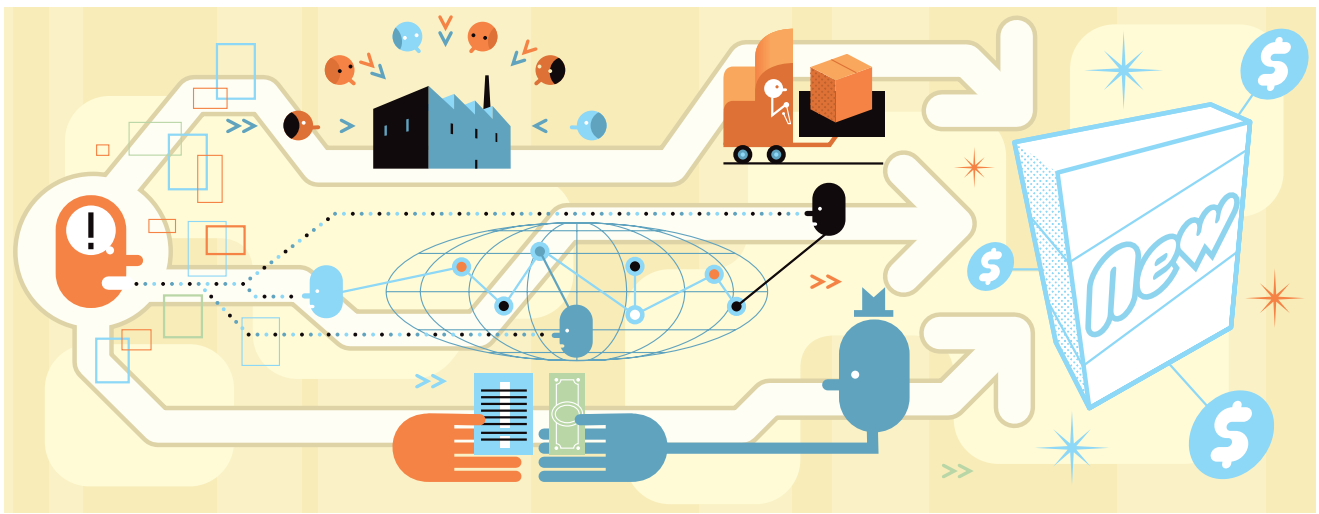


Measuring Innovation 2006



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Executive Summary

In conjunction with its recently completed global survey on innovation, *Innovation 2006*, The Boston Consulting Group invited senior executives to complete a separate survey on innovation metrics and measurement. This report highlights that survey's results. We thank the 269 executives who took the time to participate.

This executive summary highlights some of the survey's high-level findings. The body of the report provides greater detail and explores some of the implications. For additional information, please see the list of contacts at the end of the report.

Key Findings

- Innovation is widely undermeasured, and few firms—even those that attempt to track innovation rigorously—are confident they're doing it right.
- The majority of companies that do use metrics typically use only a handful—i.e., five or fewer.
- The three metrics that executives consider most valuable are time to market, new product sales, and return on investment in innovation.
- Few companies tie employee incentives to innovation metrics.
- The potential for most companies to improve their measurement practices—and, as a result, boost their return on innovation spending—is sizable.

James P. Andrew
Senior Vice President and Director
Worldwide Leader, Innovation and
Commercialization Topic Area

Measuring Innovation: The State of Play

As our companion report, *Innovation 2006*, revealed, companies globally are attaching ever-greater strategic importance to innovation and raising their spending on it proportionately. Yet there is a critical element missing: metrics and measurement. Although companies certainly realize the importance of measurement, few companies, in practice, rigorously track their innovation efforts from start to finish. And among those firms that *do* try to measure innovation carefully, few are

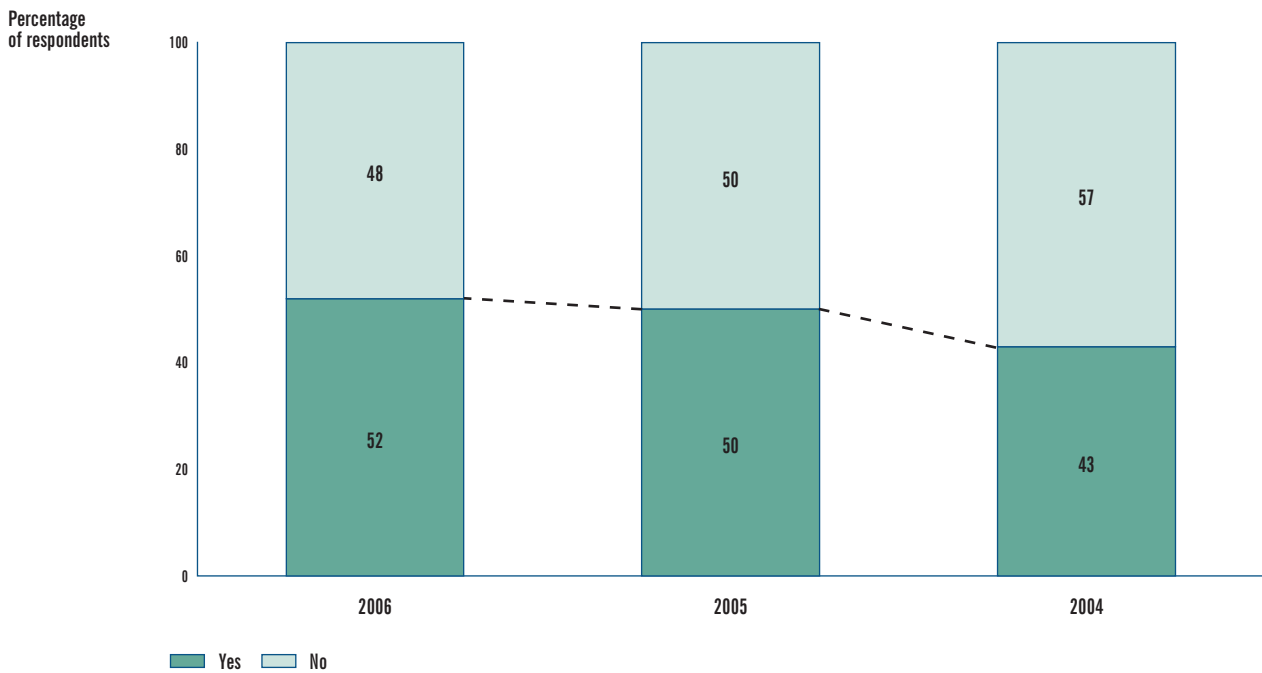
confident they're getting it right. Taken together with the high percentage of companies that are dissatisfied with their return on innovation spending, obviously there's a problem here, one that can and should be addressed. (See Exhibit 1.)

Below we offer a snapshot of companies' current measurement practices. At the end of the report, we offer some suggestions for improvement.

EXHIBIT 1

DESPITE SOME IMPROVEMENT, DISSATISFACTION WITH THE RETURN ON INNOVATION SPENDING REMAINS HIGH

Are you satisfied with the financial return on your investments in innovation?



Sources: BCG 2004 Senior Executive Innovation Survey; BCG 2005 Senior Executive Innovation Survey; BCG 2006 Senior Executive Innovation Survey.

Areas of Focus: What, Why, and How

Innovation can be viewed as having three distinct but related components: *inputs*, or resources, such as people and money; these get fed into *processes*, which act on and transform the inputs; and *outputs*, or the end results, which include both cash returns (and ultimately, returns for shareholders) and indirect benefits, such as a stronger brand and acquired knowledge that can be applied to other offerings and purposes. All three components can, and should, be measured, and measured thoroughly. Yet that's hardly common practice.

Start with the number of innovation metrics most companies use. Given the scope of activities that innovation covers, you'd expect companies to employ a battery of measures. Most firms, however, don't. In fact, the majority of respondents—63 percent—said their companies track five metrics or fewer, hardly a sufficient number to get a comprehensive read on performance across all three components. (See Exhibit 2.)

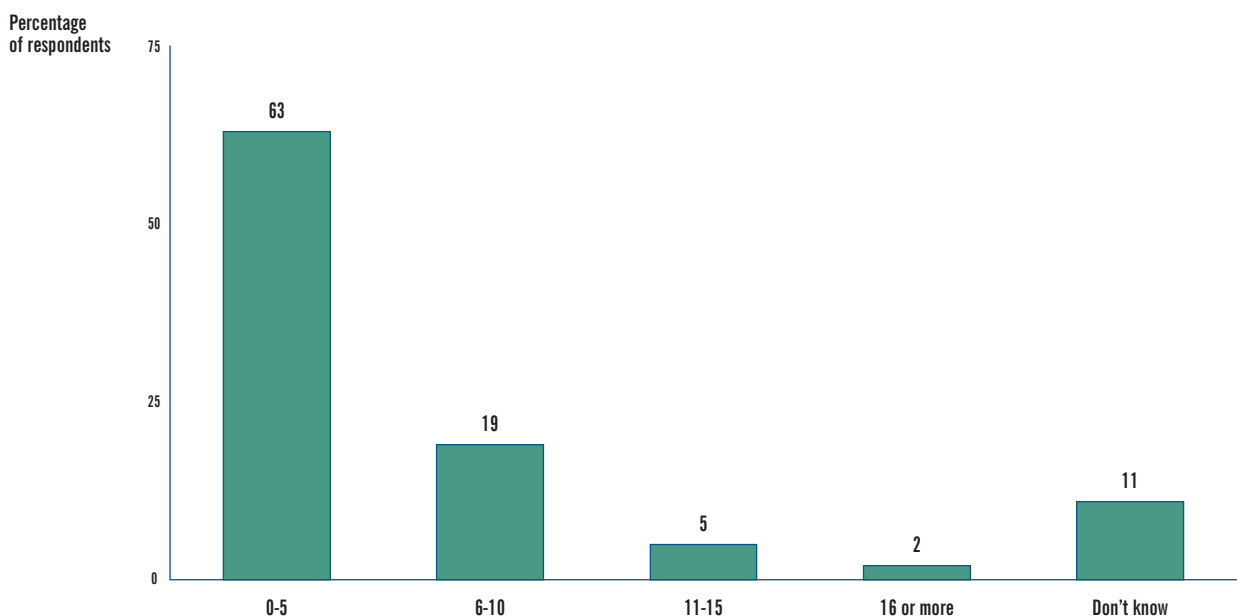
When companies do apply metrics, what are they most interested in tracking? Innovation *outputs* capture by far the most attention: 78 percent of respondents said their companies use metrics to measure them, employing such yardsticks as the number of new products launched, changes in market share, and incremental sales and profit growth. (See Exhibit 3.) Simultaneously, however, many companies admit they do a spotty job of measuring an important driver of output performance: the post-launch impact of their support activities. In fact, 47 percent of respondents said they apply post-launch metrics sporadically; 8 percent said they don't apply them at all. (See Exhibit 4.)

Measurement of innovation inputs was a much lower priority, with 60 percent of respondents saying their companies measure them. (Commonly used metrics here: operating expenses, capital expenditures, and the number of full-time employees dedicated to specific functions.) Finally, only about half

EXHIBIT 2

MOST COMPANIES USE ONLY A HANDFUL OF METRICS

Approximately how many innovation metrics does your company regularly collect and use?

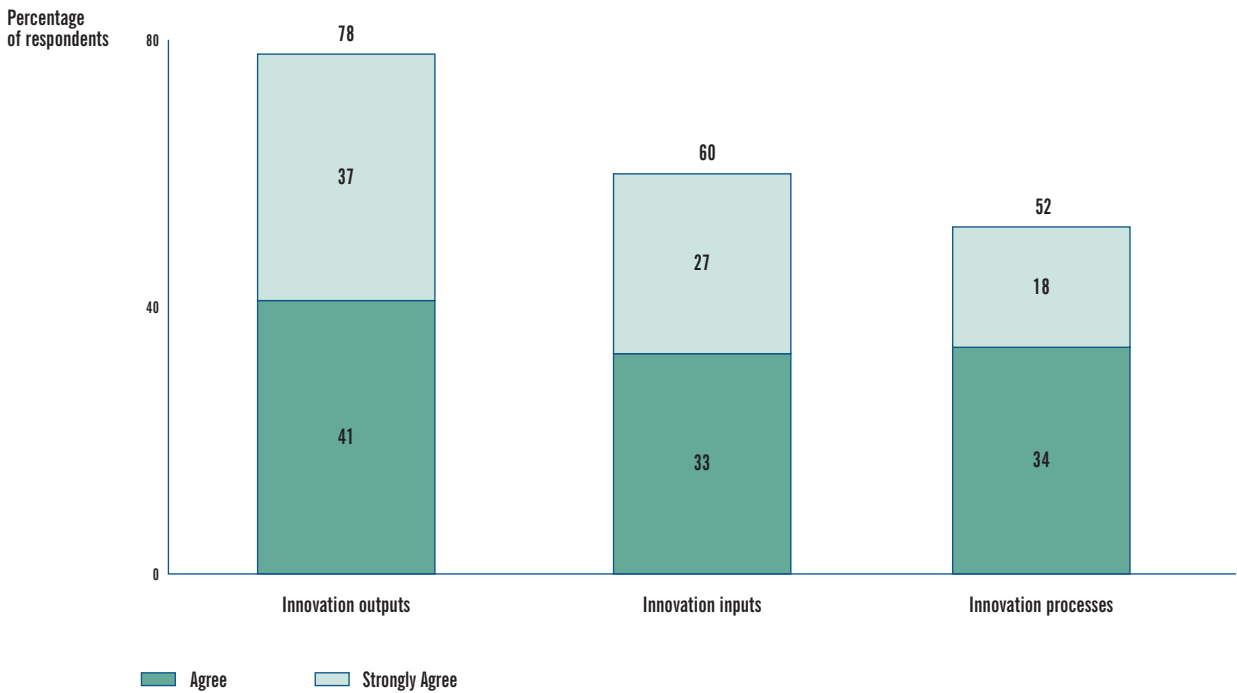


SOURCE: BCG 2006 Senior Executive Innovation Metrics Survey.

EXHIBIT 3

INNOVATION OUTPUTS CAPTURE MOST OF THE ATTENTION

My company collects and uses metrics to assess the following:

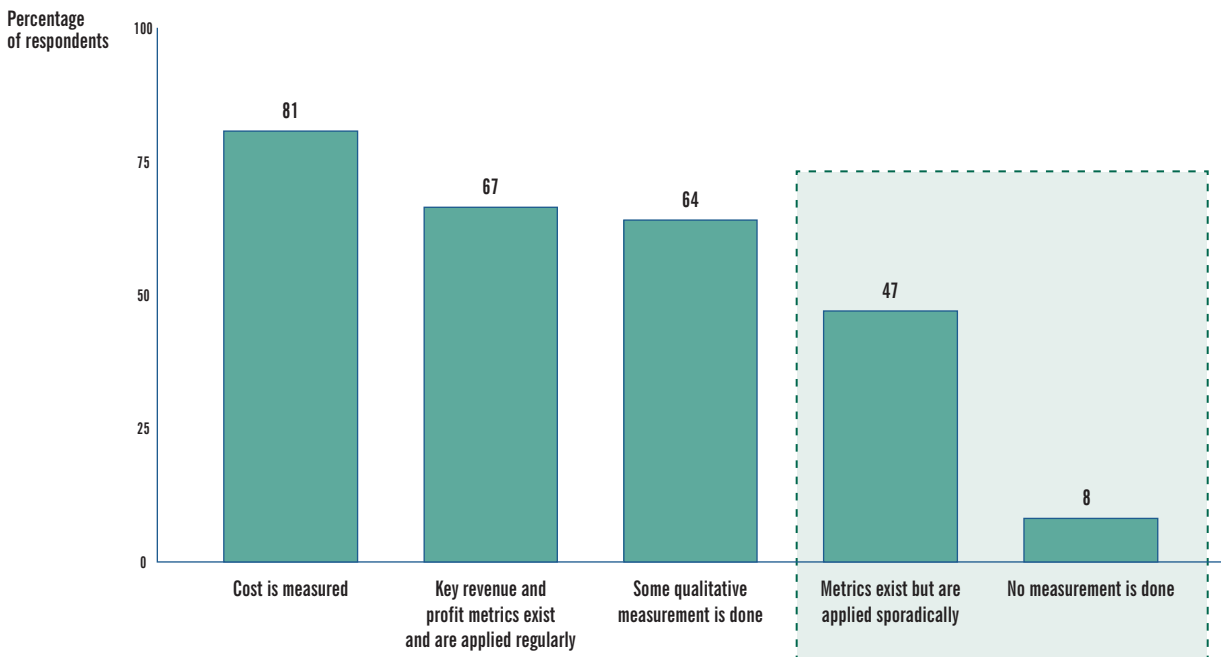


Source: BCG 2006 Senior Executive Innovation Metrics Survey.

EXHIBIT 4

OVER HALF OF COMPANIES MEASURE POST-LAUNCH IMPACT SPORADICALLY OR NOT AT ALL

How does your company measure the post-launch impact of innovation?



Source: BCG 2006 Senior Executive Innovation Metrics Survey.

of respondents said their companies closely track the efficiency of their innovation processes (using such metrics as cycle times through specific parts of the process and the difference between the initial expected financial value of an idea and its ultimate realized value). This means that fully half of all companies do not have an informed view on how well their innovation process (if they have a process at all) is performing. Put in that light, the widespread dissatisfaction with the financial return on innovation spending starts to become a bit clearer.

Commonly Used Metrics And Indispensable Ones

When we asked respondents to identify, from a list of metrics we see used often in practice, which ones their companies regularly monitor and use, the most commonly chosen was *total funds invested in growth projects*. (See Exhibit 5.) Three out of four respondents said their companies track it. This was followed, respectively, by a comparison of actual and projected performance, the allocation of investment across projects, and the number of

projects that meet planned targets. The three *least* popular on the list, respectively, were the number of projects killed or tabled at each milestone, the percentage of innovation ideas funded, and cannibalization of existing product sales by new offerings.

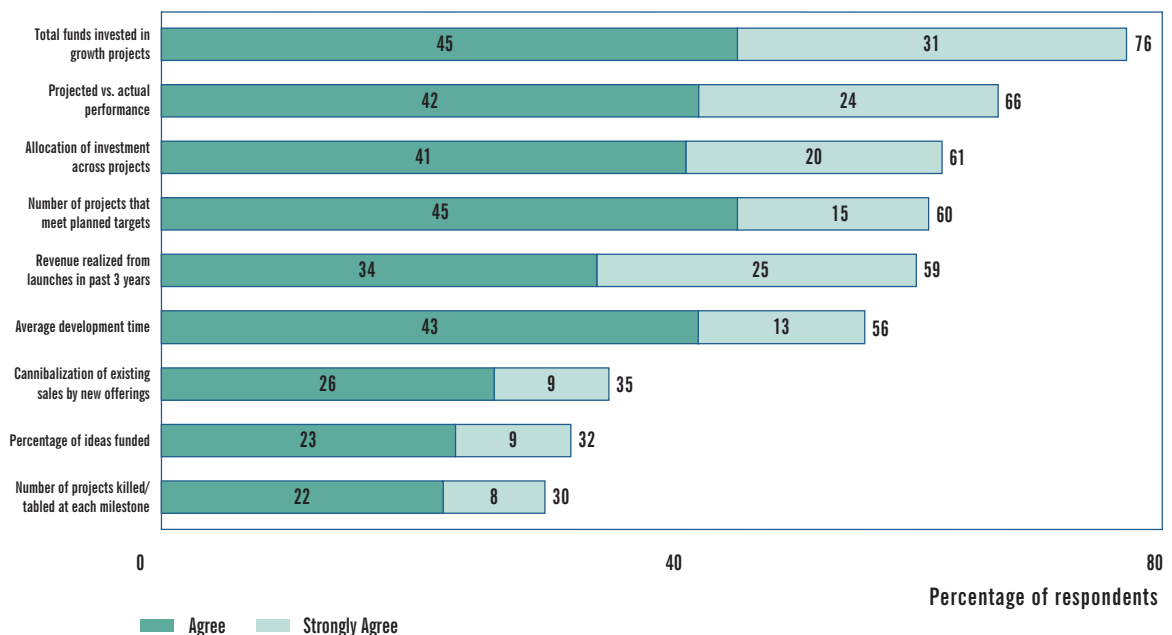
When we asked which metrics had the most impact on employee behavior—that is, which metrics caused people to act differently with regard to innovation—the first two choices among respondents, not surprisingly, were new product sales and time to market, respectively, followed by customer satisfaction. (See Exhibit 6.) When we asked a related but different question—In which *areas* do metrics have the most impact on behavior?—respondents listed idea selection, optimization of ROI, and minimization of time to market, respectively, as the top three. (See Exhibit 7.)

Interestingly, while many companies clearly recognize the potential impact of metrics on behavior, very few firms attempt to aggressively leverage it by tying employee incentives directly to metrics. Indeed, less than a fourth of respondents said their companies link the two consistently, and nearly a

EXHIBIT 5

TOTAL FUNDING FOR GROWTH PROJECTS, AN INPUT MEASURE, IS THE MOST COMMON METRIC

The following metrics are collected and used by your company (agree or disagree):

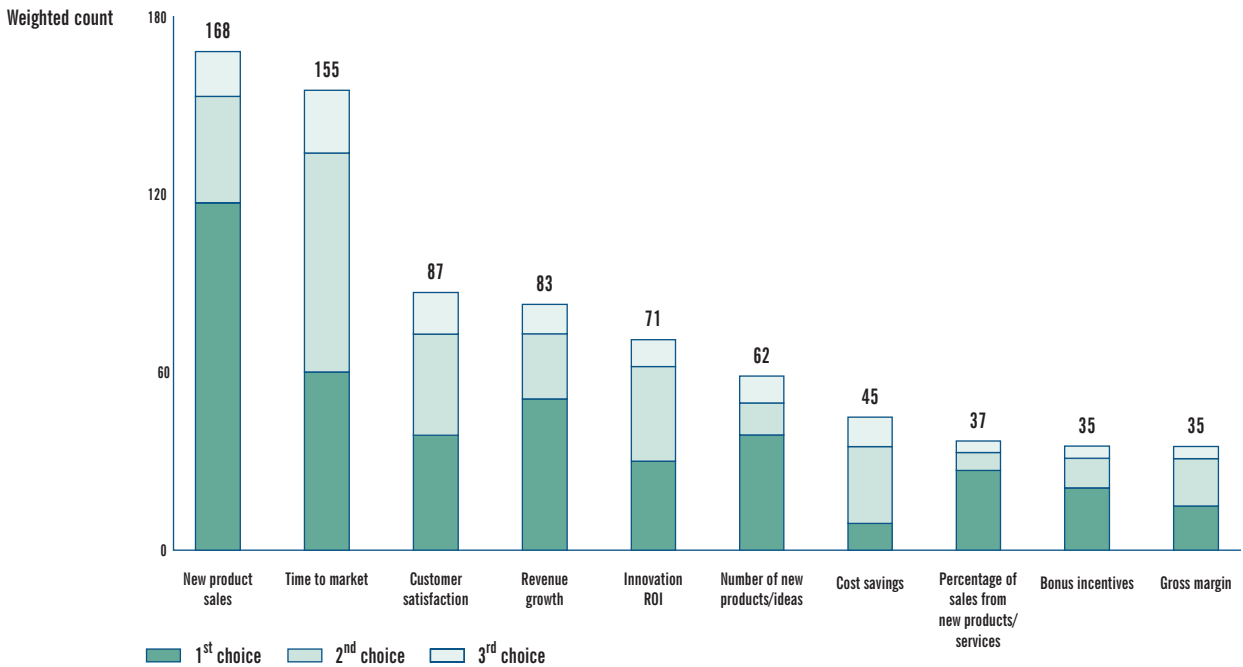


SOURCE: BCG 2006 Senior Executive Innovation Metrics Survey.

EXHIBIT 6

METRICS FOR NEW PRODUCT SALES AND TIME TO MARKET HAVE THE GREATEST IMPACT ON BEHAVIOR

Which innovation-related metrics most impact or guide people's behavior? In other words, which metrics, if any, cause employees to act differently with regard to innovation?



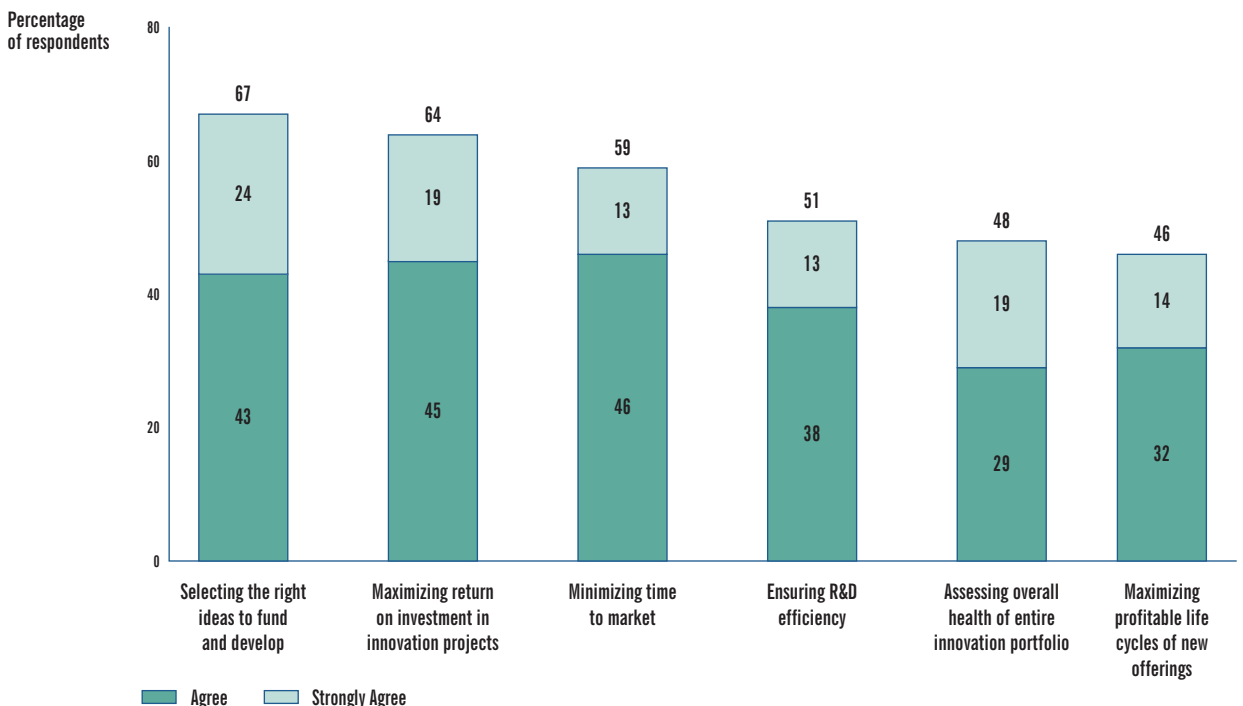
Source: BCG 2006 Senior Executive Innovation Metrics Survey.

Note: Respondents were asked to name up to three metrics in order of importance. Votes were weighted as follows: 1st (x3), 2nd (x2), 3rd (x1).

EXHIBIT 7

METRICS HAVE GREATEST IMPACT ON BEHAVIOR IN IDEA SELECTION

How are your innovation metrics used? Where do they have an impact on how your company actually behaves?



Source: BCG 2006 Senior Executive Innovation Metrics Survey.

third of our respondents said that their companies do not link incentives to innovation metrics at all. (See Exhibit 8.)

Finally, which individual yardsticks do companies consider most valuable? When we asked the open-ended question—“If you could use only three metrics to measure your company’s innovation performance, which would you choose, and why?”—the clear winner was time to market (a process metric), with new product sales (an output metric) finishing second and return on investment (another output metric) placing third. (See Exhibit 9.)

Why these three? The rationales given touched on a range of issues surrounding each, but there was also, in the end, a high degree of consensus. Some representative comments:

Time to market:

“In a big company like ours, time to market is a key issue and materially affects product-life-cycle profits.”

“Ideas in the pipeline forever are of no use.”

“Speed to market is as important as getting there with the right products.”

“The time between an idea and its introduction in the marketplace is an indication of efficiency. Long delays mean there’s a problem in the innovation structure.”

“This is a critical metric for driving cross-functional interaction.”

“It forces our new-product-development teams to focus on execution and not allow the ‘nice-to-haves’ to distract from the ‘must-haves.’”

New product sales:

“The best easy-to-measure metric.”

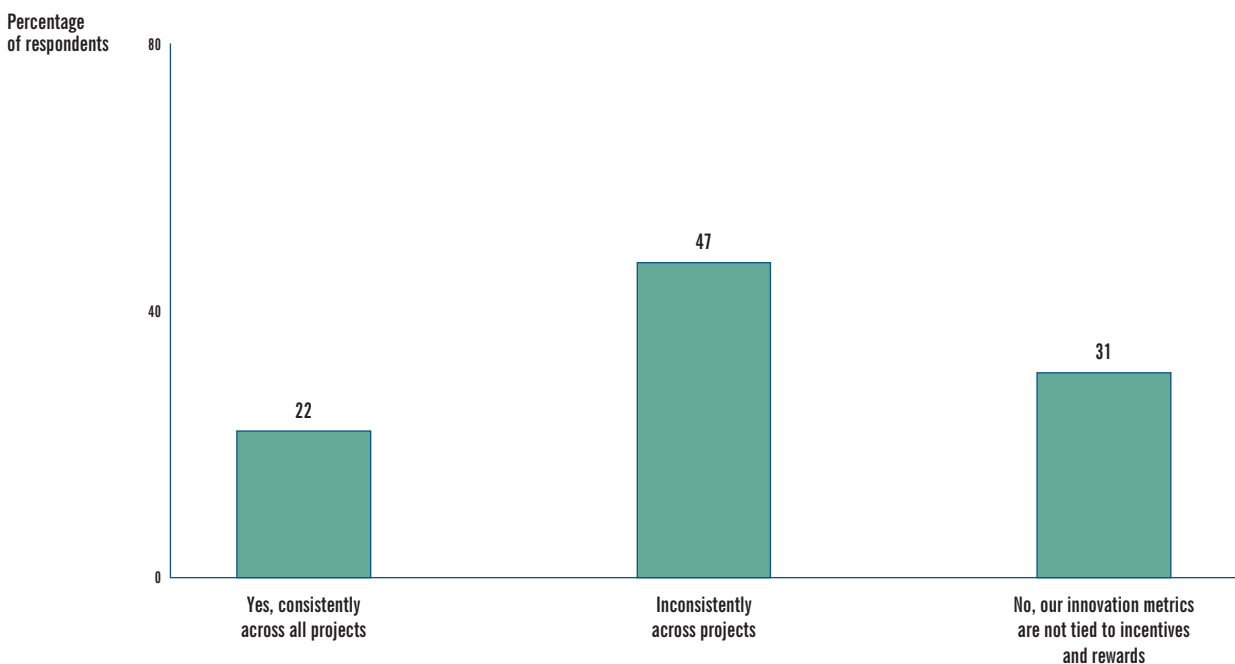
“The most direct measurement of impact on the business.”

“In general, new products are much more profitable than old ones, so if they sell well the objective is achieved.”

EXHIBIT 8

FEW COMPANIES AGGRESSIVELY TIE INCENTIVES TO INNOVATION METRICS

Are incentives and rewards (formal and informal, monetary and non-monetary) directly tied to your innovation metrics?

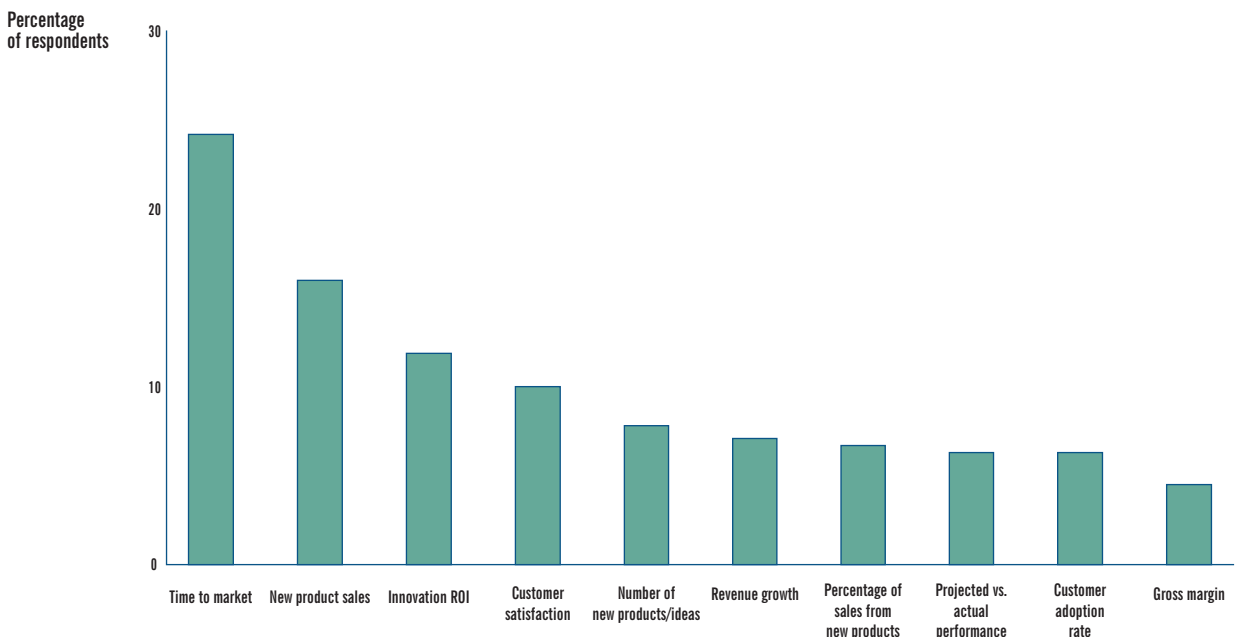


SOURCE: BCG 2006 Senior Executive Innovation Metrics Survey.

EXHIBIT 9

TIME TO MARKET, NEW PRODUCT SALES, AND ROI DEEMED MOST USEFUL METRICS

If you could use only three metrics to measure your innovation performance, which would they be, and why?



Source: BCG 2006 Senior Executive Innovation Metrics Survey.

“This forces the sales force to sell the hard-to-sell stuff and the engineering function to provide the necessary support.”

“It provides necessary feedback to R&D to help them improve their interfaces with marketing, sales, and customers.”

“Incremental sales is the measure proving that the innovative process was followed and a success. If the process is well established, sales should follow. Otherwise, part of the process failed in not making corrections or terminating the project before it hit the market.”

Return on investment:

“Innovation is an investment with high costs. It should be expected to have a return.”

“ROI is the yardstick that allows us to compete for capital from our parent company.”

“It directly relates investment to impact.”

“We need to track the return—how quickly it comes, how long it is sustained, and whether it meets plan. And if it doesn’t meet plan, we need to know why.”

“ROI ensures that the project will create value and not just win awards from magazines.”

“It isn’t enough to measure return on any one idea. It’s better to measure the overall return on innovation, allowing for the inevitable failures on an individual level.”

Recommendations

Without a doubt, measuring innovation is a challenge, as our survey results confirm. It is also, however, a necessity, given the rising sums most companies are investing in innovation and the competitive implications of earning a poor return on that investment. Yet few companies, at this point, are measuring their innovation efforts with a sufficiently high degree of thoroughness, rigor, or accuracy.

How can companies improve? We'll touch on two ideas: aligning metrics with innovation strategy, and focusing on a suite of measures that covers all three components of innovation—inputs, processes, and outputs.

Aligning Metrics with Your Innovation Strategy

Getting measurement right isn't simply a matter of using more metrics, though for many companies that's certainly part of the solution. Rather, it's about picking the right ones. Your choice of metrics should be determined by your innovation objectives, which are ultimately tied to your company's overall business strategy. So the first question to ask is, What type of innovation does your company need based on its competitive environment, growth plans, shareholder expectations, and other relevant considerations?

Innovation can come in three forms or degrees. The first is *incremental* innovation—the relatively small, ongoing, logical improvements and changes to existing products (and occasionally new-product launches) that allow a company to essentially maintain the market share it has. For a yogurt maker, for example, an incremental innovation would be the launch of a new flavor or a slight change in packaging. Each increases the odds that current customers will stay customers by giving them an improved and/or different offering of what they already buy.

Incremental innovation has gotten a bad name from some pundits and “gurus” for being too pedestrian. The reality, however, as any practitioner knows, is quite different. Incremental innovations are critical to maintaining cash flow and market position. In markets that are expanding, incremental innovation can be a very powerful lever for growth

by allowing a company to remain an effective and viable player in the growing environment. In some cases, incremental innovation can also lead indirectly to share gain when competitors are losing share and falling behind. So don't lose focus on incremental innovation—it is a key part of the successful strategies of many companies.

The second type of innovation is *expansionary* innovation, or innovation designed to drive an increase in market share. For our yogurt maker, an example of such would be the launch of a new *type* of yogurt (examples from the past include the introductions of “creamy,” “whipped,” and “lite” yogurts), as opposed to a slight variation on something that already exists in the marketplace. Expansionary innovation drives revenue growth and share gain by increasing both the range of offerings and the number of customers who will be attracted. A continual drumbeat of expansionary innovations is a key lever for powerful growth. And expansionary innovations, unlike breakthrough innovations, discussed below, often lend themselves to systematic identification and exploitation.

The third category of innovation is *breakthrough*. This type of innovation puts a company in an entirely new business. For yogurt makers, breakthrough innovations have at various times included moves into dessert types and healthy “active-culture”-based drinks.

Understanding which type of innovation your company needs to meet its objectives (and, in the case of shareholders, its obligations) will help determine the type of metrics you need to institute and concentrate on. Companies that require relatively few new sources of incremental organic growth to meet their objectives—companies with strong positions in rapidly growing businesses or markets, for example—will want to use metrics that are mainly focused on successfully tapping into current opportunities, ensuring that inputs are being efficiently turned into outputs, and confirming that sufficient cash is being generated as payback. To be clear, though—even companies in these situations will need more than systems of metrics that are focused exclusively on incremental innovation.

Expansionary and breakthrough innovation will still be important and therefore need to be measured and tracked.

At the other end of the spectrum, companies that face significant gaps between their current situation and their aspirations and shareholder demands will need to bias their activities—and metrics—more toward breakthrough innovation. These companies may be willing—and, in fact, may need—to take additional risk and be more focused on absolute performance than efficiency. They will also care a great deal about the number and potential size of their efforts.

In both sets of circumstances, the companies will need to attune their suite of metrics to align their innovation strategy with their overall business strategy. And that is the point—the “right” answer is rarely one of extremes, but consists rather in choosing the set of metrics that in total allow the company to advance in its quest for advantaged growth and profits. The design of an optimal measurement system thus requires a high degree of business understanding and linkage.

Measuring All Components of Innovation

As discussed above, each of innovation’s three components should be measured. They don’t, however, necessarily need to be measured with equal rigor, and you certainly don’t need to measure every single variable or element within each—some will clearly be more important than others, depending on your company’s situation. Use your judgment, based on your innovation objectives and strategy; decide what merits your full attention and what doesn’t. At minimum, and as a general starting point, however, consider tracking at least some of the metrics listed below. And remember, there is no hard and fast formula—the balance between the different metrics, both within and across the three categories, remains the most important factor, and one that only a leader can adequately judge.

For inputs:

- *Financial resources being committed.* Every company measures this, in one form or another. But achieving and maintaining clarity over time, and using this understanding to actively manage the financial profile of an innovation, is much less

common. (For more on this topic, see our companion report, *Innovation 2006*, which discusses the value of using cash curves as an analytical tool.)

- *People.* You need to track the total number of people committed to an innovation, certainly. But you also, more importantly, need to monitor how your *key* people are being used. Every company has individuals or small groups that are highly sought after and disproportionately valuable—everyone wants them on his/her project. Make sure you know how, and where, these people are spending their time.
- *The number of ideas generated and the expected payback for each.* Ideas are an important input—the rocket fuel for innovation. While many companies think they have a shortage of ideas, most don’t. But if you don’t measure, you’ll never know. And if it turns out that you really *don’t* have enough big ideas, you’ll need to know that in order to put in place the necessary steps to resolve the shortfall.
- *Key capabilities.* What and where are the shared resources—and potential bottlenecks—in your organization? For many companies, especially in the financial services industry, it is parts of the IT infrastructure. Regardless of what and where these happen to be in your organization, you need to know how they are being used to support innovation currently as well as how they *could* be used.

For processes:

- *Resources expended per individual project and on average.* A process needs to be both effective and efficient. Most companies can readily measure efficiency, so you can start there—but don’t stop there.
- *Cycle times for the entire process and specific parts.* Speed to market can have a determining influence on how much cash an innovation ultimately generates. You need to track how long it takes to get ideas turned into offerings, and ultimately into cash. If you don’t have a robust time to market measurement, ask yourself why—in our *Innovation 2006* survey, taking too long was the number one factor executives blamed for their companies’ not earning a sufficient return on their innovation spending. And cycle time was

identified as the most important metric in this survey.

- *The number of ideas that are moving from one stage of the process to the next.* If a process is supposed to be working, is it working? What is happening inside the process at any point in time?
- *The difference between the initial expected value of an idea and the actual realized value.* The expected payback from an idea is the basis for many of the most important decisions a leader will make regarding that idea. A key item to understand—and measure, therefore—is how well your process does at estimating expected returns versus the returns actually generated.

For outputs:

- *The number of new products or services launched.* While the absolute number of new offerings is not a financial output, you need to know what is coming out at the end of the process.
- *Incremental gains in revenues and profits.* Whether the innovation is a process change, a new product, or an improved customer experience, an innovation needs to impact profits.
- *Cannibalization of existing product sales by new products.* Cannibalization is one of the dirty secrets of innovation. Few companies measure it well or even really consider it. And what about the cost of *not* cannibalizing your old products? Most companies don't even ask that question.
- *The ROI of your innovation activities.* This is, ultimately, what it's all about. Are you earning a

sufficient return on your innovation spending? Today, only about 50% of companies think they are; a far smaller number truly *know* what their return is. Innovation ROI is a key metric to use to determine how much to invest in innovation—and ultimately a determinant of the company's stock price and total shareholder return.

There are also indirect, non-cash-generating outputs that are important to track. Knowledge gained, for example, can be tracked by the number of patents filed or the number of scientific articles written by staff. Impact on the brand can be gauged by in-house marketing or third-party studies.

Regarding the number of metrics to use, obviously you don't want to use too few. You also don't want to use too many, since time, effort, and resources go into the tracking of each, and not all will prove worthwhile from a cost-benefit analysis. Our experience suggests that the ideal number, across all three elements of innovation, is between 8 and 12.

More important than finding exactly the “right measures,” though, is beginning to use measures that are merely not too “wrong.” Pick a few. Get started tracking. Look at them over time and you will soon see who and what is being successful. Reward them appropriately. Your organization, we're sure, will respond.

And keep us informed of your progress. Our hope is that this report will initiate an ongoing dialogue on this very important topic. If you have questions, comments, etc., on metrics and measurement, please feel free to contact Jim Andrew directly at the e-mail address provided.

For More Information

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

- *Innovation 2006*, BCG Senior Management Survey
- "Making Innovation Pay," BCG Perspectives
- "Innovating for Cash," *Harvard Business Review*
- "Spurring Innovation Productivity," BCG Opportunities for Action
- "Globalizing R&D: Knocking Down the Barriers," BCG Opportunities for Action
- "Innovation to Cash: Orchestrating in the Consumer Industry," BCG Opportunities for Action

For copies of the above publications, please send an email to bcg-info@bcg.com.

For more information on BCG's thinking on innovation, please visit the Web site of the BCG Innovation Institute (<http://innovation.bcg.com>), send an email to innovation@bcg.com, or contact any of the following leaders of our practice:

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