BCG

REPORT

Innovation 2007

A BCG Senior Management Survey

THE BOSTON CONSULTING GROUP

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Contents

Note to the Reader

The Boston Consulting Group, in partnership with *BusinessWeek,* recently completed its fourth annual global survey of senior executives on innovation and the innovation-to-cash process—the interrelated activities involved in turning ideas into financial returns. The process goes well beyond ideation and new-product development to include such issues as portfolio management, life cycle management, and organizational alignment.

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For additional information on BCG's thinking on innovation, please visit the Web site of the BCG Innovation Institute (http://innovation.bcg.com), send an e-mail to innovation@bcg.com, or contact one of the following leaders of the firm's innovation activities:

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Executive Summary

Innovation is a key differentiator—perhaps *the* key differentiator—in the marketplace, separating winning companies from the also-rans. It takes a wide array of forms, from new-service and product development to the reinvention of business processes and the launch of entirely new business models. It is the subject of endless discussion among executives—How can we make our company more innovative?—and the target of ever-increasing amounts of corporate spending. And it is destined to become even more important as competitive pressures rise across virtually all industries.

Our latest annual survey on the topic, to which 2,468 senior executives representing 58 countries and all major industries responded, sheds new light on how companies are pursuing innovation—how they're going about it, what they're emphasizing, and what's working and what isn't. Among its key findings:

- Innovation remains a top strategic focus for the majority of companies, with 66 percent of respondents to our survey ranking it one of their top-three strategic priorities.
- Consistent with that finding, 67 percent of respondents said their companies will increase spending on innovation in 2007.
- Simultaneously, many executives—over half of those we surveyed—remain unsatisfied with the financial returns on their company's investments in innovation.
- A risk-averse corporate culture, lengthy product-development times, and a lack of internal coordination are the three biggest stumbling blocks facing companies seeking to improve their return on innovation.
- Respondents ranked Apple, Google, Toyota Motor, General Electric, and Microsoft, in that order, as the world's five most innovative companies.

The Outlook for 2007

Greater Investment—and the Pursuit of Higher Returns

The results of our latest annual survey confirm that innovation remains a highly valued and sought-after capability. The majority of responding companies consider it important—even critical—to their business, and they're spending larger and larger sums on it. Yet many remain frustrated with the return on that investment. They feel they should be getting more: more (and better) new products and services, stronger internal processes, improved customer experiences, and more effective business models. Yet often these benefits remain elusive. This state of affairs isn't new; it's been a constant refrain since we launched our first survey on innovation back in 2004.

Below we look at the current state of play in corporate innovation as seen through the eyes of the nearly 2,500 executives who completed our survey. We begin with a snapshot of spending plans.

Companies Are Spending More…

Companies remain firm believers in investing in innovation. Just over two out of three respondents said that their company will increase year-over-year spending in 2007; nearly one in three expected spending to increase significantly (that is, by more than 10 percent). (See Exhibit 1, page 8.) These intentions reflect the importance companies continue to attach to innovation. Sixty-six percent of executives consider innovation among their top-three strategic priorities, including 23 percent who say it is their most important priority. (See Exhibit 2, page 8.) Although the number of respondents for whom innovation is at least a top three priority is down somewhat from 2006—last year, 72 percent of survey respondents said that innovation was a top three priority and 40 percent said it was their number-one priority—it's clear that innovation remains very much on executives' minds and that investment in innovation is unlikely to wane materially anytime soon.

Broken down by region, Asian and European companies had the most ambitious spending plans, with 76 percent and 74 percent, respectively, anticipating increases, compared with 64 percent for their North American counterparts. Automotive and motor vehicle companies led the way, with 76 percent expecting to raise spending on innovation, followed by entertainment and media (73 percent) and energy (71 percent). Companies in pharmaceuticals, biotechnology, and health care, and in the industrial and manufacturing sector were tied at 70 percent. (See Exhibit 3, page 9.)

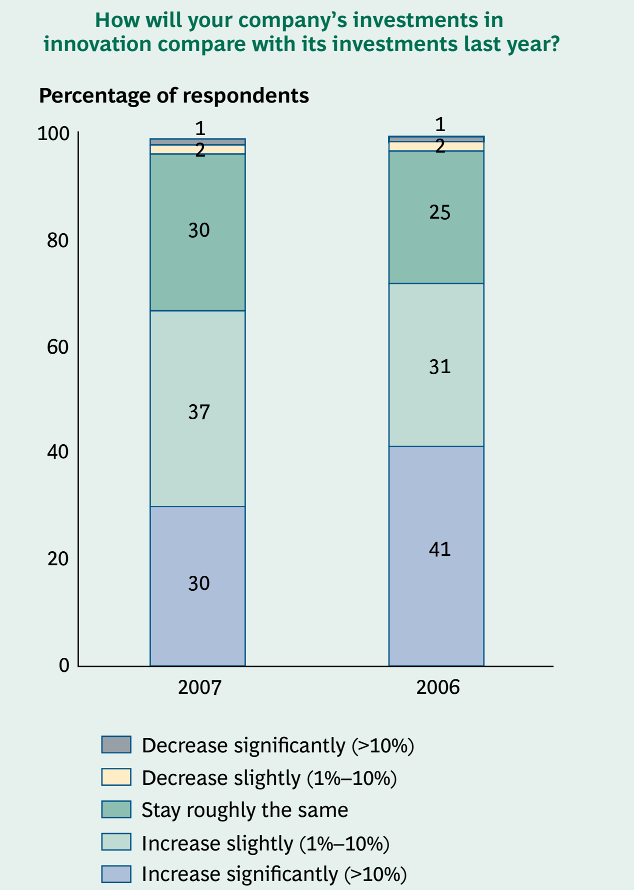
As it turns out, becoming more innovative pays financial dividends because there is a direct relationship between success at innovation and long-term stock-market performance. We compared the total shareholder returns of the most innovative companies (as identified by survey respondents) with those of their industry peers over a five-year span. The results were impressive. (See Exhibit 4, page 10.) Globally, innovators outperformed their peers by nearly 400 basis points per year. Innovators outperformed their peers along regional lines as well, albeit to varying degrees.

…Yet Dissatisfaction Remains

Companies gauge their performance at innovation using a variety of yardsticks. (See our companion report, *Measuring Innovation 2007,* for a detailed look at metrics and measurement practices.) Per our respondents, the most commonly used metrics are customer satisfaction (identified by 57 percent of respondents), overall revenue growth (51 percent), and the percentage of total company sales from new products or services (also 51 percent). Surprisingly, among the least popular are time to market (which is ironic, given companies' professed worries about speed) and return on the investment in innovation (in our opinion, perhaps the single most important metric). (See Exhibit 5, page 10.)

Regardless of how performance in innovation is measured, one thing is certain: the majority of companies are decidedly unhappy with the payback on their spending. Indeed, only 46 percent of respon-

Exhibit 1. The Majority of Companies Are Increasing Their Innovation Spending



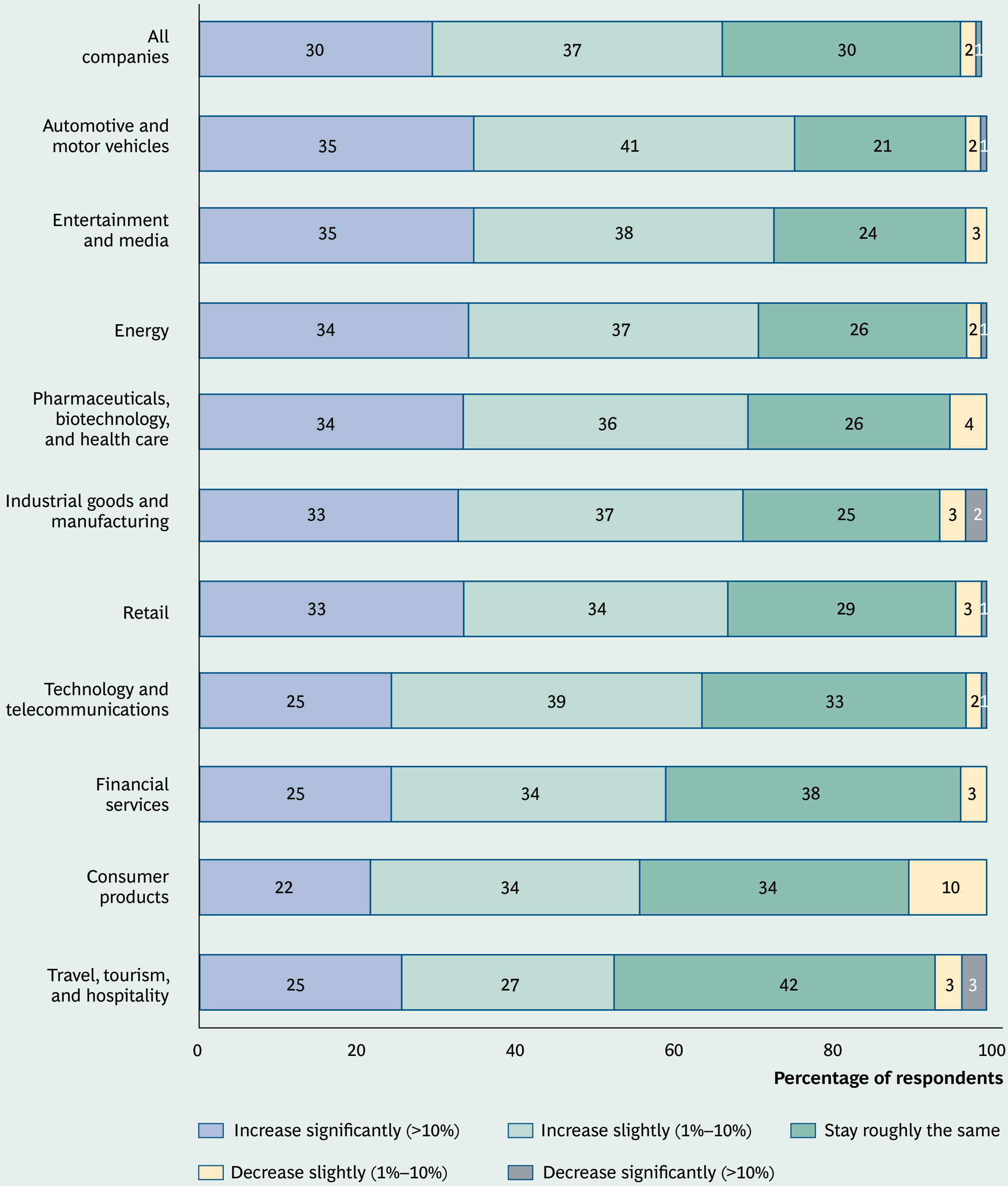
Sources: BCG 2007 Senior Executive Innovation Survey; BCG 2006 Senior Executive Innovation Survey.

Exhibit 2. Innovation Remains a High Strategic Priority

Sources: BCG 2007 Senior Executive Innovation Survey; BCG 2006 Senior Executive Innovation Survey.

Exhibit 3. Automotive, Entertainment and Media, and Energy Companies Have the Most Aggressive Spending Plans

How will your company's investments in innovation compare with its investments last year?



Source: BCG 2007 Senior Executive Innovation Survey.

dents said they were satisfied with the return on their company's investments in innovation. (See Exhibit 6.) And only half considered their company's innovation capabilities—the people, processes, and resources necessary to turn ideas into cash—to be superior to those of their competitors, down slightly from 2006.

When asked what they thought was preventing their companies from achieving higher returns, executives most commonly cited a risk-averse corporate culture (identified by 38 percent of respondents), as well as overly lengthy development times (36 percent), a lack of coordination within the company (34 percent), and difficulty choosing the right ideas to commercialize (33 percent). (See Exhibit 7.)

Satisfaction with the return on investment varied relatively little by industry. The most satisfied respondents were from technology and telecommunications enterprises (51 percent) and travel, tour-

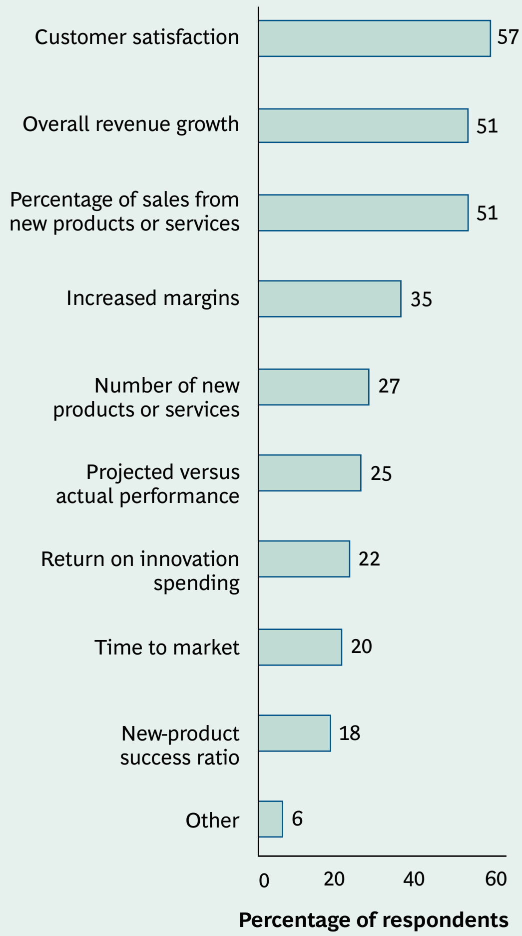
Exhibit 4. Innovative Companies Demonstrate Superior Stock-Market Performance

Five-year annualized total-shareholder-return premium of innovative companies compared with their industry peers

Sources: BCG 2007 Senior Executive Innovation Survey; BCG ValueScience Center analysis.
Note: Returns were annualized for December 31, 2001, to December 29, 2006, and account for price appreciation and dividends. To generate the comparison data, we compared the TSR of each innovative company, as identified by survey respondents, with the TSR of its industry overall and averaged the differences globally and by region.

Exhibit 5. Customer Satisfaction, Revenue Growth, and Sales from New Offerings Are the Most Commonly Used Metrics

How does your company measure its success at innovation?



Source: BCG 2007 Senior Executive Innovation Survey.

ism, and hospitality companies (also 51 percent); least satisfied were executives at financial services companies (only 41 percent expressed satisfaction) and at retail businesses (43 percent).

There was, however, a material difference in the degree of satisfaction, by level, within the organization. Those at the very top of the ladder—CEOs, chairmen, and presidents—were the most content with their company's return on innovation spending, with CEOs proving the biggest optimists. (See Exhibit 8, page 12.) Given the CEO's prominent role in many companies' efforts at innovation—CEOs were identified, by a wide margin, as the biggest internal force driving innovation—perhaps this isn't surprising. (See Exhibit 9, page 13.) Indeed, having a strongly positive CEO is probably a necessity.

But satisfaction was noticeably lower at other levels of the organization, with CFOs and COOs, in particular, worried about the return on investments in innovation. This striking difference in opinion

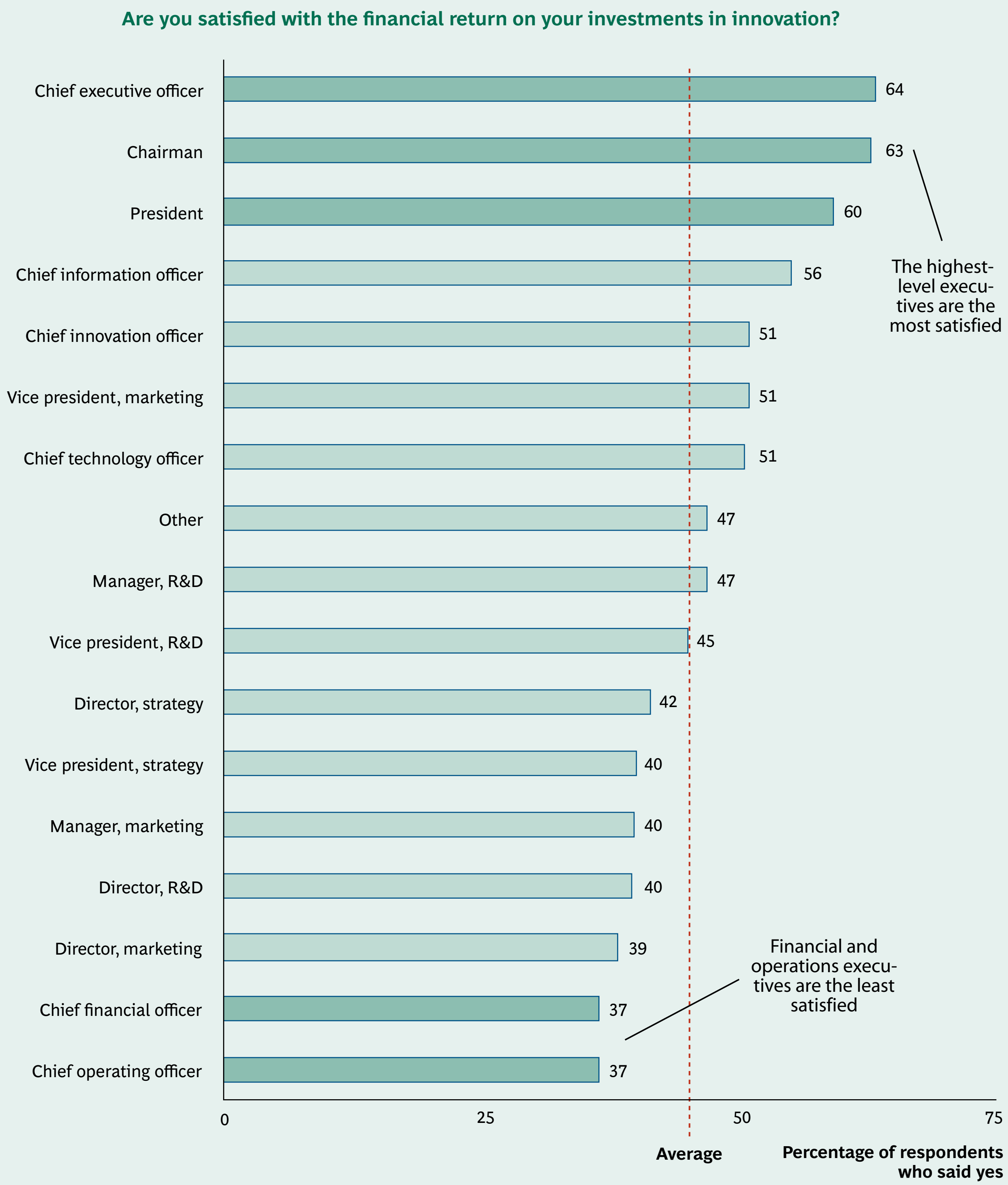
Exhibit 6. Less Than Half of Respondents Are Satisfied with Their Returns on Innovation Spending

Sources: BCG 2007 Senior Executive Innovation Survey; BCG 2006 Senior Executive Innovation Survey.
Note: The "not sure" option was not offered in 2006.

Exhibit 7. A Risk-Averse Culture and Lengthy Development Times Are the Most Common Obstacles

Source: BCG 2007 Senior Executive Innovation Survey.

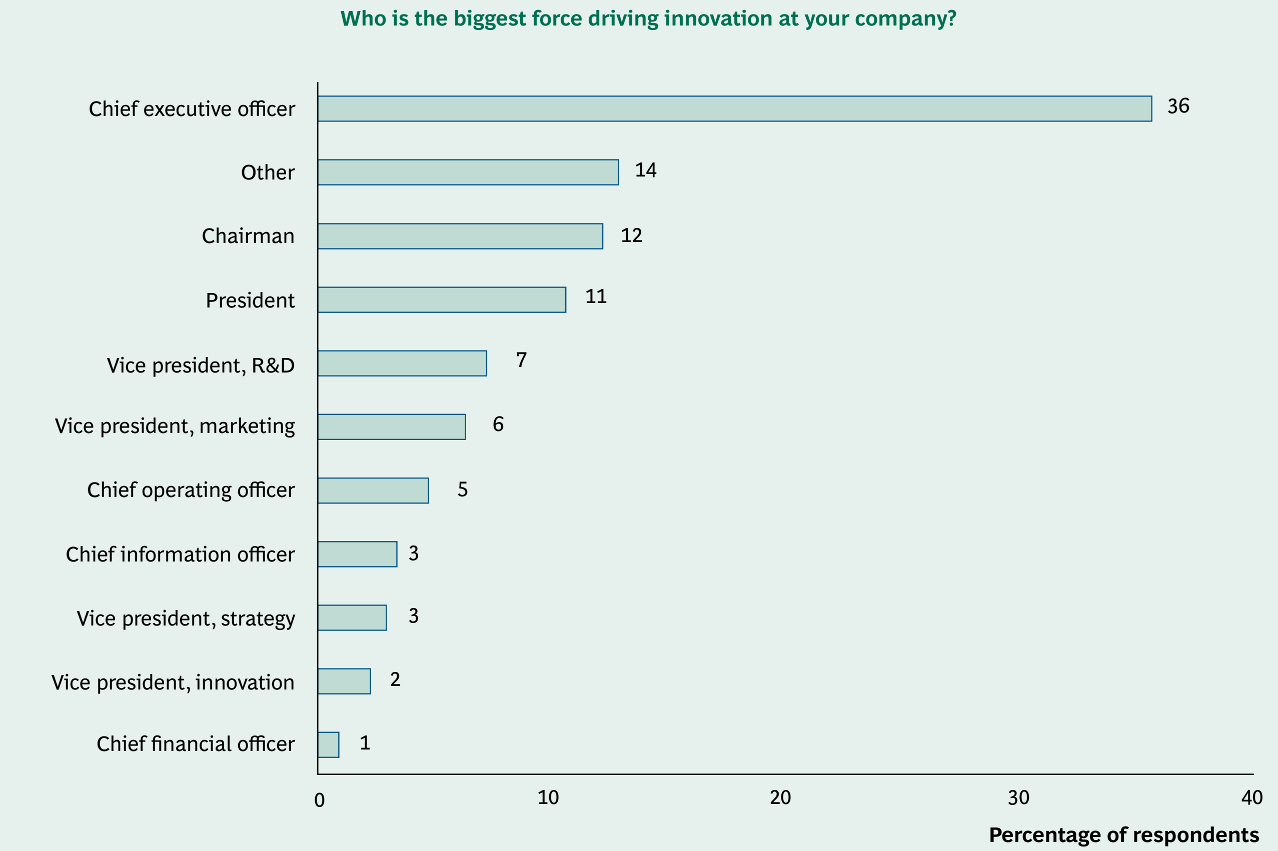
Exhibit 8. Satisfaction with Innovation Payback Is Greatest Among Top-Level Executives



Source: BCG 2007 Senior Executive Innovation Survey.

between the very top ranks of management and other executives is something we've seen in each of our surveys since 2004. Whether it is a major cause for concern is unclear at this point. At a minimum it does prompt such questions as, Do those at the top of the organization believe they're seeing something other than what's really going on? Or are they in touch but unable to "sell" their vision to the rest of the company? Conversely, are those who are more immersed in the day-to-day details of implementation unable to step back and see the big picture?

Exhibit 9. The CEO Is the Biggest Driver of Innovation



Source: BCG 2007 Senior Executive Innovation Survey.

Pursuing Innovation

Goals and Tactics

Innovation comes in many shapes and sizes. Sometimes it consists of small tweaks to existing offerings; far less often, but more spectacularly, it's a new, category-defining product or "killer app." Most often it falls somewhere in the middle. What kind (or degree) of innovation do companies consider most vital to their business?

Our respondents considered all five of the following types of innovation to be important: "new to the world" products and services that create entirely new markets, new offerings that allow expansion to new groups of customers, new offerings for existing customers, minor changes to existing offerings, and cost reductions in existing offerings. However, the hands-down winner was new offerings for existing customers (92 percent), followed by new offerings that allow expansion to new customers (85 percent). (See Exhibit 10.)

Interestingly, although all executives no doubt dream of hitting the proverbial home run by launching a new-to-the-world product, respondents deemed that type of innovation only slightly more critical than finding new ways to cut costs. (This finding probably reflects a pragmatic risk-reward calculation, given the general perception that cost reductions are much easier to achieve than most new-to-the-world innovations.)

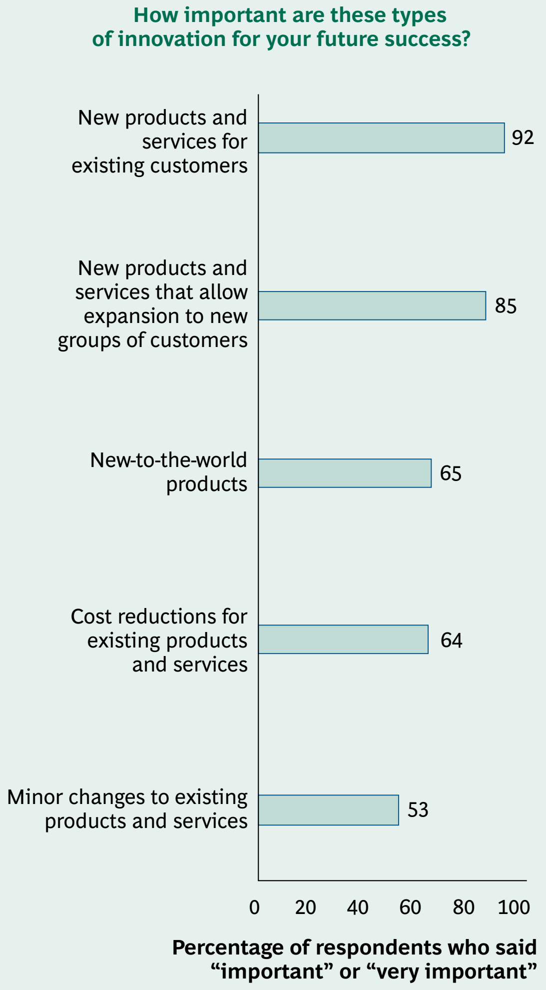
How are companies pursuing their innovation objectives? A popular tack remains investment in rapidly developing economies (RDEs). Indeed, 38 percent of respondents said that their company would increase its innovation spending in RDEs in 2007. (See Exhibit 11.) Leading the way by industry were automotive and motor vehicle companies (63 percent of respondents said they planned to increase their RDE investments), technology and telecommunications companies (56 percent), and industrial and manufacturing businesses (50 percent).

Not surprisingly, China and India were identified as the primary targets of RDE investment, with China edging out India as the most popular. (See Exhibit 12, page 16.) Product development was the objective most often cited for investing in both countries, and in RDEs generally, consistent with last year's results. Product testing was second. Noteworthy is the fact that, by and large, companies remain reluctant to move the early-stage components of innovation—idea generation, product design, and basic research—to RDEs, preferring to keep those functions closer to home.

Although RDEs are still very much on companies' radar screens (for all the obvious reasons, with low labor costs and an enhanced ability to develop products for local markets foremost among them), it's interesting to speculate on why the collective investment in these countries isn't even higher. Undoubtedly some companies are cautious about pushing their RDE weighting too high given the potential geopolitical risk. Others are coming to realize that getting it right—that is, fully capitalizing on the advantages that these countries offer—is difficult and takes considerably more time and effort than they had expected. And other companies may simply be where they want to be in terms of their RDE investments and are content to stay there.

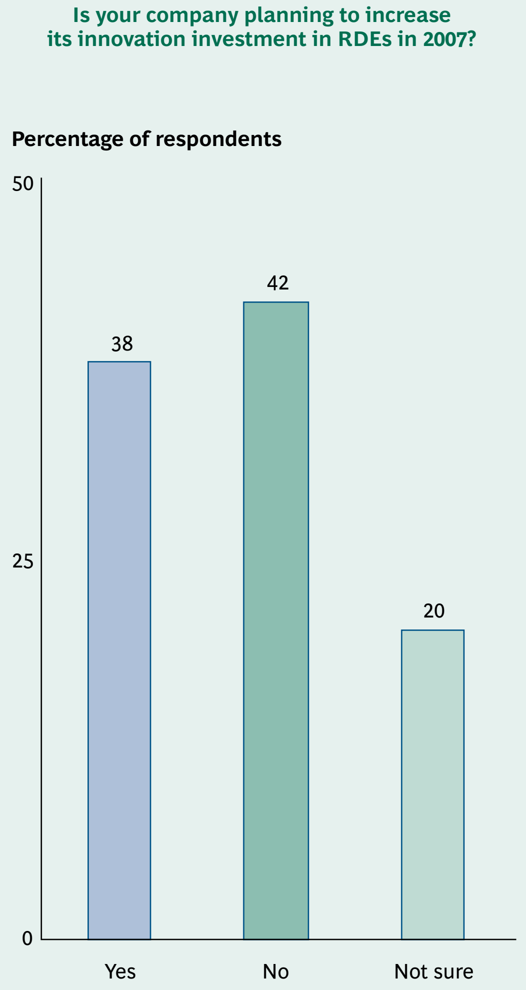
Regardless, it's worth noting that one thing we haven't seen in our survey results and conversations with executives is any indication of a retreat from these countries. That suggests that the overall trend toward greater investment in RDEs remains intact despite the absence to date of a massive, large-scale ramping up.

Exhibit 10. New Offerings for Existing Customers Are Considered the Most Critical Type of Innovation



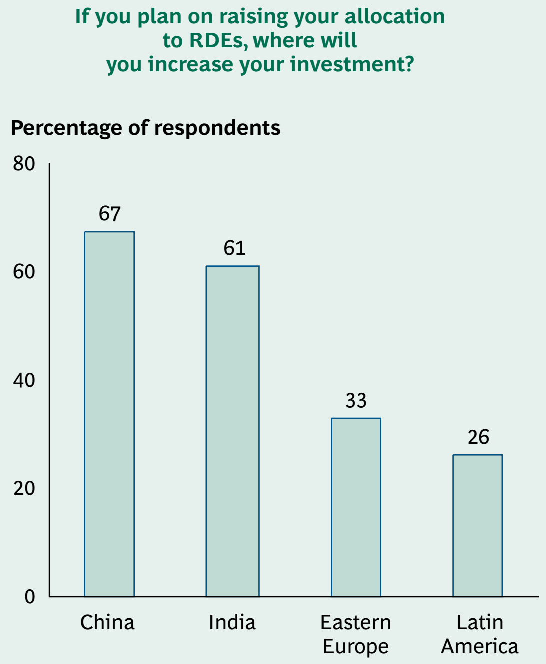
Source: BCG 2007 Senior Executive Innovation Survey.

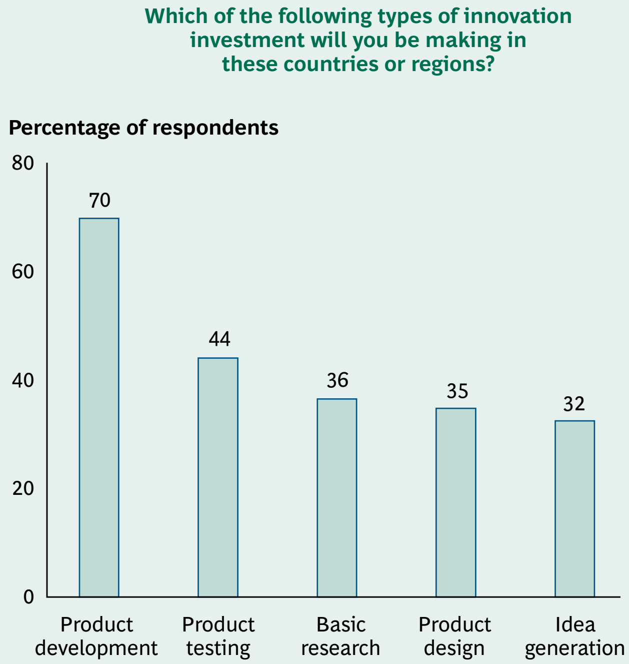
Exhibit 11. Investment in RDEs Is a Key Part of Many Companies' Innovation Strategy



Source: BCG 2007 Senior Executive Innovation Survey.

Exhibit 12. China Is the Most Popular Target for RDE Investment, with Product Development Being the Primary Objective





Source: BCG 2007 Senior Executive Innovation Survey.

Execution

What's Working, What's Not

Innovation draws on a wide range of capabilities. We asked respondents to gauge their organization's performance on each of twelve of them; the results confirmed some trends we'd seen earlier and also offered some surprises.

Strengths: Customer Knowledge and Executive Sponsorship

In a replay of 2006, a large majority of respondents (nearly 70 percent) identified two capabilities—developing a deep understanding of customers and ensuring executive-level sponsorship of projects—as areas in which they considered their company either above average or excellent. (See Exhibit 13, page 18.) Fifty-eight percent believed their company very capable of providing support to innovation project teams; 57 percent felt that their company was proficient at partnering with suppliers and others for new ideas.

In addition, 57 percent of respondents said that their company was above average or excellent at fostering a culture that supports innovation. This is noteworthy, given that a risk-averse culture was cited as the single largest impediment to maximizing the return on investments in innovation.

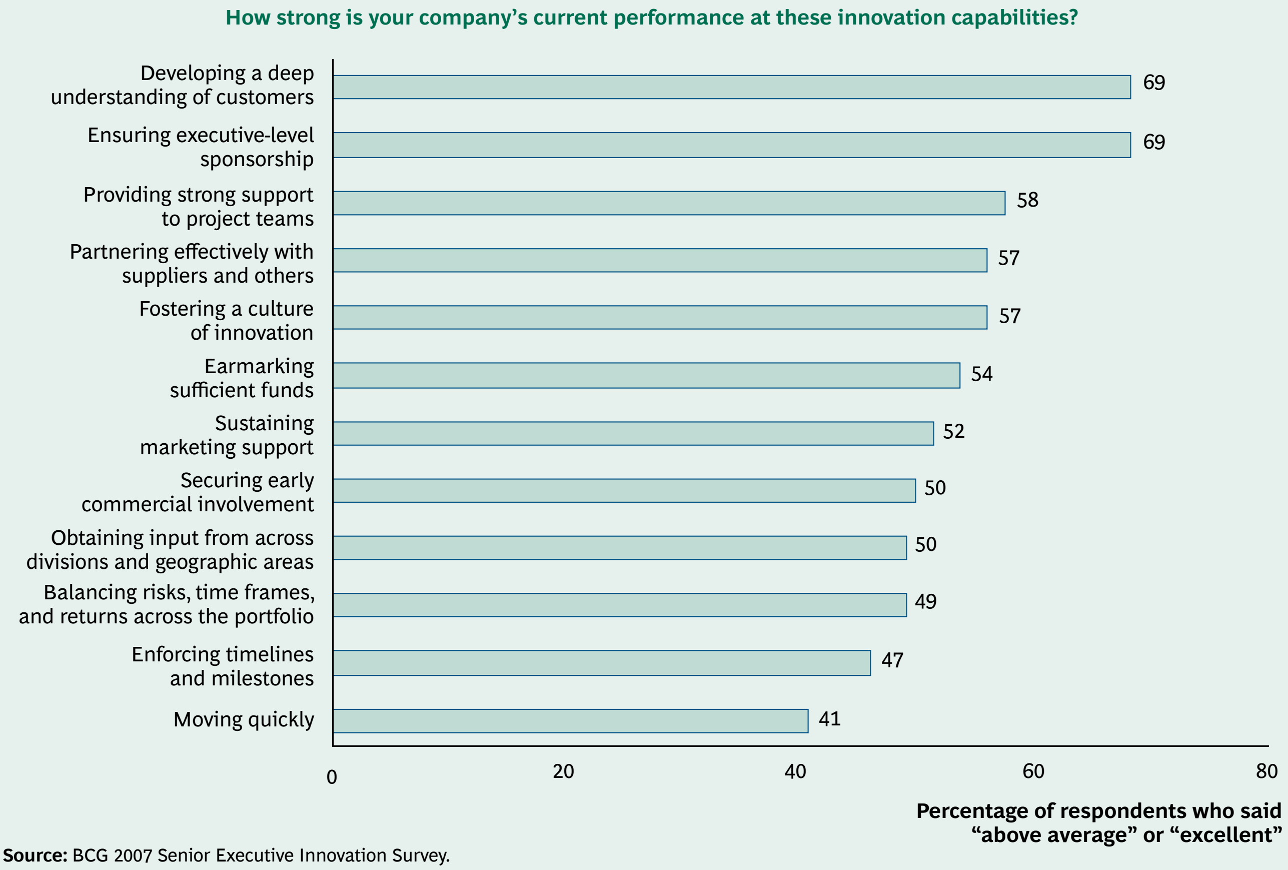
Respondents were also largely positive when asked to gauge their company's ability to drive different types of innovation. (See Exhibit 14, page 18.) Almost three out of four respondents considered their company above average or excellent at product or service innovation. Sixty-four percent deemed their organization strong at innovation related to the customer experience, whereas 63 percent declared process innovation a strong suit.

It is encouraging that companies consider themselves strong on so many fronts. A question arises though: If so many believe they're this good, what's the problem?

Weaknesses: Speed, Discipline, and Balance

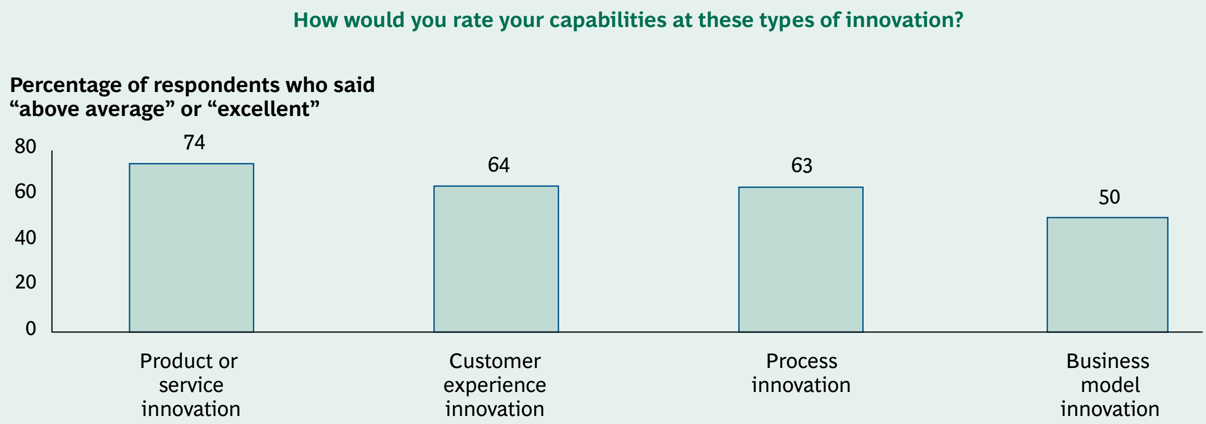
Respondents did identify some weaknesses. (See Exhibit 15, page 19.) Foremost among them was speed—the time it takes to move from idea generation to initial sales. Fifty-four percent of respondents said they believed their organization was below average or poor at moving quickly enough. Speed was a particular concern for industrial and manufacturing companies (65 percent of respondents considered themselves weak), energy companies (64 percent), and makers of consumer products (61 percent). Many respondents also believed their company was behind where it needed to be in enforcing project timelines and milestones, obtaining input from across divisions and geographic areas, and balancing risks,

Exhibit 13. Customer Knowledge and Executive Support Are the Most Commonly Identified Strengths



Source: BCG 2007 Senior Executive Innovation Survey.

Exhibit 14. Most Companies Consider Themselves Best at Product or Service Innovation



Source: BCG 2007 Senior Executive Innovation Survey.

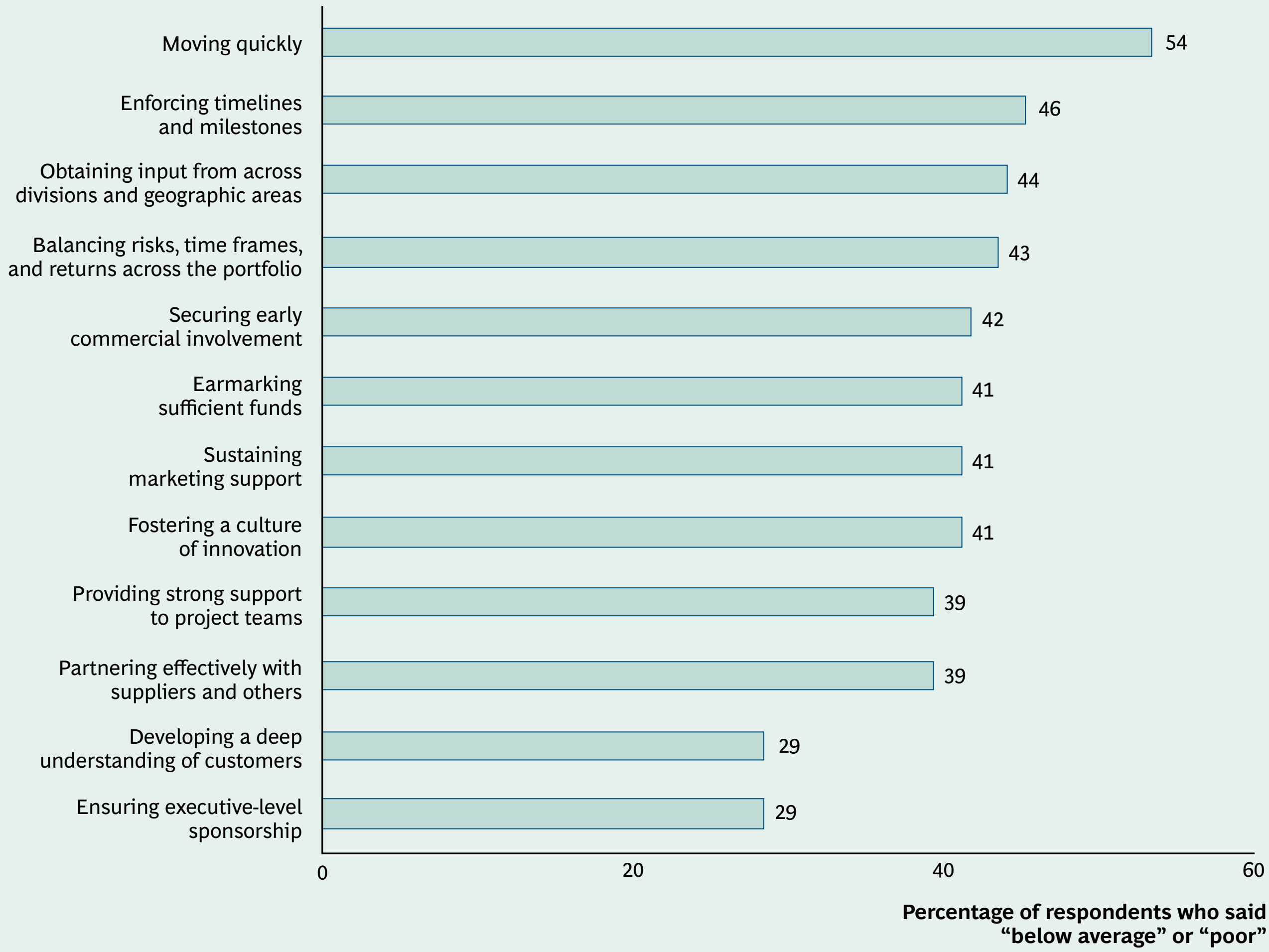
time frames, and returns across their innovation portfolio.

These same capabilities relating to speed, discipline, and balance were identified as areas of weakness by respondents to last year's survey, suggesting that companies aren't making progress where it's needed most.

In addition, fully half of respondents deemed their company weak at business model innovation. And a similar percentage considered their company subpar at exploiting the possibilities afforded by outside, or *open-source,* innovation (examples include the use of external networks of scientists, entrepreneurs, suppliers, and partners, and *crowd sourcing*—the outsourcing of functions that are traditionally performed in-house to a large, undefined group of people through the Internet).

Exhibit 15. Speed and Enforcement of Timelines and Milestones Are the Most Commonly Identified Weaknesses

How strong is your company's current performance at these innovation capabilities?



Source: BCG 2007 Senior Executive Innovation Survey.

At the Vanguard

The Most Innovative Companies

Many companies display bursts of innovation over short stretches of time or in specific business or product lines. A few companies have seemingly institutionalized the ability to innovate, witnessed by their steady and ongoing generation of bottom-line-enhancing products and services, customer experiences, processes, and business models. These companies appear to be able to "go to the well" whenever they need to and consistently come up with winners, much to the envy and consternation of their competitors.

We asked survey respondents which companies they consider to have reached that pinnacle. (See Exhibit 16.) Below are their top five choices, in order, along with a sampling of thoughts from respondents about what makes these companies as good as they are. Exhibit 17 lists the companies that respondents consider the most innovative within particular industries.

Apple

- Unmatched understanding of customers
- "Remarkable" ability to marry design and technology
- Cutting-edge marketing

Apple remains, in the minds of most executives, the leader when it comes to innovation. Respondents marveled at the company's formidable suite of capabilities: its deep understanding of customers ("The company knows what consumers want before the consumers themselves know it"); its mastery of product design from a functional perspective ("Apple makes the most user-friendly devices in the world") as well as from an aesthetic perspective ("Its product design is truly elegant"); and its marketing abilities ("Apple seems to have a subconscious sense of what will excite people"; "The company knows how to turn commodities into objects of desire"). They also raved about Apple's legacy of innovation ("The company has a history of repeated hit innovations, from the Mac, to the iPod and iTunes, to the new iPhone") and its ability to bring those products to market quickly.

The list goes on. Respondents were impressed, in particular, by the company's vision ("Apple has demonstrated that business model innovation surpasses all other types of innovation") and staying power ("I am amazed at how they continue to reinvent themselves against all odds").

Finally, quite a few executives tipped their hat to the company's leadership. Said one respondent, "No one knows how to push the envelope better than Steve Jobs." Said another, "Apple *is* innovation—no one does it better than they do right now. And it starts at the top."

Exhibit 16. Apple and Google Remain the Pacesetters

Which companies outside of your own industry do you consider the most innovative?

2007	2006
1. Apple	1. Apple
2. Google	2. Google
3. Toyota Motor	3. 3M
4. General Electric Company	4. Toyota Motor
5. Microsoft Corporation	5. Microsoft Corporation
6. Procter & Gamble	6. General Electric Company
7. 3M	7. Procter & Gamble
8. The Walt Disney Company	8. Nokia Corporation
9. IBM Corporation	9. Starbucks Corporation
10. Sony Corporation	10. IBM Corporation

Sources: BCG 2007 Senior Executive Innovation Survey; BCG 2006 Senior Executive Innovation Survey.

Exhibit 17. Respondents Named the Most Innovative Companies by Industry

Financial services	1. Citigroup 2. The Goldman Sachs Group 3. Bank of America Corporation 4. ING Group 5. Fidelity Investments	**Automotive and motor vehicles**	1. Toyota Motor 2. BMW Group 3. Honda Motor Company 4. DaimlerChrysler Corporation 5. Volkswagen
Pharmaceuticals, biotechnology, and health care	1. Pfizer 2. Genentech 3. Merck & Company 4. Amgen 5. Johnson & Johnson	**Industrial goods and manufacturing**	1. General Electric Company 2. 3M 3. Toyota Motor 4. The Boeing Company 5. Caterpillar
Technology and telecommunications	1. Apple 2. Google 3. Microsoft Corporation 4. Cisco Systems 5. AT&T	**Retail**	1. Wal-Mart 2. Target Corporation 3. Amazon.com 4. Best Buy Company 5. Nordstrom
Entertainment and media	1. The Walt Disney Company 2. Apple 3. Sony Corporation 4. Google 5. News Corporation	**Energy**	1. BP 2. Exxon Mobil Corporation 3. Royal Dutch Shell 4. General Electric Company 5. Duke Energy Corporation
Consumer products	1. Procter & Gamble 2. Apple 3. Sony Corporation 4. Johnson & Johnson 5. 3M	**Travel, tourism, and hospitality**	1. Marriott International 2. Virgin Group 3. Hilton Hotels Group 4. Starwood Hotels & Resorts Worldwide 5. Southwest Airlines

Source: BCG 2007 Senior Executive Innovation Survey.

Google

- Number and breadth of new offerings
- Speed to market
- Innovation-supporting culture

Although by far the youngest company on the list, Google has established itself as one of the most innovative around. Respondents commented on its already sizable impact ("When older companies that got into Internet services first start copying Google, that's a huge deal") and steady stream of new offerings ("They seem to come up with a new, useful product almost every day"). They also admired the company's vision ("They appear to have a different way of seeing the world, and they're acting on it"), business model ("brilliant"), customer orientation ("They listen to their customers and design their products around the end user"), and execution ("superb").

Respondents were particularly impressed by Google's culture. They noted how the company strives to keep morale high through such perks as free massages and flexible schedules ("Google makes its employees a priority, offering benefits that make the work environment more pleasant"); how it makes sure employees have the capacity to focus on innovation ("They give their engineers time to invent"); how it encourages creativity and experimentation ("Google isn't afraid of calculated, risky investments"); and how it flattens its organization structure to foster innovation ("Google lets any employee surface new ideas and get face time with senior management"). One respondent concluded, "This is the direction that companies that value and want to retain talent need to head. I'd like to work there myself."

Toyota Motor

- Vision
- Innovative manufacturing processes
- Strategic commitment to quality

Toyota is held in high regard as a relentless, successful innovator. Respondents praised the company for its vision—its ability to consistently identify consumer needs ahead of the competition, evidenced most recently by the success of the Prius. "Toyota anticipated the demand for hybrid vehicles, invested and developed the technology, and is now the recognized leader, while the Big Three just keep pumping out more trucks and bad financing deals," said one executive. Said another, "Toyota has a brilliant strategic view of all factors affecting the direction and buying habits of the industry. And it's willing to forgo today's profit in order to dominate the market later on."

Respondents also praised Toyota for its legendary manufacturing processes ("unsurpassed," "a decisive competitive advantage") and ongoing efforts to improve those processes. "They've really set the manufacturing and supply chain standard for the rest of the world," said one executive. Respondents also noted the company's "fanatical" commitment to quality—its "drive for perfection in a throwaway world." As one executive concluded, "Toyota genuinely believes that quality is important and that it pays for itself. It's hard to argue with the results of that philosophy."

General Electric

- Consistent innovation across industries
- Innovation-driving culture and organization structure
- Propensity to conquer new markets

GE won plaudits for its ability to innovate across its many business lines—to "constantly reinvent itself and improve despite the inertia of size and its diversity of products." Said one respondent, "GE has long been a top competitor in all fields it participates in. You don't get there without innovation. That a conglomerate can do this on so broad a scale is amazing." Seconding this observation, another respondent commented, "For a big company, they demonstrate an amazing diversity in innovative product development—from medical systems to environmentally friendly power plants."

Respondents also praised GE for its innovative management techniques and innovation-supporting organization structure and culture, including "some of the most unique HR approaches in the world." Executives noted the company's propensity to enter—and ultimately dominate—new markets, the latest example being its foray into "green" technologies. "This is an extremely large firm that acts like a growth company," said one executive. "It's quite aggressive." And few would be willing to bet against its success. "GE has repeatedly moved into entirely new businesses and succeeded either with product innovations or business model adjustments. Bottom line, it's still the king at getting things done."

Microsoft

- Ongoing launch of new, successful products and services
- Unwillingness to "sit still"
- Reach and staying power

Microsoft has been synonymous with innovation for so long that it can be easy to overlook the company's accomplishments. Yet it remains very much at the forefront of innovation, as the recent introduction of Zune and Vista confirm. Respondents praised Microsoft for its continuous stream of new offerings ("It's always innovating and bringing new products and services to the market"), emphasis on quality ("always improving its product"), and speed. They also praised its customer orientation ("It always listens well to consumers") and ability to "update its business models according to trends," as well as its strong commitment to R&D.

Other respondents took a step back and reflected on how the company has made itself—and manages to keep itself—ubiquitous. "Microsoft continues to locate pinch points in people's working lives and deliver IT-based solutions," said one executive. "It's been doing this now for decades and continues to do it, and do it extremely well. There are reasons it's managed to stay at the top of such a competitive space for so long." Said another respondent, "Love it or hate it, you can't help but marvel at the brainpower behind this megacompany and at the sheer impact Microsoft has had on computing throughout the world."

Becoming a More Innovative Enterprise

The most innovative organizations excel not just at idea generation—although obviously they're strong at that—but in the corresponding set of capabilities necessary to transform their ideas into profits. Indeed, in our experience, the vast majority of companies have an abundance of ideas. But only a handful are truly innovative enterprises capable of consistently generating returns from those ideas. These companies manage the entire innovation-to-cash process thoughtfully, aggressively, and well. In short, they know what it takes to make innovation pay, and they execute.[1]

Companies seeking to vault themselves into this category have many levers to pull—almost too many, in fact. Where should they concentrate their efforts first? The answer will vary by organization and is heavily influenced by such factors as business model, competitive position, and industry. But there are two aspects of the innovation-to-cash process that virtually all businesses would do well to put at the top of their priority list: managing the cash curve and fostering a more risk-tolerant culture.

Managing the Cash Curve of Innovation

To manage innovation for maximum return, companies need a disciplined way to analyze investment options and make decisions. The cash curve is the most effective tool for doing this.

A cash curve depicts the cumulative cash investments and returns, both expected and actual, for an investment over time, starting at the very beginning of development and ending at the point at which the product or service is removed from the market. (See Exhibit 18.) The curve is a uniquely valuable tool for analysis and decision making regarding virtually all aspects of innovation. It forces managers to think through the dynamics of cash, helps them clearly see the impact of investment and management decisions, enables them to identify at-risk areas, and fosters discussion on how to improve the eventual payback.

Such discussion is critical because managers often begin the innovation process with very different assumptions about the true goals of an effort, wildly divergent attitudes toward risk, and no shared approach to managing the process. Using cash curve analysis and the discussion it generates, leaders can get everyone on the same page regarding goals and risks, and can align the various parts of the organization around the effort.

Note that the curve doesn't replace or eliminate the need for solid, insightful financial analysis. It's

1. For a thorough discussion of the practices of leading practitioners of innovation, see James P. Andrew and Harold L. Sirkin, *Payback: Reaping the Rewards of Innovation* (Boston: Harvard Business School Press, 2007).

important to have detailed information about cash flow, net present value, option values, and the financial outcomes of multiple scenarios. But the information contained in spreadsheets is often hard to apply to the innovation process. It's sterile, difficult to connect to decisions, and often so voluminous as to be virtually impossible to use effectively. The cash curve, in contrast, brings the right issues to light in a very user-friendly way—it's truly a case of a picture being worth a thousand words (or millions of dollars).

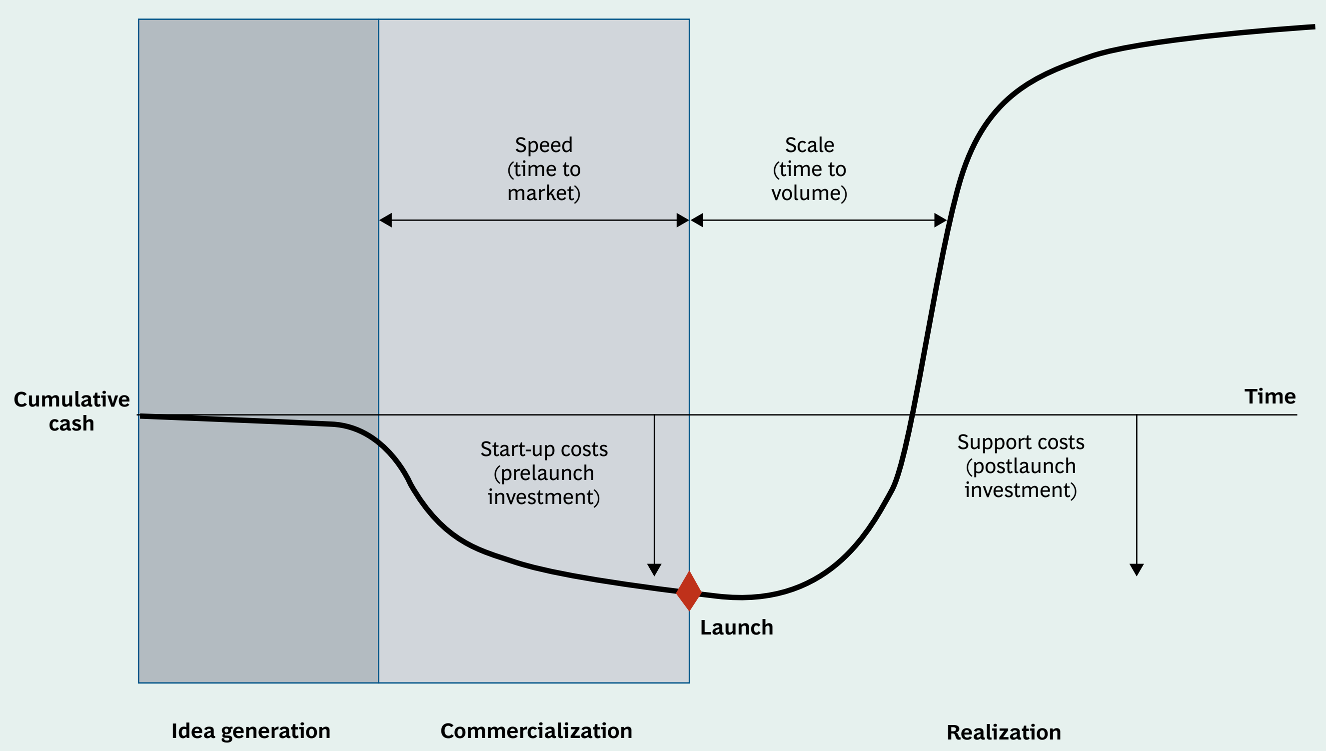
The cash curve focuses attention on four key factors that affect the success of a new offering and its ability to generate payback: *start-up costs,* or prelaunch investment; *speed,* or time to market; *scale,* or time to volume; and *support costs,* or postlaunch investment. Spreadsheets tend to obscure these factors, but the curve makes them visible and the inherent tradeoffs more explicit. That makes it easier for a management or project team to ask the right questions and take the steps necessary to reshape the curve and improve a project's potential.

Start-up Costs. A large start-up investment may be necessary in order to develop the assets and capabilities that will result in substantial cash returns. However, a large investment increases the risk and multiplies the degree of marketplace success required to generate payback. High start-up costs will also affect how the innovation process is managed and the choice of business model. Cash curve analysis will prompt such questions as:

- Are start-up costs too high or too low?

- If they are too high, can we lower them by using a different model of innovation—for example, col-

Exhibit 18. The Cash Curve Must Be Actively Managed to Maximize Return on Investment



Source: James P. Andrew and Harold L. Sirkin, *Payback: Reaping the Rewards of Innovation* (Boston: Harvard Business School Press, 2007).

laborating with a partner on part of the process rather than going it alone?

- If start-up costs seem too low, are we certain we've invested enough to overcome potential technical, execution, or competitor and market risks?

Speed. A shorter period between idea generation and the launch of a product or service can allow a company to reach the market ahead of its competitors and achieve maximum share, which can result in an earlier breakeven point and a potentially greater long-term cash payback. But an emphasis on speed can entail tradeoffs. It can push up both start-up and support costs, and potentially have a negative impact on product quality. The cash curve will prompt such questions as:

- Is our timetable too aggressive or not aggressive enough?

- What are our competitors doing right now, and what might they do in the future?

- What will the market life cycle be for the new product or service? Could we move faster with a different innovation business model?

Scale. In the case of a new product, the faster it reaches full production volume, the quicker it can begin generating cash profits. (The same logic applies to the rollout of a new process across a company's manufacturing network.) Ideally, therefore, the part of the cash curve representing the time from launch until a new product or service achieves full volume is short and steep. Studying this part of the cash curve will lead to such questions as:

- How much product do we need to sell, and how quickly, to ensure payback for our investment?

- What happens if we miss our volume targets?

- If we exceed our targets, do we have the capacity to quickly increase volume?

Support Costs. These include the costs of marketing and promotional activities, pricing decisions, product improvements and extensions, and cannibalization of other products in the portfolio. A company needs to make sure it spends enough to properly support its investment; at the same time, it needs to recognize when it makes sense to reduce that spending and redirect the funds to other initiatives. Examining the cash curve will lead to such questions as:

- Have we considered all the costs that will go into launching, supporting, and constantly improving the new product or service?

- Is there any risk that support costs will be considerably higher than planned and that the product or service will become a cash trap?

In sum, cash curve analysis, by stimulating and facilitating thinking and discussion, enables management to better analyze the risks and optimize the plan before making a commitment to invest and move forward. It forces managers to bring together their different perspectives with the goal of creating a cash curve that everyone can understand, support, and work toward. It offers a common point of reference for people in different positions and disciplines throughout the company and enables them to assess the performance of a new product or service throughout the innovation process. Companies that are really determined to boost their return on innovation spending will find the cash curve an indispensable tool.

Fostering a More Risk-Tolerant Culture

At the end of the day, a company's innovation efforts will succeed or fail depending on the quality of its leadership. A strong, committed leader will create an environment that supports innovation and drives it forward; a less determined leader will likely watch the company founder. The caliber of leadership and the commitment to innovation seen at the helm of the most innovative companies demonstrate the truth of this axiom.

One of the most critical capacities a leader must have is the ability to encourage risk taking. But risk, not surprisingly, is anathema to many organizations. Indeed, companies create structures, processes, and metrics precisely for the purpose of risk mitigation. Yet risk is an inherent part of the innovation process, and leaders and companies that strive to avoid it entirely will likely see their efforts fail. (Recall that a risk-averse corporate culture was identified by survey respondents as the *single largest factor* impeding companies' ability to maximize their return on innovation spending.)

Fostering a culture of risk tolerance can certainly be an uphill battle. A leader will have to contend with managers who are more focused on short-term goals, particularly quarterly numbers, than on the longer-term actions necessary to drive innovation. Employees may try to find ways to squelch any risky ideas that do not contribute to those short-term goals, no matter what the chief executive or other senior leader does.

But this is a battle worth fighting, and the leader must fight it decisively and on several fronts. Success will require instituting appropriate incentives to foster risk taking and ensuring that a communications plan is in place that can spread the word and keep spreading it. Most critically, it will mean demonstrating to the rest of the organization—through the leader's words and actions—that innovation is a personal priority. This is truly a case of walking the walk and talking the talk, because employees are unlikely to believe a leader who says one thing and does another.

Helping your organization achieve greater payback from its efforts at innovation is a major, complex undertaking, and it can be hard to know precisely where to begin. But the most important thing is that you do, in fact, begin. Think, plan, and take deliberate, explicit, and committed actions. The competitive implications of not doing so are large and lasting, and even a small step can bring results immediately.

To facilitate those first steps, we close with a set of questions and thoughts for leaders that we included in last year's survey report. The issues they raise are evergreen and a good place to start your self-assessment. They will help you think about where your organization is on its innovation journey and where improvements are needed.

- Is innovation really one of the critical elements of my company's overall business strategy? What role does it need to play?

If innovation is not a top strategic priority, that's okay. But you shouldn't expect to be very innovative.

- Do I rigorously track the cash payback from my major innovations? Do I make key assumptions clear and invite rigorous debate? Is my management team in agreement on what's important to drive returns?

Innovation is all about cash payback. Drawing and discussing cash curves can help keep the focus there.

- Do I understand the impact that globalization is having, and will have over the next one to three years, on my company's innovation activities?

RDEs offer sizable advantages and are underexploited by most companies. The most innovative companies carefully but aggressively leverage that potential.

- Do the people in my company believe that our organization is aligned around innovation? If not, what specific elements are out of alignment? What are we aligned around?

Lack of organizational alignment is one of the biggest obstacles most companies face. A confused organization—one that receives mixed messages—is very unlikely to be innovative.

- What specific actions have I taken today, this week, and this month to improve my organization's ability to innovate and generate the required payback from that investment? What do my actions say about my priorities?

Innovation requires and flourishes under strong leadership. The most innovative companies have a leader who wants to make a difference and leave a legacy of innovation.

Survey Methodology

In October 2006, BCG sent this year's survey electronically to the 1,500 largest global corporations (determined by market capitalization) for distribution to their top-ten executives in charge of innovation. Invitations were also distributed to senior-management members of the *BusinessWeek* Market Advisory Board (an online reader panel) and made available to readers of the Knowledge@Wharton e-mail newsletter. Participation was voluntary and anonymous. The survey closed in March 2007. (For further details on the survey and how it was conducted, please contact James Stark at stark.james@bcg.com.)

In total, 2,468 executives responded, representing 58 countries. The responses by industry and position broke down as shown below.

Industry	
Technology and telecommunications	438
Financial services	296
Industrial goods and manufacturing	263
Pharmaceuticals, biotechnology, and health care	178
Consumer products	143
Entertainment and media	106
Retail	62
Energy	59
Automotive and motor vehicles	41
Travel, tourism, and hospitality	37
Other	565
No response	280
Total	2,468

Position	
C level	
Chief executive officer	107
President	92
Chief operating officer	76
Chief financial officer	72
Chief technology officer	63
Chief innovation officer	41
Chief information officer	36
Chairman	30
Subtotal	517
Director of strategy	377
Manager of marketing	181
Vice president of strategy	165
Director of marketing	158
Director of R&D	135
Vice president of marketing	126
Manager of R&D	119
Vice president of R&D	118
Other	428
No response	144
Total	2,468

For Further Reading

This report is a product of BCG's extensive work and research on innovation and the innovation-to-cash process. A sample of related publications includes the following:

Measuring Innovation 2007: A BCG Senior Management Survey
A report by The Boston Consulting Group, July 2007

Payback: Reaping the Rewards of Innovation
James P. Andrew and Harold L. Sirkin
(Boston: Harvard Business School Press, 2007)

Innovation 2006
A BCG Senior Management Survey, July 2006

"The Secret of Innovation"
BCG Perspectives, December 2006

"Spurring Innovation Productivity"
Opportunities for Action in Industrial Goods, November 2005

"Innovating for Cash"
James P. Andrew and Harold L. Sirkin
Harvard Business Review, September 2003

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