

Metrics for Innovation

How Companies Can Develop a Suite of Innovation Metrics to Combat Decay

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The past economic downturn, like those that preceded it, prompted wholesale reductions in force and postponement of capital investment. Such forms of retrenchment are often prudent in an unfavorable business environment. But, as some one-hundred years of historical economic data have demonstrated, retrenchment alone does not liberate companies from the boom-and-bust of economic cycles. Rather, and perhaps today more than ever before, companies must exploit their innovative capabilities¹ if they are to successfully confront the disruptive effects of emerging technologies, empowered customers, new market entrants, shorter product life cycles, geopolitical instability, and market globalization. Indeed, the development of innovative capabilities is the only means by which companies can sustain a competitive advantage.

Innovation, of course, is not a new management idea. In every industry, the leading companies are the innovators. Yet the cadre of innovators keeps changing. For example, in 1982, Tom Peters and Robert Waterman cited Amdahl, Texas Instruments, Eastman Kodak, and Maytag as exemplars in their business classic, *In Search of Excellence*. Twelve years later, *Built to Last* by James Collins and Jerry Porras found the elixir of success in a predominantly new cast of visionaries. Meanwhile, today's innovators such as Wal-Mart, Southwest Airlines, eBay, and the University of Phoenix are themselves relative newcomers.

Such high churn at the top suggests that the real problem isn't innovation—it's sustained innovation. Companies may chance upon a good idea that gives them an advantage for a while. But sooner or later (and usually sooner), they cede this advantage to a competitor who has chanced upon an even better idea. In recent years, companies have tried to address this problem by introducing innovation programs, typically in the form of new business development incubators. However, such programs rarely endure for more than two or three years and their budgets are usually among the first casualties of a drive to cut costs.

Until now, innovation, like advertising, has been somewhat of a black art. The clearest indication of its value came from the failure of companies who neglected it entirely. But the inference that innovation is necessary offers no guidance in how best to manage it. Managers currently lack the requisite metrics to make informed decisions about their innovation programs: They have only a vague sense of their company's overall innovativeness; they have little or no means to assess the effectiveness and efficacy of a particular innovation program; they have no tools with which to diagnose impediments—for example, fear of cannibalization within the existing business or a corporate culture that's excessively risk averse—in their innovation processes; chief financial officers and other senior executives are unable to accurately assess whether the company's innovation initiatives have the potential to fulfill investors' revenue and earnings expectations; and managers are ill-equipped to evaluate the innovative capacity of potential acquisition targets.

This article addresses such deficiencies. With focus on large corporations, it offers managers both general principles in the development of innovation metrics as well as specific metrics that they can begin to use immediately. We draw our recommendations from our experience with Strategos, an innovation and strategy consulting firm, and the Woodside Institute, a management research laboratory to promote organizational resilience and renewal.

¹ In this paper, our interest is strategic innovation i.e. the development of new products and services, new business models, and new business processes. While not discounting its value, we have less interest in the incremental innovation that merely enhances existing products and services or results in incremental cost reductions and productivity gains.

State of the Art

The art of measuring innovativeness is primitive. For lack of a less happenstance methodology, *Fortune* compiles its much-vaunted list of most-innovative companies by conducting an opinion poll of CEOs. Such rankings don't differentiate between hype and real innovation as the Enron débâcle showed. Given the importance of innovation as an engine of growth (Cooper and Kleinschmidt, 1995), it is surprising that many companies don't measure their innovativeness. Yet innovation metrics are important for at least two reasons: First, metrics help managers make informed decisions based on objective data, which is especially valuable given the long-term nature and risk associated with certain innovation projects. Second, metrics affect behavior. The right metrics can help align employees' personal goals with the best interests of the company (Hauser and Zettelmeyer, 1997).

Among those companies that do measure their innovativeness, most use R&D and product-development metrics only such as annual R&D budget as a percentage of annual sales, number of patents filed in the past year, percentage of sales from products introduced in the past year, and number of ideas submitted by employees. A number of academic articles address the issue of developing metrics for this kind of innovation (see Chiesa, Coughlan, et al, 1996; Hughes and Chafin, 1996; Demirag, 1996).

Though somewhat useful, these metrics offer a limited view of a company's innovativeness. They don't measure the company's overall innovation capability. In emphasizing technology development, they neglect business-concept innovation. And their focus on R&D and products makes them less suitable for service companies and companies outside the high-tech sector.

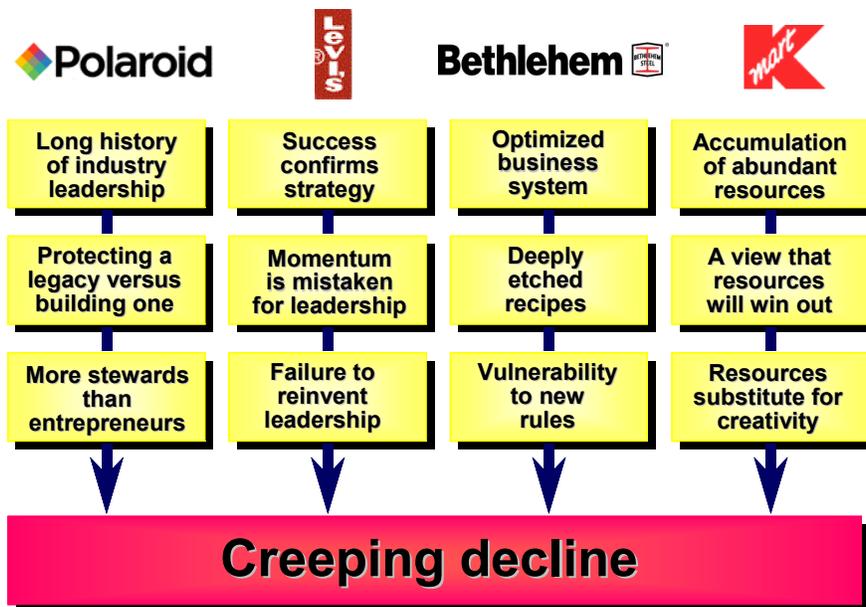
During the past year, we have built a suite of tools that overcome the foregoing limitations. These tools help finance executives assess their company's innovativeness and hence combat the insidious strategy decay that often afflicts a company's business (see box below).

Innovation: Fundamental Driver of Wealth Creation

Innovation may be particularly in vogue today. However, the most successful companies have long since known its value. Southwest Airlines—one of the few profitable players in a beleaguered industry—innovated by renegotiating the customer interface, offering a no-frills service in exchange for lower fares. Wal-Mart innovated by reconfiguring its supply chain. Other companies have succeeded by devising entirely new business concepts—for instance, eBay’s online auctions, University of Phoenix’s degree programs for working adults, and NetJets’s fractional ownership service to meet executives’ occasional needs for private jet travel.

In an effort to maintain a leadership position, companies who can’t innovate must buy innovation off the shelf. For example, as the fizz went out of the carbonated drinks market in recent years, Coca-Cola and PepsiCo rushed to acquire, respectively, Mad River Traders and South Beach Beverage Company—makers of alternative beverages such as bottled waters, juices, and teas laced with ginseng. Though sometimes effective in the short term, this strategy of innovation through acquisition usually fails because the acquiring corporation overestimates the value of synergies and underestimates the post-merger integration difficulties. In any case, innovation by acquisition is always at enormous cost, either in cash or stock, to the shareholders of the acquiring corporation. Shareholders see far higher returns when companies innovate organically.

As the figure below suggests, if companies are not able to maintain their ability to innovate, they will likely descend through one route or another into creeping decline. To this end, a heritage of innovation affords no protection. The four companies identified below each have a heritage of innovation. Yet among them, only Levi Strauss—itself engaged in a desperate restructuring effort—has so far evaded bankruptcy.



Source: Gary Hamel, Strategos

Innovation Framework

The framework (Figure 1) combines three views on innovation. These views accommodate a suite of metrics that help assess and develop a company's capacity for innovation.

- **Resource view.** Companies must balance optimization (tactical investment in the existing business) and innovation (strategic investment in new businesses). The resource view addresses the allocation of resources to effect this balance. The resource inputs are capital, labor, and time. Output is the return on investment in strategic innovation.
- **Capability view.** The capability view assesses the extent to which the company's culture supports the conversion of innovation resources (see resource view) into opportunities for business renewal. The inputs of this capability view are the preconditions for innovation i.e. the extent to which a company's skills, tools, and values are adapted to innovation. Outputs include growth platforms and strategic options.
- **Leadership view.** The leadership view assesses the degree to which a company's leadership supports innovation. As such, it evaluates leaders' involvement in innovation activities, the establishment of formal processes to promote innovation, and dissemination of innovation goals.

Innovation processes are an additional element of the framework. They comprise organizational structures such as incubators, innovation markets, venture funds, and innovation incentives. As Figure 1 suggests, innovation processes interlink the resource view and the capability view.

Figure 1—Innovation Framework

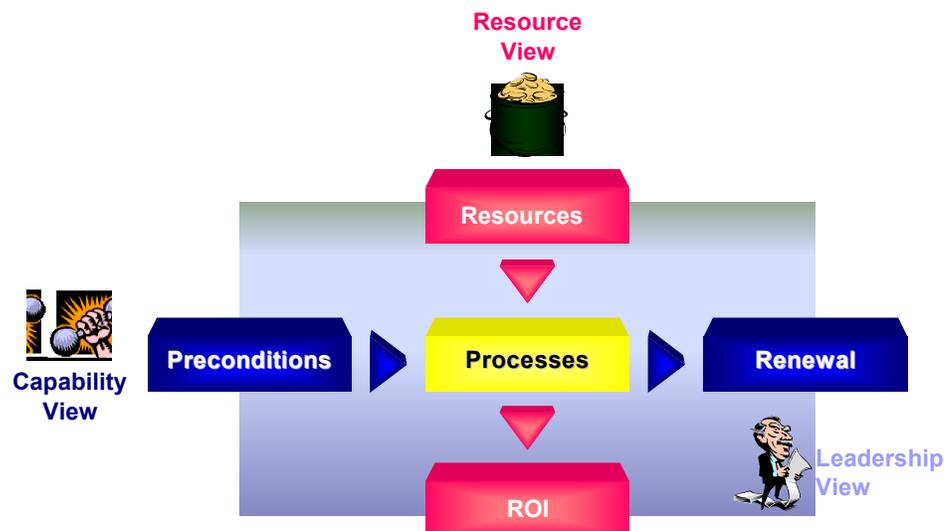


Table 1: Sample Metrics

Resource View
<p>Inputs: Capital, Talent, Time</p> <ul style="list-style-type: none"> ➤ Percentage of capital that is invested in innovation activities such as submitting and reviewing ideas for new products and services and developing ideas through an innovation pipeline ➤ Number of entrepreneurs in the company i.e. individuals who have previously started a business, either within the company or before joining the company ➤ Percentage of workforce time that is currently dedicated to innovation projects <p>Output: Return on investment</p> <ul style="list-style-type: none"> ➤ Number of new products, services, and businesses launched in the past year ➤ Percentage of revenue from products or services introduced in the past three years ➤ Share of wealth i.e. the change in the company's market value during the past year divided by the change in the total industry's market value during the same period
Capability View
<p>Inputs: Preconditions</p> <ul style="list-style-type: none"> ➤ Percentage of employees for whom innovation is a key performance goal ➤ Percentage of employees who have received training in innovation—for example, instruction in estimating market potential of an idea ➤ Number of innovation tools and methodologies available to employees <p>Output: Renewal</p> <ul style="list-style-type: none"> ➤ Number of new competencies that are under development ➤ Number of strategic options and growth platforms ➤ Number of new markets entered in past year
Leadership View
<ul style="list-style-type: none"> ➤ Percentage of executives' time spent on strategic innovation rather than day-to-day operations ➤ Percentage of managers with training in the concepts and tools of innovation ➤ Frequency with which the definition of the core business is reevaluated
Processes
<ul style="list-style-type: none"> ➤ Number of ideas submitted by employees in the past three, six, and twelve months ➤ Ratio of successful ideas to ideas submitted ➤ Number of ongoing experiments and ventures ➤ Average time from idea submission to commercial launch

General Guidelines for Selecting Metrics

As the breadth of sample metrics in Table 1 suggests, the number of potential innovation metrics is multitudinous. The optimal selection of metrics and the optimal value or “sweet spot” of any particular metric will vary from company to company. Clearly, one size does not fit all. And no

single metric can convey full meaning in isolation. Just as with the analysis of a company's financials, the analyst must look at several metrics in order to develop a comprehensive view of the company's innovation capability. Moreover, managers need to be mindful of unintended consequences that can result from over-emphasizing the importance of any one metric. For example, a metric that rewards individuals or groups for successfully developing an innovation project can lead to "not-invented-here" attitudes, resulting in innovation empires whereby individual or groups become overly invested in the success of their project at the expense of innovation projects elsewhere in the company (Hauser and Zettelmeyer, 1997). With these caveats in mind, consider the following general guidelines:

1. Build a comprehensive set of metrics. Include at least one metric for each of the six elements in the framework i.e. inputs (resource view), preconditions (capability view), wealth (resource view), renewal (capability view), leadership, and processes. With such a comprehensive set, you'll be more likely to detect problems (for example, a lack of leadership involvement or a bottleneck in the innovation process) before they become too serious.

2. Assess existing metrics. If your company is a veteran of innovation, other managers are probably already using innovation metrics. Assess whether these metrics suit your needs. In the interests of standardization, seek consensus on a set of metrics with other managers.

3. Avoid complex metrics. Ensure that the metrics are simple, meaningful, and intuitive. They will have greatest impact if they become a common currency throughout the company, from the boardroom to the shop floor.

4. Resist the temptation to track every conceivable parameter. Select a manageable set of metrics (no more than 8 to 10) and measure them diligently, disseminating the values as widely as possible.

5. Include at least one or two customer-driven metrics, which measure outcomes such as sales from new products, to complement the internally focused metrics such as the number of new competencies re under development or the percentage of workforce time that is dedicated to innovation projects. But avoid undue emphasis on customer-driven metrics otherwise the metrics will stifle innovation projects with a longer-term return on investment (Hauser and Zettelmeyer, 1997).

6. Reconcile metrics with existing methodologies. If your company uses a methodology such as value-based management or the Balanced Scorecard, reconcile your innovation metrics with that methodology. Even in the absence of such a methodology, ensure that your metrics encourage individual behaviors that aggregate to accomplish company-wide goals.

Specific Guidelines for Selecting Metrics

For companies that are just beginning to develop an innovation capability, we offer the following recommendations:

- **Inputs:** Focus on recruitment and training.
- **Processes:** Focus on creating an innovation pipeline process that attracts a large number of ideas and systematically selects the most promising ideas for further development.
- **Outputs:** Focus on defining and communicating innovation goals.

Innovation veterans might direct their efforts as follows:

- **Inputs:** Focus on incentives, team formation, staffing, and sustaining existing innovation processes.
- **Processes:** Focus on increasing the size and speed of the innovation pipeline and markets.
- **Outputs:** Focus on meeting innovation goals.

Metrics to Go: Beginners and Veterans

Managers should compile their own suite of innovation metrics with reference to the above guidelines. However, in the interests of a speedy implementation, we've compiled two suites for use by beginner and veteran companies (Figures 2A and 2B, respectively).

Figure 2A—Metrics for Beginners in Innovation

	Inputs	Processes	Outputs
Resource View <i>How much?</i>	What is the number of in-company entrepreneurs (people who have started a business in the company or before joining the company)?	Is there a process to generate and renew external and internal insights?	What is the "innovation revenue" per employee? (revenue from businesses that were created in the past 3 years)?
Capability View <i>How effectively?</i>	What percentage of employees have been trained in innovation?	How many different funding sources exist for innovation?	How many new competencies are being deliberately developed?
Leadership View	What percentage of employees recognize a strategic focus on innovation?	Is senior leadership directly accountable for the company's innovation processes?	What percentage of employees can identify the innovation targets?

Figure 2B—Metrics for Veterans of Innovation

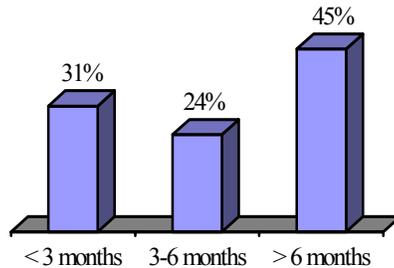
	Inputs	Processes	Outputs
Resource View <i>How much?</i>	How many "innovation mentors" are in your organization?	What is the average time from idea generation to venture launch?	What is the ratio of revenue from new businesses to revenue from established businesses?
Capability View <i>How effectively?</i>	How many incentive schemes are in place to support innovation?	How many new ideas enter the pipeline each month?	How many strategic options are being pursued today?
Leadership View	How often does the current business definition undergo reevaluation?	How much time is necessary for funding innovation decisions?	What is the dollar value of new opportunity domains relative to existing business revenue?

Benchmarks

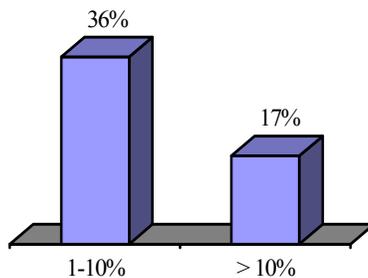
The following benchmarks draw from the results of a questionnaire that some 50 companies answered during the past year. Approximately half the companies had more than 10,000 employees and revenues of more than \$1 billion. 26% of the companies had more than 50,000 employees, and 32% of the companies had revenues in excess of \$50 billion.

We find that most innovators in companies we work with are anxious to know how they are doing. We present these benchmarks to address this need—and to give companies a starting point in developing targets. In each case, the percentages refer to the percentage of companies responding.

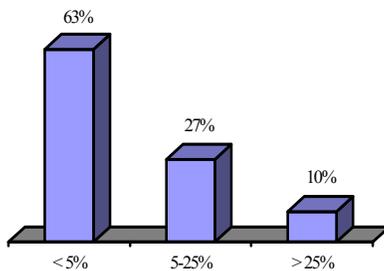
Time required from idea conceptualization to go-forward decision:



Percentage of management that is accountable for innovation in terms of allocated time (*note that less than half of all managers feel responsible for innovation at all*):

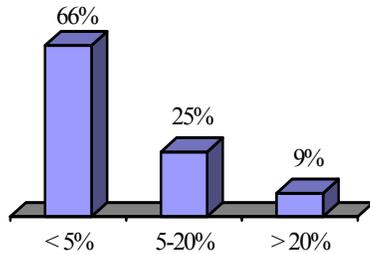


Percentage of employees that are currently involved (i.e. more than 50% of employee's time) in an innovation project:



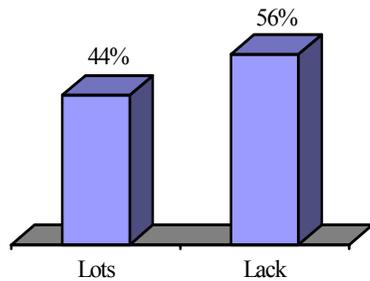
Benchmarks (continued)

Percentage of capital that is invested in radical innovation projects:

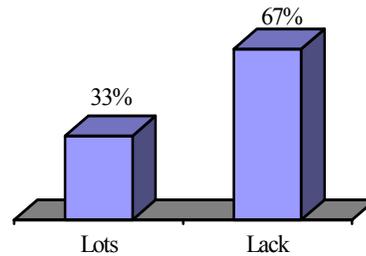


Characteristics of company's innovation pipeline today:

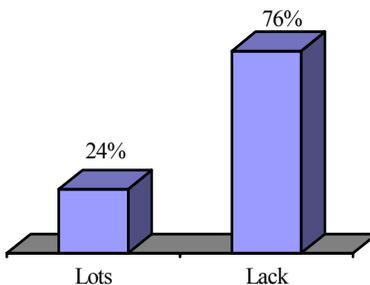
New ideas:



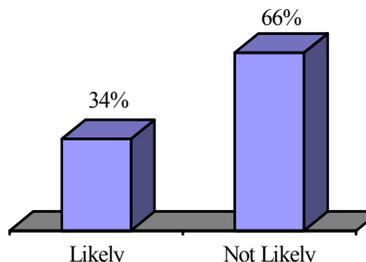
Innovative business concepts:



Promising new ventures:



Likelihood of meeting growth needs in next five years:



Source: Strategos Institute questionnaire

Future of Innovation Metrics

Aided by standard innovation metrics, managers, analysts, and investors will eventually be able to assess a company's innovation capability with as much facility as they can currently assess financial concepts such as market share, leverage, and economic value added. To this end, regulatory agencies may one day require companies to file audited statements that reflect their innovation capabilities. What better means for investors to assess the company's wealth-creation potential?

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