spending by 3 percent and Europe by just 2 percent; Japan actually decreased its spending for the second year in a row (down 3 percent in 2013 and 14 percent in 2014.)

“China is fertile ground for innovation. With its supportive business culture, market demand for solutions addressing the needs of its varying demographics, and expanding middle and upper class, R&D spending in the region will continue to grow — solidifying its place on the global competitive stage.”
Volker Staack, Partner

R&D Spending by Region

Sources: Bloomberg data; Capital IQ data; Strategy& analysis
China escalates race to innovate
continued

Historically, China has spent the least on R&D relative to other regions, but companies there have consistently increased their level and pace of investment. Over the past 10 years, Chinese companies’ share of total R&D spending has grown by a factor of 15. The number of Chinese companies represented among the Global Innovation 1000 jumped from just eight to 114 in the same time period. And in the past year alone, innovation spending in China increased 46 percent.

Percentage Change in Share of Total Number of Global Innovation 1000 Companies, R&D Spending, and Revenue by Region 2005-14

Sources: Bloomberg data; Capital IQ data; Strategy& analysis
The majority of companies we surveyed (76 percent) report being better at innovating today than 10 years ago.

- Many companies have streamlined their R&D portfolios and created more efficient innovation processes over the years.
- More than three-quarters (78 percent) believe they have developed a more detailed understanding of their customers’ wants and needs.
- Need Seekers report substantially higher improvement over the past decade than companies in other innovation models (86 percent of Need Seekers versus 73 percent of both Market Readers and Technology Drivers).

Although being a Need Seeker has been a successful innovation model for many companies, it is not necessarily the best strategy for all. Amazon, Samsung and Google — each one of the Most Innovative companies — all follow different innovation models. Since their respective models are well aligned with their strategy, each has achieved tremendous success.

Barry Jaruzelski, Senior Partner

Source: Strategy& 2014 Global Innovation 1000 survey data and analysis
Companies following the Need Seeker model stand out in a number of ways in terms of how they have improved their innovation performance over time:
- 85 percent of Need Seeker companies say they have highly aligned business and innovation strategies, compared with just 55 percent of Market Readers and 61 percent of Technology Drivers.
- Need Seekers more often report that they outperform their peers financially (58 percent of Need Seekers say that, versus 45 percent of Market Readers and 40 percent of Technology Drivers).
- A higher share of Need Seekers (39 percent) say they have developed a much more detailed understanding of customer wants and needs over time; just 26 percent of Market Readers and 21 percent of Technology Drivers say so.

Our study classifies companies into one of three innovation models based on behaviors:

- **Need Seekers**: Companies that are Need Seekers tend to engage consumers directly to generate new ideas, and then develop original products and services addressing unarticulated needs and get them to market first.

- **Market Readers**: Companies defined as Market Readers are fast followers. They typically generate ideas by closely monitoring their markets, customers, and competitors, focusing largely on creating value through incremental innovations to current products.

- **Technology Drivers**: Companies that are Technology Drivers depend heavily on their internal technological expertise to develop new products and services, driving both breakthrough innovation and incremental change to meet the needs of their customers via new technology.
Despite their differences, companies operating under all innovation models believe there is room for improvement over the next 10 years.

- Only 41 percent say they are highly proficient in the innovation areas that they have tried to improve in the past, and just 27 percent believe they are mastering the elements they will need for innovation success over the next 10 years.

- Companies say they'll direct more spending to services R&D. Today most innovation spending (52 percent) goes to products. In 10 years, R&D for services will take up 62 percent of innovation spending.

- Innovation leaders say that 58 percent of R&D spending today focuses on incremental or renewal innovations, i.e., those relating to current products, 28 percent on new innovations and only 14 percent on breakthrough innovations. Ten years from now, they expect the share for incremental innovations to drop to 43 percent while shares for new and breakthrough innovations climb to 35 percent and 22 percent, respectively.

- Aligning business and innovation strategies is the top priority amongst all innovation models (20 percent). Building innovation capabilities (18 percent) and cultural alignment with innovation strategy (14 percent) are the next.

**Priorities over the past 10 Years and next 10 Years for each Model 2014**

Source: Strategy& 2014 Global Innovation 1000 survey data and analysis
**Even in innovation, less can be more**

The 10 Most Innovative companies were not typically the Top 10 R&D Spenders.

- Once again, Apple and Google are at the top of the 10 Most Innovative companies list. Amazon continued its rise up the rankings, edging Samsung out of third place; Tesla jumped from 9th place in 2013 to 5th in 2014.

- Volkswagen and Samsung remain the Top R&D Spenders in 2014. Intel and Microsoft increased their spending to become the 3rd and 4th highest spenders, respectively. Google replaced Pfizer in the Top 10 R&D Spenders list.

- Four of the Top 10 R&D Spenders in 2014 were healthcare companies, but as in prior years, no healthcare companies were among the 10 Most Innovative.

- Out of the companies that have been among the 10 Most Innovative companies and the Top 10 R&D Spenders in the past five years, only Microsoft has been on both lists every year.

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The 10 Most Innovative Companies 2014

<table>
<thead>
<tr>
<th>Company</th>
<th>Industry</th>
<th>2014 R&amp;D Spending (US$ billion)</th>
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<tbody>
<tr>
<td>Apple</td>
<td>Computing and electronics</td>
<td>4.5</td>
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<tr>
<td>Google</td>
<td>Software and Internet</td>
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<td>Amazon</td>
<td>Software and Internet</td>
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<td>Samsung</td>
<td>Computing and electronics</td>
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<td>Tesla</td>
<td>Auto</td>
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<td>3M</td>
<td>Industrials</td>
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<tr>
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<td>Procter &amp; Gamble</td>
<td>Consumer</td>
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Increase or decrease within top 10 ranking compared to 2013

The Top 10 R&D Spenders 2014

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<td>Roche</td>
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<td>Toyota</td>
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<td>Merck &amp; Co</td>
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Source: Bloomberg data; Capital IQ data; Strategy& 2014 Global Innovation 1000 survey data and analysis
It’s not how much you spend but how you spend it

- Once again, the 10 Most Innovative companies markedly outperformed the Top 10 R&D Spenders on market capitalization and profitability.

- Indexed revenue growth is somewhat higher for the 10 Most Innovative companies.

For the 10th year, our research demonstrates that there’s no correlation between how much you spend on innovation and how well you perform. You can’t just buy your way to the top.

Barry Jaruzelski, Senior Partner

Performance of 10 Most Innovative Companies* vs. Top 10 R&D Spenders, 2014

*Only 9 of the 10 Most Innovative companies were included in this analysis. Tesla was removed as it does not have Market Capitalization data spanning back 5 years.

Sources: Bloomberg data; Capital IQ data; Strategy& 2014 Global Innovation 1000 survey data and analysis
As we have in each of the past nine editions of the Global Innovation 1000, this year Strategy& identified the 1,000 public companies around the world that spent the most on R&D during the last fiscal year, as of June 30, 2014. To be included, companies had to make their R&D spending numbers public. Subsidiaries that were more than 50 percent owned by a single corporate parent during the period were excluded if their financial results were included in the parent company’s financials. The Global Innovation 1000 companies collectively account for 40 percent of the entire world’s R&D spending, whereas the next 1,000 largest corporate spenders represent 3 percent.

In 2013, Strategy& made some adjustments to the data collection process in order to gain a more accurate and complete picture of innovation spending. In prior years, both capitalized and amortized R&D expenditures were excluded. Starting in 2013, we included the most recent fiscal year’s amortization of capitalized R&D expenditures in calculating the total R&D investment, while continuing to exclude any non-amortized capitalized costs. We have now applied this methodology to all 10 years of our data, so historical data referenced in the 2014 and future studies will not always align with previously published figures for the 2005 through 2012 studies.

For each of the top 1,000 companies, we obtained from Bloomberg and Capital IQ the key financial metrics for 2009 through 2014, including sales, gross profit, operating profit, net profit, historical R&D expenditures, and market capitalization. All sales and R&D expenditure figures in foreign currencies were translated into U.S. dollars according to an average of the exchange rate over the relevant period; for data on share prices, we used the exchange rate on the last day of the period.

All companies were coded into one of nine industry sectors (or “other”) according to Bloomberg’s industry designations, and into one of five regional designations, as determined by their reported headquarters locations. To enable meaningful comparisons across industries, the R&D spending levels and financial performance metrics of each company were indexed against the average values in its own industry.

To understand how innovation has changed at companies over the past 10 years and what to expect for the next decade, Strategy& conducted an online survey of 505 innovation leaders at 467 companies around the world. The companies participating represented just under US$130 billion in R&D spending, or 20 percent of this year’s total Global Innovation 1000 R&D spending, all nine of the industry sectors, and all five geographic regions.
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Barry Jaruzelski is a senior partner with Strategy& in Florham Park, NJ, and the global leader of the firm’s engineered products and services practice. He created the Global Innovation 1000 study in 2005, and continues to lead the research. He works with high-tech and industrial clients on corporate and product strategy and the transformation of core innovation processes.

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