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SPOTLIGHT ON INNOVATION FOR THE 21ST CENTURY

Managing Your Innovation Portfolio

People throughout your organization are energetically pursuing the new. But does all that activity add up to a strategy?
by Bansi Nagji and Geoff Tuff

May 2012

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ABOVE
Ricky Allman,
Discovery, 2010
acrylic on panel
16" x 24"

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Innosight's Scott Anthony blogs about innovation at **blogs.hbr.org/anthony**.

PHOTOGRAPHY: COURTESY OF MARINE CONTEMPORARY

From the Editor

Innovation Without Tears

If we owned the exclusive rights to the term "innovation," we'd be billionaires. Every company, big and small, seems desperate to unlock the secrets to innovating, particularly at an affordable cost.

And so in this issue we showcase some of the latest thinking about how to innovate—without taking on excessive risk. In the lead article of our Spotlight "Innovation for the 21st Century," Bansi Nagji and Geoff Tuff of Monitor advise companies to create and rigorously maintain an "innovation portfolio." The goal is to manage total innovation across the organization, rather than rely on ad hoc, stand-alone initiatives to somehow take a company productively forward. Nagji and Tuff have looked at the companies that outperformed the S&P 500 and found that these leaders shared a pattern of innovation investment: 70% in enhancements to core offerings, 20% in adjacent moves, and 10% in transformational initiatives.

Also in this Spotlight, Anne Marie Knott of Washington University's Olin Business School introduces a metric that will help companies understand what kinds of returns they're getting on their R&D. Her "research quotient" allows managers to estimate the effectiveness of their R&D investments relative to competitors' and to see how changes in R&D spending feed into both the bottom line and the company's market value.

And take a look at the article by Tsedal Neeley of Harvard Business School, who tackles the controversial topic of whether companies should establish a one-language policy throughout their global operations. On the basis of her research, Neeley concludes that you ought to adopt English worldwide, and do so as soon as possible. There will be bumps along the road, but you can anticipate them and, if you follow some key principles, gain a competitive edge.

Adi Ignatius, Editor in Chief

PHOTOGRAPHY: ELIE HONEIN

Spotlight

ARTWORK Ricky Allman, *We Can See You*
2010, acrylic on panel, 12" x 16"

Bansi Nagji and **Geoff Tuff** are partners at Monitor Group and leaders of the firm's global innovation practice.

Managing Your Innovation Portfolio

People throughout your organization are energetically pursuing the new. But does all that activity add up to a strategy?

by Bansi Nagji and Geoff Tuff

PHOTOGRAPHY: COURTESY OF THE ARTIST

MANAGEMENT KNOWS IT and so does Wall Street: The year-to-year viability of a company depends on its ability to innovate. Given today's market expectations, global competitive pressures, and the extent and pace of structural change, this is truer than ever. But chief executives struggle to make the case to the Street that their managerial actions can be relied on to yield a stream of successful new offerings. Many admit to being unsure and frustrated. Typically they are aware of a tremendous amount of innovation going on inside their enterprises but don't feel they have a grasp on all the dispersed initiatives. The pursuit of the new feels haphazard and episodic, and they suspect that the returns on the company's total innovation investment are too low.

Making matters worse, executives tend to respond with dramatic interventions and vacillating strategies. Take the example of a consumer goods company we know. Attuned to the need to keep its brands fresh in retailers' and consumers' minds, it introduced frequent improvements and variations on its core offerings. Most of those earned their keep with respectable uptake by the market and decent margins. Over time, however, it became clear that all this product proliferation, while splitting the revenue pie into ever-smaller slices, wasn't actually growing the pie. Eager to achieve a much higher return, management lurched toward a new strategy aimed at breakthrough product development—at transformational rather than incremental innovations.

Unfortunately, this company's structure and processes were not set up to execute on that ambition; although it had the requisite capabilities for envisioning, developing, and market testing innovations close to its core, it neither recognized nor gained the very different capabilities needed to take a bolder path. Its most inventive ideas ended up being diluted beyond recognition, killed outright, or crushed under the weight of the enterprise. Before long the company retreated to what it knew best. Once again, little was ventured and little was gained—and the cycle repeated itself.

We tell this story because it is typical of companies that have not yet learned to manage innovation strategically. It demonstrates an all-too-common contrast to the steady, above-average returns that can be achieved only through a well-balanced portfolio. The companies we've found to have the strongest innovation track records can articulate a clear innovation ambition; have struck the right balance of core, adjacent, and transformational initiatives across the enterprise; and have put in place the tools and capabilities to manage those various initiatives as parts of an integrated whole. Rather than hoping that their future will emerge from a collection of ad hoc, stand-alone efforts that compete with one another for time, money, attention, and prestige, they manage for "total innovation."

Be Clear About Your Innovation Ambition

What does it mean to manage an innovation portfolio? First, let's consider how broad a term "innovation" is. Defined as a novel creation that produces value, an innovation can be as slight as a new nail polish color or as vast as the World Wide Web. Most companies invest in initiatives along a broad spectrum of risk and reward. As in financial investing, their goal should be to construct the portfolio that produces the highest overall return that's in keeping with their appetite for risk.

One tool we've developed is the Innovation Ambition Matrix (see the exhibit at right). Students of management will recognize it as a refinement of a classic diagram devised by the mathematician H. Igor Ansoff to help companies allocate funds among growth initiatives. Ansoff's matrix clarified the notion that tactics should differ according to whether a firm was launching a new product, entering a new market, or both. Our version replaces Ansoff's binary choices of product and market (old versus new) with a range of values. This acknowledges that the novelty of a company's offerings (on the x axis) and the novelty of its customer markets (on the y axis) are a matter of degree. We have overlaid three levels of distance from the company's current, bottom-left reality.

In the band of activity at the lower left of the matrix are core innovation initiatives—efforts to make incremental changes to existing products and incremental inroads into new markets. Whether in the form of new packaging (such as Nabisco's 100-calorie packets of Oreos for on-the-go snackers), slight reformulations (as when Dow AgroSciences launched one of its herbicides as a liquid suspension rather than

Idea in Brief

Firms pursue innovation at three levels of ambition: enhancements to core offerings, pursuit of adjacent opportunities, and ventures into transformational territory.

Analysis of innovation investments and returns reveals two striking findings. Firms that outperform their peers tend to allocate their investments in a certain ratio: 70% to safe bets in the core, 20% to less sure things in adjacent spaces, and 10% to high-risk transformational initiatives. As it happens, an inverse ratio applies to returns on innovation.

Although never the dominant activity, transformational initiatives are vital to a company's ongoing health, and firms must recognize that they demand unique management approaches.

- Talent should include a diverse set of skills and be able to deal with ambiguous data.
- Teams should be separated from day-to-day operations.
- Funding should come from outside the normal budget cycle.
- Pipeline management should focus on the iterative development of a few promising ideas, not the ruthless filtering of many.
- Metrics should recognize nonfinancial achievements in early phases.

a dry powder), or added service convenience (for example, replacing pallets with shrink-wrapping to reduce shipping charges), such innovations draw on assets the company already has in place.

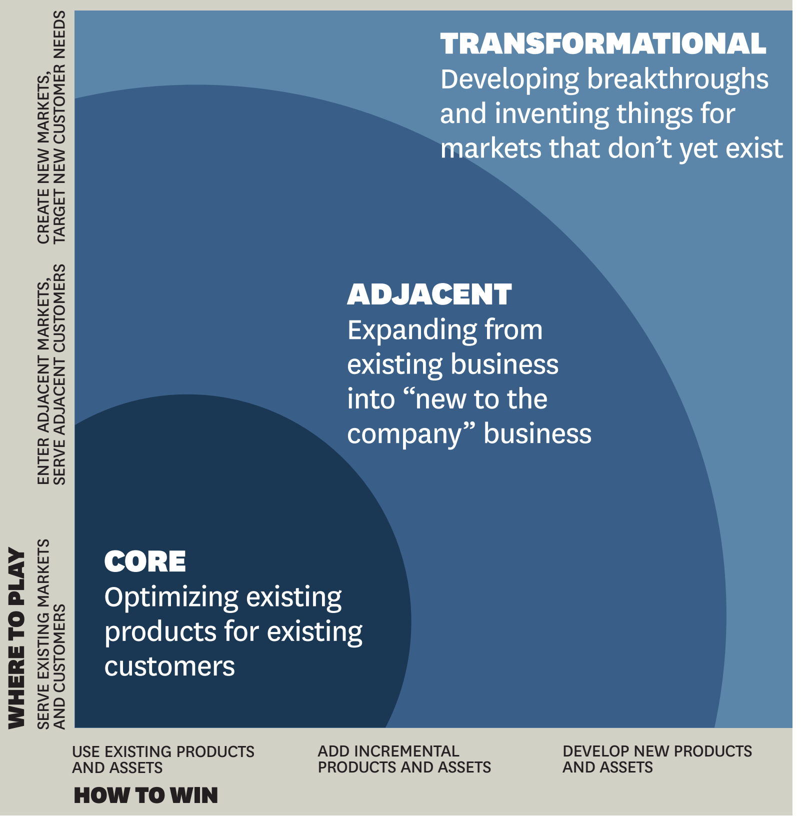
At the opposite corner of the matrix are transformational initiatives, designed to create new offers—if not whole new businesses—to serve new markets and customer needs. These are the innovations that, when successful, make headlines: Think of iTunes, the Tata Nano, and the Starbucks in-store experience. These sorts of innovations, also called breakthrough, disruptive, or game changing, generally require that the company call on unfamiliar assets—for example, building capabilities to gain a deeper understanding of customers, to communicate about products that have no direct antecedents, and to develop markets that aren't yet mature.

In the middle are adjacent innovations, which can share characteristics with core and transformational innovations. An adjacent innovation involves leveraging something the company does well into a new space. Procter & Gamble's Swiffer is a case in point. It arose from a set of needs P&G knew well and built on customers' assumption that the proper tool for cleaning floors is a long-handled mop. But it used a novel technology to take the solution to a new customer set and generate new revenue streams. Adjacent innovations allow a company to draw on existing capabilities but necessitate putting those capabilities to new uses. They require fresh, proprietary insight into customer needs, demand trends, market structure, competitive dynamics, technology trends, and other market variables.

The Innovation Ambition Matrix offers no inherent prescription. Its power lies in the two exercises it facilitates. First, it gives managers a framework for surveying all the initiatives the business has under way: How many are being pursued in each realm, and how much investment is going to each type of innovation? Second, it gives managers a way to discuss the right *overall* ambition for the company's innovation portfolio. For one company—say, a consumer goods producer—succeeding as a great innovator might mean investing in initiatives that tend toward the lower left, such as small extensions to existing product lines. A high-tech company might move toward the upper right, taking bigger risks on more-audacious innovations for the chance of bigger payoffs. Although this may sound obvious, few organizations

THE INNOVATION AMBITION MATRIX

Firms that excel at total innovation management simultaneously invest at three levels of ambition, carefully managing the balance among them.



think about the best level of innovation to target, and fewer still manage to achieve it.

Strike and Maintain the Right Balance

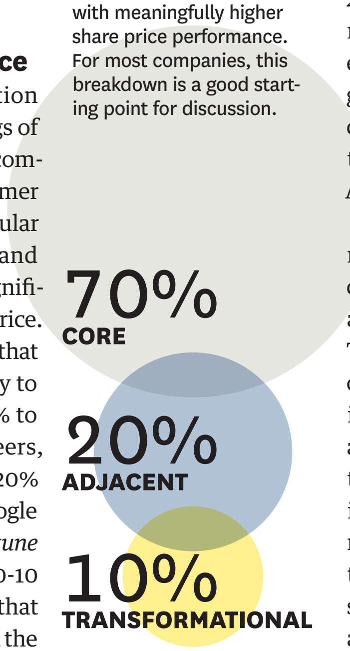
In contemplating the balance for an innovation portfolio, managers should consider the findings of research we conducted recently. In a study of companies in the industrial, technology, and consumer goods sectors, we looked at whether any particular allocation of resources across core, adjacent, and transformational initiatives correlated with significantly better performance as reflected in share price. Indeed, the data revealed a pattern: Companies that allocated about 70% of their innovation activity to core initiatives, 20% to adjacent ones, and 10% to transformational ones outperformed their peers, typically realizing a P/E premium of 10% to 20% (see the exhibit "Is There a Golden Ratio?"). Google knows this well: Cofounder Larry Page told *Fortune* magazine that the company strives for a 70-20-10 balance, and he credited the 10% of resources that are dedicated to transformational efforts with all the company's truly new offerings. Our subsequent conversations with buy-side analysts revealed that this allocation is attractive to capital markets because of what it implies about the balance between short-term, predictable growth and longer-term bets.

A second research finding adds more food for thought. In an ongoing study, we're focusing on more-direct returns on innovation. Of the bottom-line gains companies enjoy as a result of their innovation efforts, what proportions are generated by core, adjacent, and transformational initiatives? We're finding consistently that the return ratio is roughly the inverse of that ideal allocation described above: Core innovation efforts typically contribute 10% of the long-term, cumulative return on innovation investment; adjacent initiatives contribute 20%; and transformational efforts contribute 70% (see the exhibit "How Innovation Pays the Bills").

Together these findings underscore the importance of managing total innovation deliberately and closely. Most companies are heavily oriented toward core innovation—and must continue to be, given the risk involved in adjacent and transformational initiatives. But if that natural tendency leads to neglect of more-ambitious forms of innovation, the outcome will be a steady decline in business and relevance to customers. Transformational initiatives are the engines of blockbuster growth.

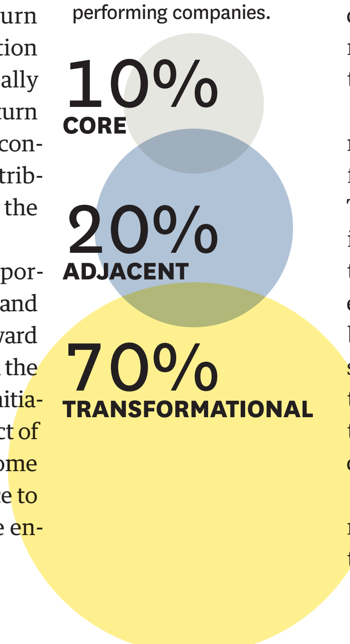
IS THERE A GOLDEN RATIO?

Analysis reveals that the allocation of resources shown below correlates with meaningfully higher share price performance. For most companies, this breakdown is a good starting point for discussion.



HOW INNOVATION PAYS THE BILLS

Among high performers that invest in all three levels of innovation, we find the following distribution of total returns. As it happens, this ratio is the inverse of the resource allocation ratio we discovered in high-performing companies.



Let us be clear: We're not suggesting that a 70-20-10 breakdown of innovation investment is a magic formula for all companies; it's simply an average allocation based on a cross-industry and cross-geography analysis. The right balance will vary from company to company according to a number of factors (see the exhibit "Different Ambitions, Different Allocations").

One important factor is industry. The industrial manufacturers we studied have a strong portfolio of core innovations complemented by a few breakouts, and they come closest to the 70-20-10 breakdown. Technology companies spend less time and money on improving core products, because their market is eager for the next hot release. Consumer packaged goods manufacturers have little activity at the transformational level, because their main focus is incremental innovation. Of these three sorts of businesses, industrial manufacturers collectively have the highest P/E ratio relative to their peers, perhaps suggesting that they are closest to getting the balance right—for them.

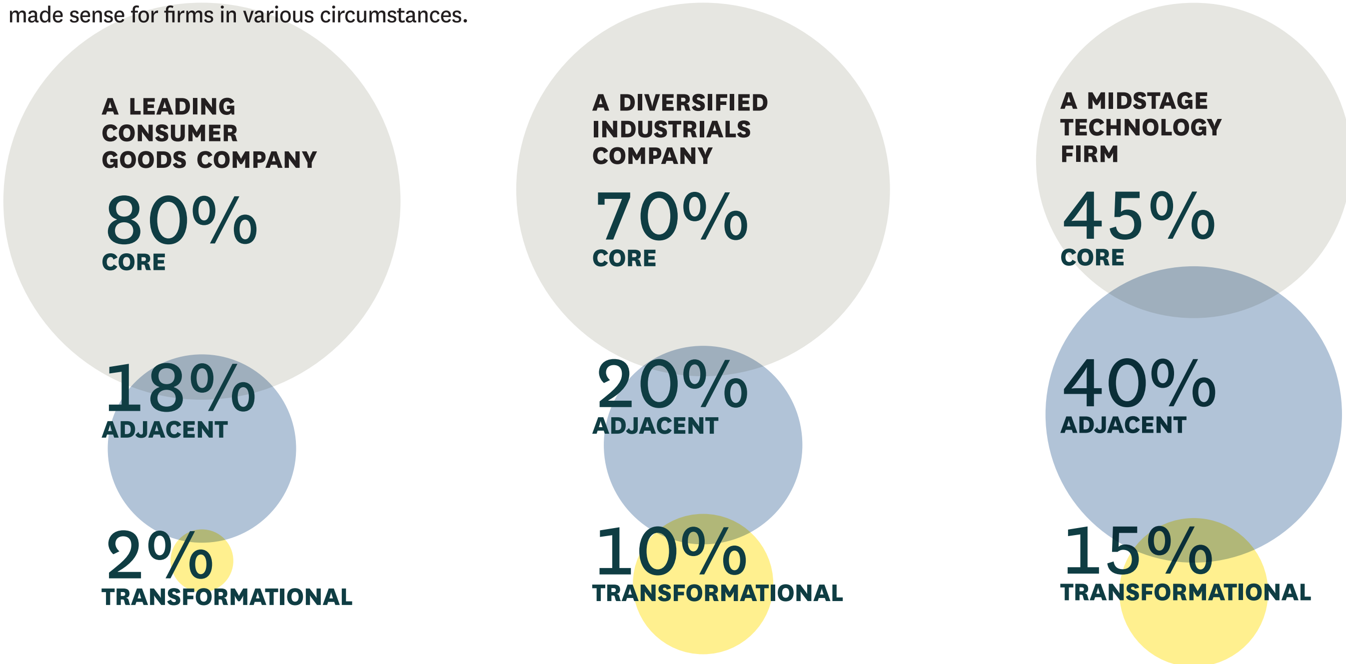
A company's competitive position within its industry also influences the balance. For example, a lagging company might want to pursue more high-risk transformational innovation in the hope of creating a truly disruptive product or service that would dramatically alter its growth curve. A struggling Apple made this decision in the late 1990s, effectively betting its business on several bold initiatives, including the iTunes platform. A company that wants to retain its leadership position or believes the market for its more ambitious innovations has cooled may decide to do the reverse, removing some risk from its portfolio by shifting its emphasis from transformational to core initiatives.

A third factor is a company's stage of development. Early-stage enterprises, especially those funded by venture capital, must make a big splash. They may feel that a disproportionate investment in transformational innovation is warranted, both to attract media attention, investors, and customers, and because they don't yet have much of a core business to build on. As they mature and develop a stable customer base, and as protecting and growing the core becomes more important, they may shift their emphasis toward that of a more established company.

The point is that a management team should arrive at a ratio that it believes will deliver better ROI in the form of revenue growth and market capitaliza-

Different Ambitions, Different Allocations

On average, high-performing firms direct 70% of their innovation resources to enhancements of core offerings, 20% to adjacent opportunities, and 10% to transformational initiatives. But individual firms may deviate from that ratio for sound strategic reasons. Here are three allocations we have seen that made sense for firms in various circumstances.



tion, should discover how far its current allocation is from that ideal, and should come up with a plan to close the gap.

Organize and Manage the Total Innovation System

Targeting a healthy balance of core, adjacent, and transformational innovation is a vital step toward managing a total innovation portfolio, but it immediately raises an issue: To realize the promise of that balance, a company must be able to execute at all three levels of ambition. Unfortunately, the managerial toolbox required to keep innovation on track varies greatly according to the type of innovation in question. Few companies are good at all three.

Companies typically struggle the most with transformational innovation. A study by the Corporate Strategy Board shows that mature companies attempting to enter new businesses fail as often as 99% of the time. This reflects the hard truth that to achieve transformation—to do different things—an organization usually has to *do things differently*. It needs different people, different motivational factors, and different support systems. The ones that get it right (GE and IBM are notable examples) have thought carefully about five key areas of management that serve the three levels of innovation ambition.

Talent. The skills needed for core and adjacent innovations are quite different from those needed for transformational innovations. In the first two realms, analytical skills are vital, because such initiatives call for market and customer data to be interpreted and translated into specific offering enhancements. Procter & Gamble, for example, deploys a cadre of 70 senior employees around the world to help identify promising adjacencies. These "technology entrepreneurs," as the company calls them, are responsible for researching a variety of sources, including scientific journals and patent databases, and for physically observing activities in specific markets in order to find new ideas that can build on P&G's core businesses. The company credits its technology entrepreneurs with uncovering more than 10,000 potential offerings for review.

Transformational innovation efforts, by contrast, typically employ a discovery and concept-development process to uncover and analyze the social needs driving business changes (what's desirable from a customer perspective), the underlying market trends (what kinds of offers might be viable), and ongoing technological developments (what is feasible to produce and sell). These activities require skills found among designers, cultural anthropologists, scenario planners, and analysts who are comfortable with ambiguous data. Thus, when Samsung

Rather than hoping that their future will emerge from a collection of ad hoc efforts, smart firms manage for "total innovation."

decided to compete on the basis of innovative design, it recognized that it needed new and different skills. The company moved its design center from a small town to Seoul in order to be closer to a valuable pool of young design professionals. It also teamed with a number of outside firms with strong design skills and created an in-house school, led by industrial design experts, to hone the abilities of designers who exhibited potential. The results speak for themselves: In a decade Samsung has garnered numerous design awards while evolving from a manufacturer of nondescript consumer electronics to one of the most valuable brands in the world.

Integration. Although the right skills are critical, they are not sufficient. They must be organized and managed in the right way, with the right mandate, and under the conditions that will help them succeed. One of the most important decisions will be how closely to connect the skills and associated activities with the day-to-day business.

In most companies, the majority of people engaged in innovation are working on enhancements to core offerings; they're most likely to succeed if they remain integrated with the existing business. Even teams working on adjacent innovations benefit from the efficiencies that come with close ties to the core business, assuming they're given the appropriate tools to take their work further afield.

However, as Samsung's move suggests, transformational innovation tends to benefit when the people involved are separated from the core business—financially, organizationally, and sometimes physically. Without that distance, they can't escape the gravitational pull of the company's norms and expectations, all of which reinforce an emphasis on sustaining the core.

Funding. Most efforts related to core and adjacent innovation are fairly small-scale projects that don't need major infusions of cash. They can and should be funded by the relevant business unit's P&L through annual budget cycles.

Bold transformational efforts typically require sustained—and sometimes significant—investment. Their funding should come from an entity (perhaps the executive suite, and ideally the CEO) that can rise above the fray of annual budget allocation. But companies should avoid the "innovation tax" approach, whereby the C-suite asks all areas of the business to contribute a percentage of their budgets to transformational initiatives (under the theory that innovation benefits the whole company, so everyone should support it). Business units rarely see their "contribution" as going to a good cause; they simply perceive that the corporate office is siphoning off 5% of their budgets, and come to regard the innovation team as the bad guys.

Companies might instead create a completely different funding structure for transformational innovation, one that's separate from the regular P&Ls of the business. An example is Merck's Global Health Innovation venture fund, a separate limited liability corporation that invests in interesting health care companies operating at the periphery of Merck's core pharmaceutical, vaccines, and consumer health businesses. The main purpose of the fund is to place bets on components of an evolved future business model for the company. It is also used on occasion to fund organic innovation initiatives, such as Merck Breakthrough Open, a crowdsourcing forum that solicits employee ideas for transformational growth opportunities.

Pipeline management. Any well-managed innovation process includes mechanisms to track ongoing initiatives and ensure that they are progressing according to plan. Companies typically rely on stage-gate processes to assess projects periodically, recalculate their projected ROI according to any changed conditions, and decide whether they should get a green light. But such projections are only as reliable as the market insight the company can glean. In the case of a core product extension, that insight is usually sufficient: Customers can say whether they would like a proposed product variant and, if so, how much they'd be willing to pay for it. However, if the innovation initiative involves an entirely new solution—one that customers may not even know they need—traditional stage-gate processes are dangerous. It's impossible to predict fifth-year sales for something the world has never seen before.

Moreover, whereas pipeline management for core or near-adjacent innovation involves gradually finding a small set of winners from among a vast number of ideas, the process is very different for transformational innovation. Here the challenge is to take a small number of possibly game-changing ideas and ensure that they emerge from the pipeline stronger. A company must spend sufficient time up front exploring what's possible, constantly expanding the options available in pursuit of the right big idea. In other words, transformational efforts are not generally managed with a funnel approach; they require a nonlinear process in which potential alternatives remain undefined for a long period of time. This is another reason why a stage-gate process is so lethal to transformational innovation: It results in the rejection of promising options before they are properly explored.

Metrics. Finally, there is the question of what measurements should inform management. For core or adjacent initiatives, traditional financial metrics are entirely appropriate. But using such metrics too early in transformational efforts can kill potentially great ideas. For instance, net present value and ROI calculations, commonly used to assess core and near-adjacent initiatives, require assumptions about adoption rates, price points, and other key variables—which in turn require customer input. Such input is impossible to obtain for something the world does not yet know it needs.

Managers should discuss thoughtfully where economic and noneconomic metrics, along with external and internal metrics, are most appropriate. Stage-gate systems operate at the intersection of *economic* and *external* metrics—they estimate how much money the company will make when its innovation is launched in the outside world. And, again, this combination is appropriate for evaluating core or near-adjacent initiatives on the basis of information that is obtainable and largely accurate.

Companies should use the polar opposite—a combination of *noneconomic* and *internal* metrics—to assess transformational efforts in their early stages; this can enhance the team's ability to learn and explore. For example, what if the only hurdle an initiative must clear to receive continued investment is that the company is likely to *learn* (not earn) from it? That is how Google has assessed transformational innovation from the start.

Eventually a company must focus on the hard economics of a transformational project. But that can wait until there's something ready to pilot and launch.

Moving Forward

Managing total innovation will require a significant shift for most companies, which are used to a less orderly approach. But the pathway to such discipline is clear. The first step is to develop a shared sense of the role innovation plays in driving the organization's growth and competitiveness. Managers should agree on an appropriate ambition level for innovation and find common language to describe it.

Next, it makes sense to survey the company's current innovation landscape. A comprehensive audit will reveal how much time, effort, and money are allocated to core, adjacent, and transformational initiatives—and how that allocation differs from the ideal ratio for the company in question. With the difference exposed, managers can identify ways to achieve the desired balance, usually by paring core initiatives down to those focused on the highest-value customers, encouraging more initiatives in the adjacent space, and creating conditions more conducive to breakthroughs in the transformational realm.

Throughout all this activity, leaders must communicate clearly and relentlessly about innovation goals and processes. There's no getting around the fact that to improve the overall return on innovation investments, managers must take a hard look at projects—all of which are attached to people who feel a sense of ownership and pride in them. The imperative is to identify and accelerate the most promising ideas and kill off the rest (some of which may be perfectly viable but don't represent the best use of resources). Open commitments and clear messaging will go a long way toward ensuring that the entire organization knows what is being decided by whom and why, and how those decisions will benefit the business over the short and long terms.

For many companies, innovation will remain a sprawling collection of activities, energetic but uncoordinated. And for many managers, it will remain a source of frustration. For the best managers, however, it represents the most exciting and important challenge of all. By figuring out how to manage innovation as an integrated system within overall portfolio goals, they can harness its energy and make it a reliable driver of growth.

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About Monitor's Innovation Practice

Monitor's Innovation practice helps leaders innovate by seeking out new growth opportunities, building new businesses, and embedding innovation capabilities into their organizations. The practice, which includes the world-renowned Doblin, comprises a broad range of specialist disciplines globally integrated with the rest of Monitor.

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