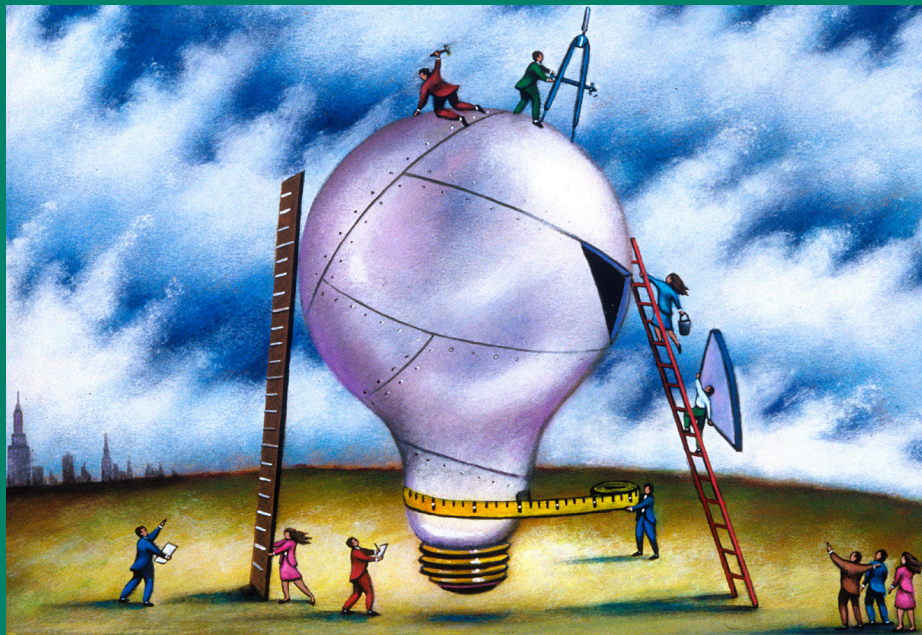


REPORT

A BCG SENIOR MANAGEMENT SURVEY

Measuring Innovation 2009

The Need for Action



THE BOSTON CONSULTING GROUP

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Note to the Reader

In conjunction with its latest annual global survey on innovation—the results of which are described in our companion report, *Innovation 2009: Making Hard Decisions in the Downturn*—The Boston Consulting Group invited senior executives to complete a separate survey on innovation metrics and measurement practices. This report highlights that survey's results.

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Executive Summary

Good decision making hinges on good information. That rule applies to all aspects of business, particularly innovation. Yet companies routinely do a poor job of measuring their innovation efforts—and, as a result, often make decisions more on the basis of guesswork than of hard data. This comes at a potentially sizable cost, especially in the current economic climate, in which the need to account for every dollar and to maximize the return on every investment is magnified.

Our latest survey on innovation metrics and measurement reveals that, on balance, companies continue to struggle with measurement—knowing what to measure, collecting the data, and using the data to make decisions. Yet there are also some encouraging signs. We discuss the good and the bad in this report, and also offer thoughts on how companies can improve their measurement practices and, in the process, improve the return on their innovation spending.

Among the report's key findings:

- ◇ Only 32 percent of executives are satisfied with their company's innovation-measurement practices. And that percentage has been falling.
- ◇ While most executives—73 percent of respondents—believe that innovation should be tracked as rigorously as other business operations, only 46 percent said that their company actually does so.
- ◇ The majority of companies continue to rely on a handful of metrics to measure the full scope of their innovation activities. Fifty-two percent of respondents said their company uses five or fewer metrics. But that number is starting to rise.
- ◇ A surprisingly small number of companies—27 percent of respondents—attempt to drive innovation by linking employee incentives to innovation metrics. But that number, too, is edging up.
- ◇ The most widely tracked components of innovation are overall company profitability (79 percent of respondents said their company measures it), overall customer satisfaction (75 percent), and incremental revenue from innovation (73 percent).
- ◇ The metrics that employees pay the most attention to—the ones that have the greatest impact on their behavior and attitudes toward the company's innovation efforts—are incremental revenue from innovation and overall customer satisfaction.
- ◇ Companies consider themselves most effective at measuring innovation *outputs* (such as revenue growth, shareholder returns, and brand impact). They consider themselves far less successful at tracking innovation *inputs* (for example, dedicated resources, such as people and funds invested) and the quality of their innovation *processes*.

Innovation Metrics and Measurement in 2009

Our companion report, *Innovation 2009: Making Hard Decisions in the Downturn*, which was based on a survey of over 2,700 executives, revealed that the economic downturn is causing many companies to rethink aspects of their innovation activities. In particular, companies are increasingly sensitive to costs. Simultaneously, the report confirmed that many companies are disappointed with the return on their innovation spending—which has been the case since we launched our first innovation survey, in 2004. (See Exhibit 1.)

This report focuses on metrics and measurement—a topic central to both sets of concerns. Most companies recognize the importance of measuring innovation and will readily acknowledge their shortcomings. But too few companies are acting aggressively to try to improve their capabilities. They do not measure the right things, do not measure enough, and, in some cases, do not measure at all. The upshot is that many companies are flying blind when it comes to making critical decisions—decisions that can have a determining impact on investment returns. And in the current economic environment, no company can afford to be potentially throwing money away.

“Yes, We Think Measuring Is Important, but...”

To be sure, there is a strong consensus among executives that innovation activities should be measured. Nearly three out of four respondents to our survey agreed that innovation should be tracked every bit as rigorously as other business functions. (See Exhibit 2.) But relatively few companies follow through on that conviction: only 46 percent of respondents said that their company actu-

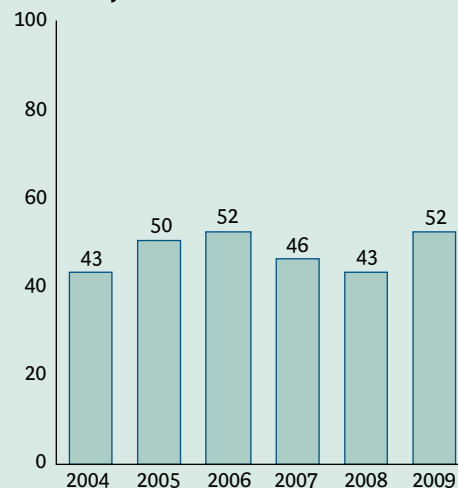
ally measures innovation with the requisite level of attention.

When asked why, if they agree that innovation should be measured, their company doesn't do so, executives gave a number of reasons. (See Exhibit 3.) Uncertainty about which metrics to use was the most common one (32 percent of respondents). Tellingly, though, a nearly equal percentage said it wasn't a high priority—which speaks volumes about the problem and suggests that for those companies, things are unlikely to change for the better.

Exhibit 1. Satisfaction with the Return on Innovation Spending Is Chronically Low

Are you satisfied with the return on your company's investments in innovation?

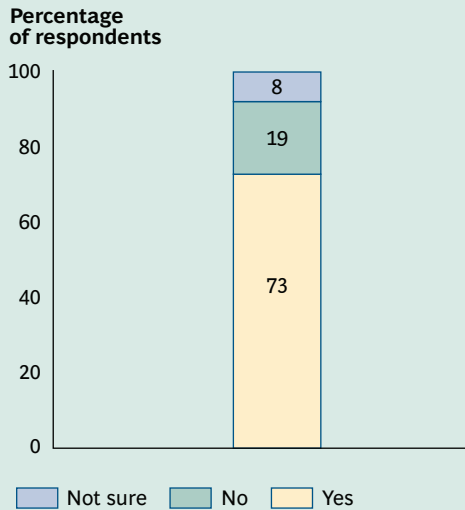
Percentage of respondents who said yes



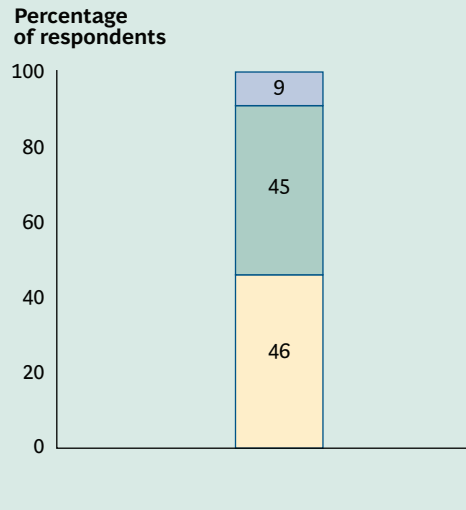
Sources: BCG Senior Executive Innovation Surveys.

Exhibit 2. Executives Believe That Innovation Should Be Measured Rigorously, but Fewer Than Half of Companies Do So

Should your company's innovation initiatives be held to the same standard of measurement rigor as its core business?



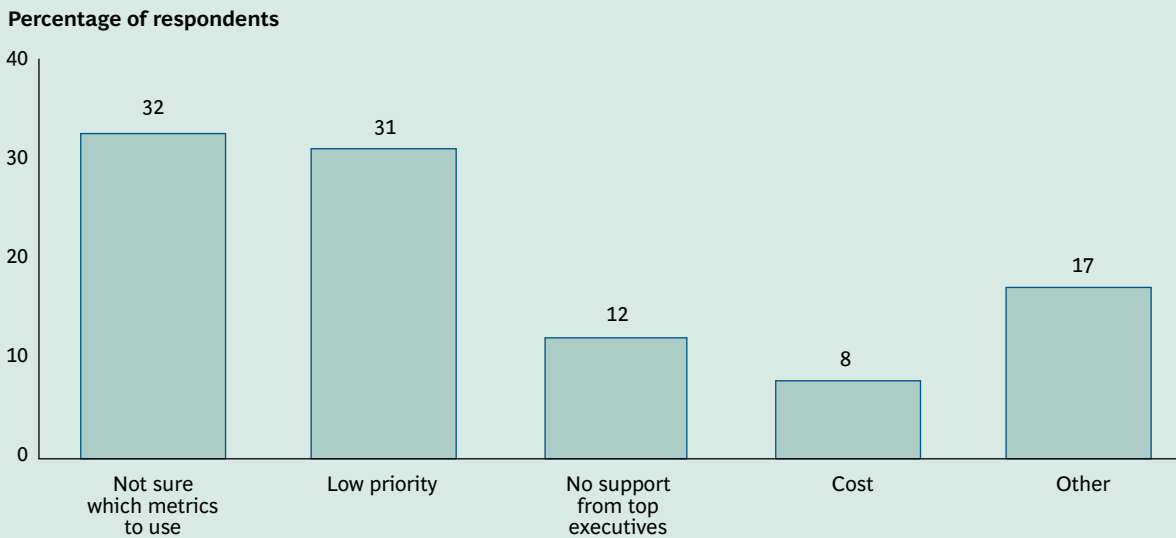
Are your company's innovation initiatives held to the same standard of measurement rigor as its core business?



Source: BCG 2009 Senior Executive Innovation Metrics Survey.

Exhibit 3. Uncertainty over Which Metrics to Use Is a Problem for Many Companies

If you think innovation should be rigorously measured, why doesn't your company do so?



Source: BCG 2009 Senior Executive Innovation Metrics Survey.

Smaller numbers of respondents blamed a lack of support from top executives (12 percent) and the cost of instituting an effective measurement program (8 percent). We also gave respondents the opportunity to write in other reasons. Among the more noteworthy were the potential for impeding the innovation process (“Many in our company believe the myth that innovation equals creativity, and that creativity can be stifled by measurement”), cultural resistance (“We’re just not the kind of company that measures”), and time constraints (“It takes a lot of time to compare and extrapolate significant amounts of data”).

Whatever the justification, most companies are not doing the job in the way they know they should. And they can see the results. Only 32 percent of respondents said they were satisfied with their company’s innovation-measurement practices—and the percentage who say they are satisfied gets lower each year. (See Exhibit 4.)

How Many Metrics?

The most visible symptom of the lack of rigor many companies bring to the task is the small number of metrics

that they use. The majority of respondents (52 percent) said their company uses 5 or fewer—not nearly enough to do a comprehensive job, given the broad scope of activities that innovation comprises. (See Exhibit 5.) In fact, it is our view that it takes 10 to 12 metrics to provide the information necessary to really manage—as opposed to merely react to—the innovation process.

We asked about the worry that too much measurement could stifle innovation. Was that a significant factor holding down the number of metrics? Slightly over a third of respondents said yes, indicating that the notion of an incompatibility between measurement and innovation does have its share of adherents. However, far more respondents (46 percent) said they do not believe that metrics stifle innovation; 20 percent said they were not sure.

There is reason to be encouraged, however. Over the last three years, companies have gradually been raising the number of metrics that they employ. In 2007, 60 percent of respondents said their company uses 5 or fewer; in 2009, that percentage fell to 52. The number of companies that use 11 or more metrics has also climbed appreciably.

Exhibit 4. Dissatisfaction with Innovation Measurement Practices Is Rising

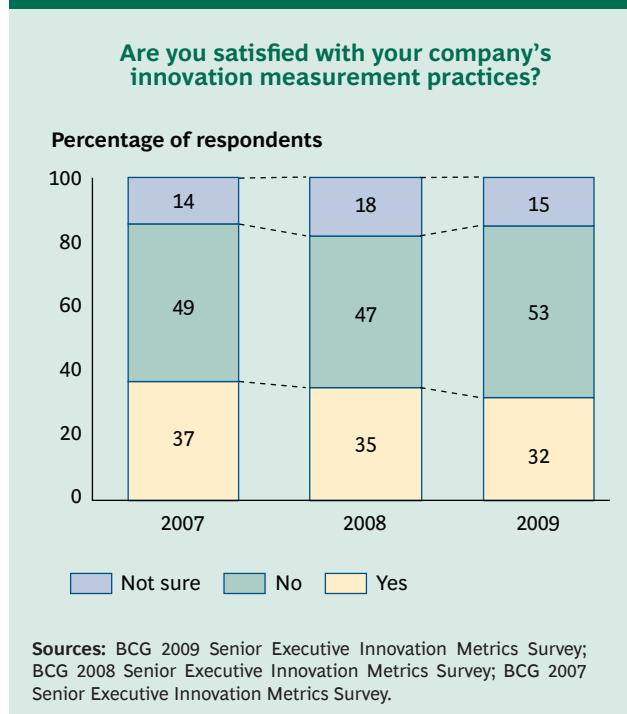
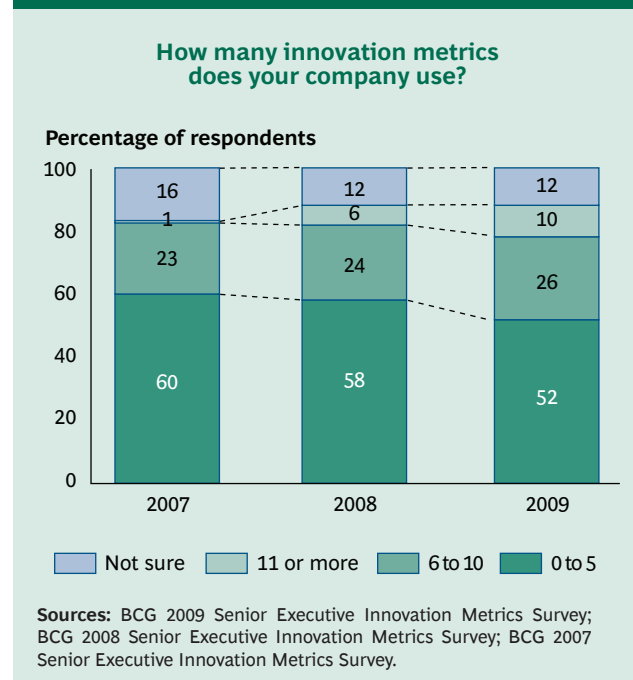


Exhibit 5. Most Companies Still Use Too Few Metrics—but the Trend to Use More Is Encouraging



ciably. This suggests that at least some companies are getting the message and acting on it.

What Are Companies Measuring, and Which Metrics Are They Using?

When companies do use metrics, what components of innovation are they measuring? Overall profitability, first and foremost (79 percent of respondents said their company tracks it), followed by customer satisfaction (75 percent) and incremental revenue growth (73 percent). (See Exhibit 6.) A majority of respondents also said that their company measures time to market (59 percent) and idea generation (55 percent). R&D efficiency, time to volume, portfolio health, and life-cycle performance are also tracked by quite a few companies: each netted a yes from over 40 percent of respondents.¹

It should be noted that companies do not consider themselves equally adept at measuring all aspects of innovation. On balance, they consider themselves best at measuring *innovation outputs*, or 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. Sixty-eight percent of respondents agreed or strongly agreed that their company measures outputs effectively. Companies are less confident in their ability to measure both *innovation inputs*, or resources, such as people and money (59 percent said their company measures them effectively), and *innovation processes*, which act on and transform the inputs (55 percent).

Companies have a vast number of specific metrics at their disposal. But which ones do they actually use? We gave executives a list of fairly common ones and asked them to identify those that their company employs. (See Exhibit 7.) Tied for the most popular (at 65 percent) were total funds invested in growth projects and revenue from

1. We asked a group of 2,701 executives a similar question (“How does your company measure its success at innovation?”), and gave them a somewhat different list of metrics to choose from, in our 2009 Senior Executive Innovation Survey. The three most popular choices were customer satisfaction, overall revenue growth, and percentage of sales from new offerings. (See *Innovation 2009: Making Hard Decisions in the Downturn*, BCG Senior Management Survey, 2009.)

Exhibit 6. Profitability, Customer Satisfaction, and Incremental Revenue Are the Most Closely Tracked Components of Innovation

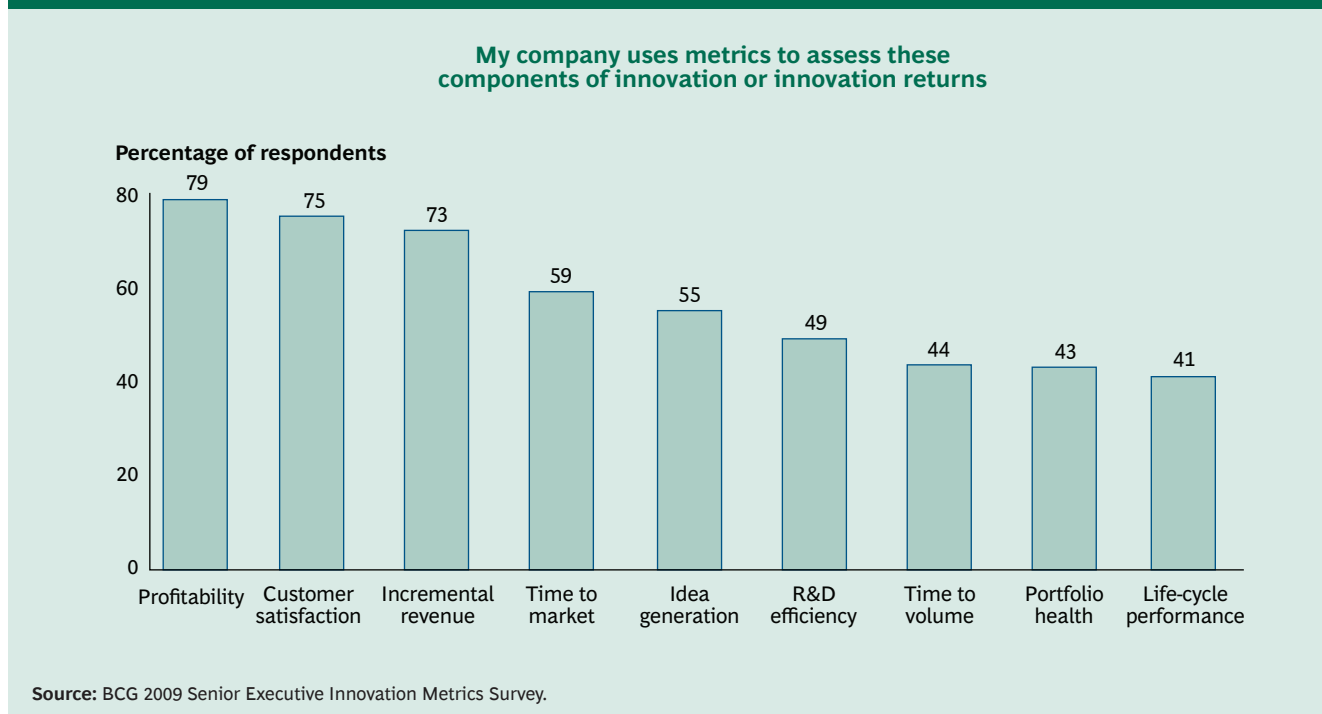
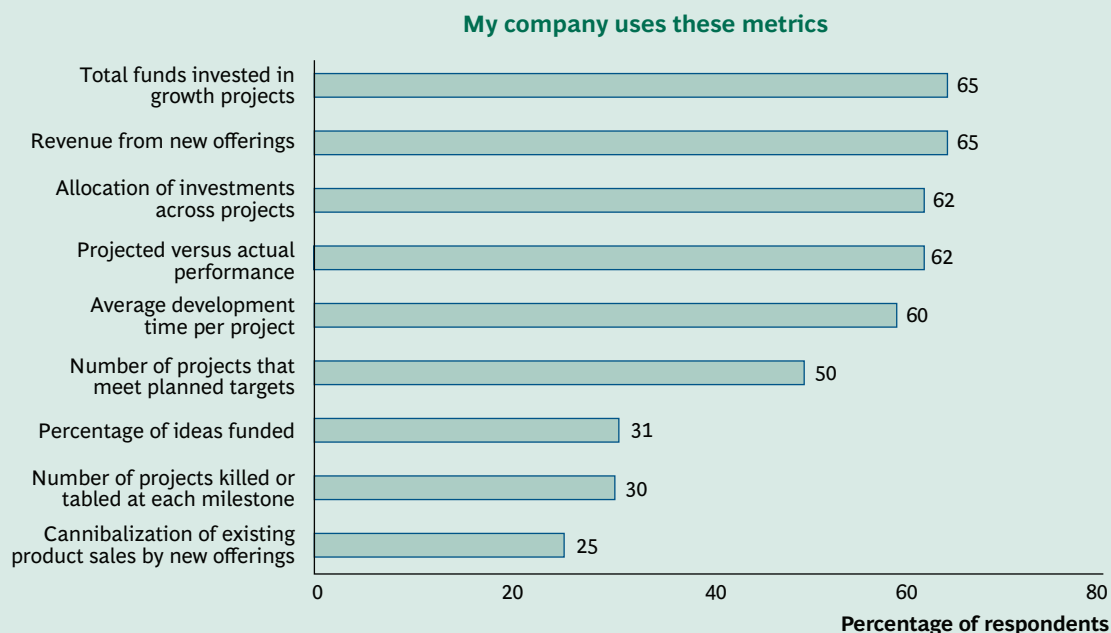


Exhibit 7. Total Funds Invested and Revenue from New Offerings Are the Most Widely Used Metrics



Source: BCG 2009 Senior Executive Innovation Metrics Survey.

new offerings. Allocation of investment across projects (62 percent), projected versus actual performance (62 percent), and development time (60 percent) are also widely used. At the other end of the spectrum are cannibalization of existing products (25 percent), the number of projects killed at each milestone (30 percent), and the percentage of ideas that get funded (31 percent).

Again we gave respondents a chance to write in any other metrics that they use. This netted a wide variety of responses spanning the full spectrum of innovation activities. A sampling includes gross revenues and contribution margin from each innovation, the number of senior inventors allocated to each innovation, the number of patents and awards earned by staff, the number of project-quality tests passed successfully the first time, and gains in market share.

We followed up with another question: If you were limited to a total of three metrics, which ones would you use and why? (See Exhibit 8.) The top answer, by a wide margin, was revenue from new offerings, chosen by a majority of respondents (56 percent). Reasons given included the following:

“We innovate to drive revenue growth.”

“Profitable growth is the main objective.”

“It shows the actual marketplace success of ideas carried forward.”

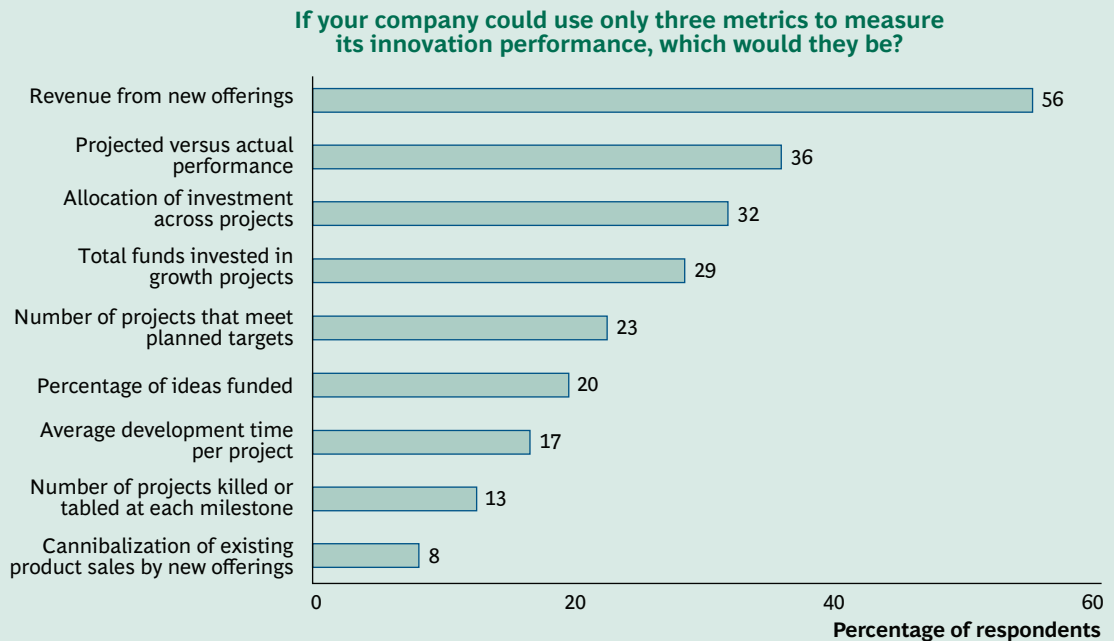
“It’s an easy metric to track and measure.”

Projected versus actual performance was the second-most-popular choice, although only 36 percent of respondents named it. No other choice netted more than a third of respondents’ votes.

Which Metrics Resonate the Most with Employees?

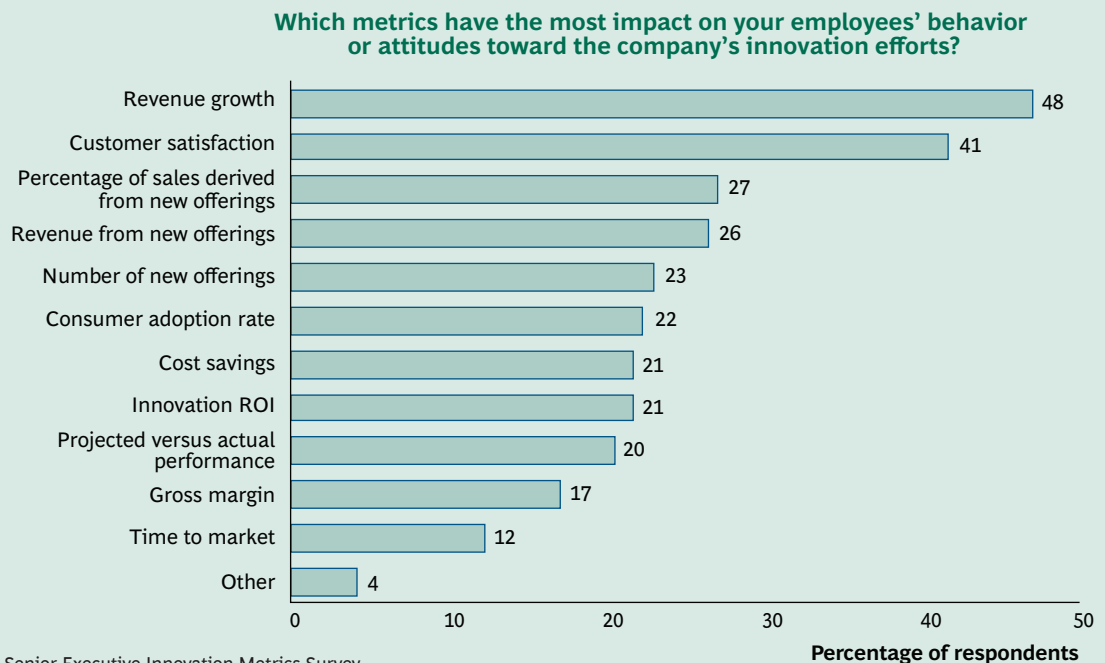
Not all metrics carry the same weight with employees. The two that most capture their attention—and influence their behavior and attitudes toward the company’s innovation efforts—are revenue growth (named by 48 percent of respondents) and customer satisfaction (41 percent). (See Exhibit 9.) Nothing else comes close. Interestingly, one of the metrics that employees focus on

Exhibit 8. Revenue from New Offerings Is Considered the Most Indispensable Metric



Source: BCG 2009 Senior Executive Innovation Metrics Survey.

Exhibit 9. Employees Are Most Influenced by Revenue Growth and Customer Satisfaction

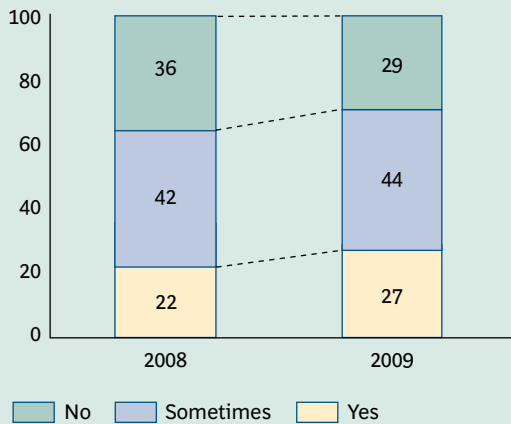


Source: BCG 2009 Senior Executive Innovation Metrics Survey.

Exhibit 10. Companies Continue to Underutilize Incentives—but There Are Signs of Improvement

Does your company tie incentives and rewards to its innovation metrics?

Percentage of respondents



Sources: BCG 2009 Senior Executive Innovation Metrics Survey; BCG 2008 Senior Executive Innovation Metrics Survey.

least is time to market (12 percent)—which is ironic, given that speed is consistently cited by companies as one of their top challenges in improving the return on innovation spending. (See our companion report, *Innovation 2009: Making Hard Decisions in the Downturn.*)

It should be noted that employees could readily be compelled to pay greater attention to specific metrics—or to the company’s entire suite of metrics—through incentives. But few companies make aggressive use of this lever. Only 27 percent of respondents said their company consistently ties incentives and rewards to its innovation metrics. (See Exhibit 10.) But there are signs of change, as the percentage of companies that do tie incentives to metrics nudged upward in 2009. Companies would do well to continue on this track, because every employee needs to be engaged and on the same page in order for innovation efforts to yield maximum payback. And maximizing payback is the name of the game.



Hurdles to Innovation Measurement—and How to Surmount Them

As our metrics surveys confirm year after year, most executives recognize the importance of measuring innovation rigorously, consistently, and effectively. Yet few companies follow through. Why?

Our experience suggests that there are three main reasons: companies do not know what to measure, they lack the information they need, and they doubt that measurement efforts will prove worthwhile.

What to Measure

The innovation-to-cash (ITC) process (all of the efforts required to take an idea and turn it into cash) comprises many activities. Not all of them can or should be tracked—the cost-benefit tradeoff does not warrant it. But there are specific elements of each company’s innovation efforts that do need to be measured. These will vary depending on the company’s specific innovation objectives and strategies. Not surprisingly, many companies struggle to identify what to target.

Thinking about the ITC process through the lens of inputs, processes, and outputs—and asking some targeted questions—can steer companies in the right direction. For example, questions relating to inputs might include the following:

- ◇ What financial resources are committed to the effort?
- ◇ What nonfinancial resources (including time and people) are committed?

Regarding processes, companies might ask:

- ◇ Are our processes too slow?
- ◇ Are they functioning as designed?

And questions regarding outputs might include:

- ◇ Are the new products, services, and improvements being generated through our innovation efforts actually helping the business?
- ◇ Are they helping to the degree we expected?

To answer these questions, a company needs several metrics in each area. Exhibit 11, which shows the measurement system used by one of our clients, a technology-based organization, gives an idea of what such a suite of metrics might look like. Of course, this system was designed on the basis of this particular company’s business strategy and objectives, typical project types, and innovation performance. It would not be suited to all companies, but it works quite well for this one.

Inputs. The company uses four metrics to gauge inputs. The first is the number of new ideas its people are generating. While our experience shows that most companies have no shortage of ideas, the fact remains that an idea is the launching point for every successful innovation. The company tracks this metric to make sure its pipeline remains full.

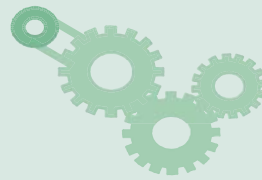
The second input measure is the investment each business unit makes in the different types of innovation the company pursues—incremental, expansionary, and breakthrough. Incremental innovation is largely aimed at maintaining the company’s current share in existing markets or decreasing production costs; expansionary innova-

Exhibit 11. A Technology Company Chooses Metrics to Optimize Its Performance



Inputs

- ◇ Number of new ideas
- ◇ Business-unit investments by type of innovation
- ◇ R&D as a percentage of sales
- ◇ Full-time technical staff and how (and where) it is used



Processes

- ◇ Idea to decision time
- ◇ Decision to launch time
- ◇ Projects by type and launch date
- ◇ Sum of projected net present values



Outputs

- ◇ Patents granted
- ◇ Launches by business segment
- ◇ Percentage of sales and profit from new products
- ◇ Innovation ROI

Source: BCG analysis.

tion is aimed at expanding share in the company's established markets through enhancements to existing products or the launch of new ones; breakthrough innovation is geared toward creating new products that allow for penetration into new markets. The company tracks these investments to make sure each business unit's portfolio is focused on its business needs and strategy.

The company also uses two metrics to assess the financial resources it is contributing to the innovation process. The first is R&D as a percentage of sales. This metric provides a ready way to make sure that inputs remain aligned with one of the most tangible results of innovation: revenue. It also allows the company to benchmark itself against the competition, as the R&D-to-sales ratio can be found in most companies' financial statements.

The second financially based input metric tracks another critical resource: people. The company found that one of the key factors limiting how well and how quickly it was able to commercialize its innovations was the number of technical people of different types that it had on staff and how they were being used. So it developed a metric that clearly shows the size and constitution of its technical staff and the projects on which these people are focused.

Processes. The company uses four key metrics to assess the performance of its innovation processes. Two of them deal explicitly with time and speed. The first is

“idea to decision time,” or the time it takes to move from idea generation to a yes or no decision on whether to proceed. The second is “decision to launch time,” or the time it takes to move from a “go” decision to the product's launch in the marketplace. The company found that these two elements, which together constitute the total cycle time for its innovation process, had distinct drivers and therefore warranted different measurements.

The third process metric looks at timing vis-à-vis different project types. The company wants to ensure that it develops all three types of innovation—incremental, expansionary, and breakthrough. And it wants a balance in the launch dates of innovations of each type.

Timing, we should note, is something that many companies underappreciate and therefore undermanage. In most companies, the marketing and sales organizations have very real limits on what they can absorb and execute in a given period. Recognizing this, another one of our clients has a limit of two product launches per quarter, which affords the commercial side of the company sufficient time to fully support each one.

The fourth key process metric is the sum of the projected net present values of projects in the pipeline. Although in some situations this would be considered an output metric, the company views it as a useful gauge of process, since it offers a dynamic view of both process speed and

timing and the overall financial ramifications of the innovation effort.

Outputs. Similarly, the company employs four metrics to assess innovation outputs. Interestingly, only two of them are financial. The first nonfinancial metric is patents granted. Patents are an often (and sometimes justifiably) maligned measure of innovation success. But they are a valuable indicator in some industries and for some companies, which should monitor them on an ongoing basis. The second nonfinancial metric is product launches by business segment. The company is committed to ensuring that the innovation process provides a robust pipeline of new products across each of its four segments. The company takes this a step further by also tracking innovations by type.

The first of the two financial metrics is the percentage of sales and profit generated by new products (or services). Like all companies that use this metric or a similar one, the company had to agree on what constitutes a new product. This debate can be intense and at times emotional, but it is an important one to have. Finally, the company uses a customized innovation ROI as its capstone metric. This metric takes into account the ultimate financial returns, the investments (both financial and nonfinancial) required to get them, the time it took to move from idea to decision to launch, and the cost of projects that were initiated but killed before launch. While many companies support the idea of an innovation ROI in theory, very few (only 21 percent) actually go to the effort of calculating and monitoring this critically important metric on an ongoing basis.²

Collecting the Necessary Information

The second reason why companies don't measure innovation as rigorously as they should is that they feel they don't have the necessary information. They know what needs to be measured but don't have the infrastructure required to do it.

Creating that infrastructure is critical, yet it can sometimes entail a substantial investment. It can also take months to complete. But there is no need to wait until the system is fully in place and then try to capture every desired piece of information. In fact, we believe it is important to start measuring as soon as possible, however crude the initial attempts may be. Just thinking through

which metrics to use has value in itself, and the information gleaned from the first measurements will yield critical insights that ultimately make the entire effort more effective. When it comes to launching a measurement program, delay is perhaps the greatest enemy. Most companies could do far worse than copying the measurement system shown in Exhibit 11 and getting started today.

Will the Measurement Effort Prove Worthwhile?

In some cases, executives believe that measuring innovation won't do any good. They may have tried it in the past, but they feel that nothing happened. And that may very well be true. But *why* didn't anything happen?

The potential reasons are many, but we find two to be the most common. First, companies measure the wrong things—or fail to measure the right ones. Second, the senior executive team fails to hold the organization accountable for its performance in the areas tracked by the innovation metrics.

Measuring the Right Aspects of Innovation. Again, efforts to measure innovation often yield little because the company fails to measure those elements that would make a difference. Our experience suggests that two elements, in particular, are routinely undermeasured, and the cost to companies is substantial.

The first is how fast the company's innovation processes work. In this year's BCG Senior Executive Innovation Survey, for example, fully 45 percent of respondents identified speed as one of the greatest challenges for their company, and 27 percent called it their greatest barrier to raising the return on their innovation spending. Yet most companies do not have effective measures of cycle time and speed across the entire innovation process and its component parts. As a result, these companies lack the information necessary to think holistically about the problems that arise.

The second frequently neglected area is the management of the company's innovation portfolio. This problem is often caused by the fact that most organizations do not have a *consistent, agreed-upon* set of criteria for evaluating individual projects or the portfolio as a whole. Without

2. BCG 2009 Senior Executive Innovation Survey.

agreement on what is important, it is almost impossible to develop the organizational processes and commitment necessary to measure effectively and make decisions at the portfolio level. We believe it is essential for companies to ask the following questions regarding their portfolio of projects:

- ◇ What financial results (for example, revenues and earnings before interest and taxes) will the portfolio deliver, both annually and in total, and with what expected or likely degree of variability?
- ◇ What is the required capital, given a variety of different business models?
- ◇ What is the mix of types of innovation (incremental, expansionary, and breakthrough) in the portfolio?
- ◇ What scarce resources will each project, and the portfolio in total, require and when?
- ◇ How much and what type of risk (market, technical, or executional) are we taking on?

Holding the Organization Accountable. To be effective, an innovation measurement program must have an impact on the thinking and behavior of employees. For that to happen, senior management must do two things. First, it must communicate the importance of innovation to the company and stress the connection between innovation and success in the marketplace. Unless that link is made clear (and repeated endlessly), employees will think the measurement system is unimportant.

Second, senior management must give teeth to its innovation metrics. The best way to do that is by linking metrics to compensation. This does not necessarily have to happen in the first year. But it should certainly be in the plan of any senior executive who is seriously interested in improving the company's innovation performance. (As noted above, only 27 percent of companies consistently link incentives to innovation metrics.)

Recently, one of our clients instituted an effective measurement program. Like most companies, this organization had traditionally paid its executives on the basis of growth (both revenue and profits) and value creation (such as economic value added or total shareholder return). To ensure that a much greater focus would be placed on innovation in the future, the company tied a portion of each senior executive's bonus to the percentage of value creation generated by new products and services. We find that this approach—that is, attaching an innovation component to an already well-established compensation plan, rather than completely overhauling that plan—is generally the most effective and the easiest to implement. It also has the advantage of being readily understandable to every employee.

Ultimately, improving a company's innovation performance comes down to leadership and leaders' willingness to put in place the necessary processes and tools to help employees deliver on the targeted objectives. In this respect, innovation is no different from any other company priority. And, like other things that matter, innovation can and must be measured—and linked to both financial and nonfinancial incentives—to ensure that it receives the attention and focus it requires.



Survey Methodology

The BCG 2009 senior management survey on innovation metrics and measurement, a follow-on to our broader 2009 survey on innovation, was completed by 170 executives and managers. Participation was voluntary and anonymous. The responses broke down as follows:

Region

North America	71
Europe	60
Asia-Pacific	36
Latin America	3
Total	170

Industry

Technology and telecommunications	44
Industrial goods and manufacturing	27
Financial services	15
Pharmaceuticals, biotechnology, and health care	15
Consumer products	10
Entertainment and media	10
Energy	4
Travel, tourism, and hospitality	4
Other	41
Total	170

Position

C level

Chief executive officer	23
Chief innovation officer or other head of innovation	9
President	7
Chief technology officer	5
Chief operating officer	4
Chairperson	3
Chief financial officer	3
Chief information officer	1
Subtotal	55

Other levels

Vice president of strategy	18
Director of strategy	17
Director of marketing	10
Director of R&D	10
Manager of R&D	9
Vice president of R&D	7
Vice president of marketing	6
Manager of marketing	1
Other positions	37
Subtotal	115
Total	170



For Further Reading

This survey is a 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 2009: Making Hard Decisions in the Downturn

A BCG Senior Management Survey, April 2009

Innovation 2008: Is the Tide Turning?

A BCG Senior Management Survey, August 2008

Measuring Innovation 2008: Squandered Opportunities

A BCG Senior Management Survey, August 2008

Tripling the Innovation Success Rate—with Less Effort

Opportunities for Action in Industrial Goods, February 2008

Payback: Reaping the Rewards of Innovation

James P. Andrew and Harold L. Sirkin
(Boston: Harvard Business School Press, 2007)

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