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by Loren Gary

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How to foster and manage the risk taking your company needs to get out of the doldrums

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CALAMITIES THAT COULD have been foreseen are a hot topic of current public-policy debates. They also figure prominently in managerial conversations, so much so that the innovate-at-all-costs attitude of the dot-com heyday seems to have vanished. To some extent, that's a good thing, because in the giddiness of the late 1990s many firms seemed to forget the distinction between a well-planned experiment and a roulette wheel.

But now the pendulum may have swung too far the other way. With recession now a fact, many firms have razor-thin margins of error; they simply can't afford costly mistakes. Not only are they squeezing processes and supply chains for every dollar they can, they're also scaling back their R&D budgets and pulling the plug on new ventures.

This risk-avoidance mindset is understandable but, paradoxically, it too carries a risk. Innovation is not a nice-to-have, even in a downturn, says Amy Edmondson, associate professor at Harvard Business School. "It's a necessity—in fact, companies may need it now more than ever." Discourage risk taking altogether, adopt a zero-tolerance policy on failure, and your company's ability to generate great revenue-producing ideas will dry up.

But of course, there are two kinds of failure. You can live with the calculated risks that don't pan out—these are failures from which your company ultimately benefits, whether it's in terms of improving existing products and services or identifying which new lines of business to avoid. You'll never be able to bring breakthrough ideas to market successfully unless your unit or company culture is able to tolerate a large number of such intelligent failures. But loosely defined, insufficiently monitored experiments have a way of spinning out of control—those are the failures you have to be able to avoid.

How do you foster the former while avoiding the latter? Creating a psychologically safe organizational culture—one that's conducive to the questioning, information sharing, and risk taking that innovation requires—is crucial, but it can also take a while. Better to "start small, in the self-contained environment of your own unit," says David A. Garvin, Robert and Jane Cizik Professor of Business Administration at Harvard Business School, and to establish ground rules for intelligent failure that can inform your experimentation while the cultural work proceeds.

Setting boundaries

In *Leading the Revolution*, Gary Hamel, founder and chairman of the consulting firm Strategos (San Francisco) and a visiting professor at the London Business School, makes a number of recommendations about how to engineer risk taking into your organization's DNA. Precisely because the failure rates are so high, he maintains, your innovation bank has to be stocked with lots of ideas, experiments, ventures, and new businesses. And you should manage each of these categories explicitly, the way a financial advisor manages an investment portfolio.

Useful advice, but it overlooks the other side of the coin. What companies need right now are guidelines to ensure that an experiment is worth the risk. "Intelligent failures minimize the organizational cost while maximizing the organizational learning," says Garvin. They have the following parameters:

- **They start with prior assumptions.** "If you go into an experiment saying, 'Let's just see what happens,' or if you haven't written down beforehand what your expectations are, it's unlikely that you'll learn anything from it," says Garvin. "You'll be too susceptible to what's called the hindsight bias—concluding that what happened in the experiment confirms what you were expecting all along."

- **They're relatively small.** "Failures that are really big have too many political repercussions." People's careers are put at stake, and the resulting tumult prevents the organization from learning from the experience.

- **The feedback loop is relatively short.** "It does you no good to launch a prototype and then wait three years to receive feedback about it. Market conditions and customers' needs will have changed too much in the interim. The ideal," says Garvin, "is to begin collecting information about your experiment within weeks, although some projects require longer."

Research on new-product development at Motorola (cell phones), General Electric (CAT scanners), Corning (optical fibers), and Searle (Nutrasweet) reveals the benefits of a "probe-and-learn process," a method of successive approximation through intelligent failure. As authors Gary S. Lynn, Joseph G. Morone, and Albert S. Paulson explain, these companies learned how to get the products right by bringing to market a product that was initially just good enough. They quickly refined the product in response to customers' comments and then iterated this feedback-and-improvement process numerous times.

The Palo Alto–based innovation and design services firm IDEO provides an excellent model for how to fail intelligently. "They've raised prototyping to the level of an art form," says Garvin. All their prototypes must meet what the

company calls "the rule of the 3Rs": they must be rough (for example, a styrofoam model of a telephone handset can be made quickly and cheaply, but it still enables you to test the handset's ease of use), rapid, and right (close enough to the desired form, function, and performance features).

Parameters tied to cost and duration can also help ensure that your failures will be intelligent. "If you fail quickly and inexpensively, that's a good failure, particularly if you discover that the assumptions about how the market will change or how customers' needs will evolve don't hold," says John Wilson, manager of the Atlanta-based Strategic Enterprise Fund (SEF), the private equity investment arm of UPS. He's not being facetious when he says that: the cost and the duration of the experiment are critical, but SEF doesn't set concrete, across-the-board targets for either. Part of the reason, says Wilson, is that, in contrast to many corporate venture-capital units, for whom financial returns are the highest priority, the SEF's primary mission is to bring knowledge back into the company. "We're looking to explore emerging technologies or new markets that have strategic importance to UPS's future," he explains. "Financial considerations are really at the bottom of our list of priorities." But they do come into play all the same. "We invest in the early stages of a start-up company, typically in the A or B round of financing. At that stage, the start-up's expertise is not widely known, so not only is the investment less expensive, there's also a greater upside potential."

Core competency figures prominently in UPS's deliberations about how to structure an experiment. If it falls within the company's core competencies, UPS's internal product development group tends to take responsibility for the project. But if the experiment is beyond those core competencies—say, developing software that could significantly improve UPS's service—the SEF helps those groups look for outside start-ups to invest in. The due-diligence process for vetting such partners includes such questions as, What will we learn from this investment that we wouldn't have learned otherwise? and, What is the viability of this start-up company's idea?

But perhaps the most important parameter UPS has, says Wilson, is the requirement that "each investment have an internal sponsor—some unit within the company that's willing to support the investment, usually by serving as an observer on the start-up's board." This stipulation ensures that the experiment is strategically important to UPS, thereby increasing the likelihood that the lessons learned—even if the experiment fails—will be valuable.

One such investment, in Moai Technologies of San Francisco, a maker of online auction software, has lost money. But the insights gained from the partnership have helped UPS improve the speed and efficiency of its own Web site. Another investment that's currently struggling involves Boston-based High-Point Systems, a maker of order-entry software that enables consumers to scan goods at home and create an online shopping list more easily. Investing in this start-up played a role in UPS's eventual determination that "the economics of home grocery delivery make it difficult for the delivery service provider to earn any money," says Wilson. The lessons learned helped UPS avoid a disastrous decision to enter that market, and depending on how the home office supply market develops, they may someday provide positive benefits as well, he adds. Although these investments haven't panned out from a financial perspective, they have boosted UPS's intellectual capital and helped it maintain a sound strategic course.

Freedom to fail "should not be confused with a license to commit foolish mistakes."

Investing in outside firms "lowers the personal risk to UPS employees," says Wilson, "because we're learning from the experience—and sometimes the failure—of entrepreneurs outside the company." If the experiment fails, it's less traumatic to write off the investment than it is to have to shut down an internal venture and lay off employees, he notes. That's true to a degree, but no company can survive by relying exclusively on outside partnerships or investments for all its innovation. Your internal culture needs to be supportive of calculated risk-taking activities.

Human psychology being what it is, most people tend to be overly optimistic about a project's chances of success going in. "You'd never get people to sign on to a difficult project if they didn't overinflate the odds of success," says Garvin. "Besides, in most instances, the project's riskiness doesn't become apparent until you're well under way."

Dorothy Leonard, William J. Abernathy Professor of Business Administration at Harvard Business School, agrees with Garvin's assessment. Nevertheless, she says, "it's important to make sure that the people above you in the organization understand there's some degree of risk associated with the project you're undertaking." Moreover, as she and coauthor Walter Swap note in *When Sparks Fly*, the composition and structure of your team should be matched to the degree of risk you're taking. With a project that's a big risk, for example, you're going to want a highly creative, intellectually diverse team and a team leader who's a heavyweight.

The foundations of psychological safety

Does risk taking flourish only in a stress-free environment? Not according to Edmondson's study of a large public utility in the mid-Atlantic region. Under tremendous pressure to cut costs, this organization laid off 25% of its staff and still found novel ways to be more productive. Under a new CEO's leadership, the utility benchmarked best practices in similar organizations, eliminated an entire layer of management (mostly through generous early-retirement packages), boosted the pay of most remaining workers, and gave them greater decision-

making flexibility by creating action teams charged with discovering cheaper ways of doing business.

The CEO's message to employees after the restructuring, was, says Edmondson, "'The situation is urgent, and we need *you* to turn it around.' He made it clear that the commission was in trouble and that things were going to have to change, but he also let the remaining workers know that they wouldn't be penalized for trying new approaches." This example underscores another hallmark of intelligent failures: they're nonpunitive. "Urgency and punishment really work at cross-purposes to each other, even if it doesn't seem that way at first," says Edmondson. "Employees can stand the pressure of declining revenues and the fear of impending job cuts as long as they are assured that their peers and bosses won't bite their heads off for taking appropriate risks."

One way to promote risk taking, writes Hamel, is to make sure that your company's metrics "focus as much on innovation and wealth creation as on optimization and wealth conservation." Another is to change your underlying assumptions about failure. "Most companies work on the assumption of perfection and infallibility," says Garvin. "They assume that if they're conducting 10 experiments, nine of them should be successful. But IDEO takes the position that if five of the 1,000 ideas it's testing pan out, that's an enormous success." You don't achieve excellence by planning for perfection—you do it by creating an environment that allows teams to make mistakes and to learn from them.

In "Speeding Up Team Learning" (*Harvard Business Review*, October 2001), a study of surgery teams' abilities to adapt to new technology that makes "minimally invasive cardiac surgery" possible, Edmondson and colleagues Richard Bohmer and Gary Pisano demonstrate how intelligent failure plays a role even in work where there's very little tolerance for error. "Much of the information about the patient's heart that the surgeon traditionally gleaned through sight and touch is now delivered via digital readouts and ultrasound images displayed on monitors out of his or her field of vision," they write. The teams that adapted to the new technology the fastest and the most effectively took advantage of trial and error. They were able to experiment "with new ways of doing things to improve team performance—even if some of the new ways turned out not to work." For these teams, such real-time learning "occasionally yielded insights that might have been lost had a team member waited" for a formal after-action review, which is such a critical part of much organizational learning. Indeed, a number of the practices that ended up being institutionalized as part of the new standard operating procedure were originally identified during the minute-by-minute reflection that characterizes a trial-and-error process.

Whereas the process of trial and error occurs in private when individuals learn, "on a team, people risk appearing ignorant or incompetent when they suggest or try something new," the authors continue. "Neutralizing the fear of embarrassment is necessary in order to achieve the robust back-and-forth communication" that innovation and real-time learning require. Here, the team leader's role is vital. On the most successful cardiac surgery teams, the authors found that the leaders served as "fallibility models": they were willing to admit their mistakes to the team. "The new technology requires team members to adopt a greater interdependence in order to work effectively," Edmondson explains. "With hierarchical teams, if you want everyone to be able to admit and discuss their errors when there's an opportunity to do so, if the leader isn't willing to go first, then the whole exercise is likely to fail."

When the leader models the assumption that failure is an inevitable part of the innovation process, everyone else on the team sees that it's really okay to make mistakes in the course of your work and to talk about them with your colleagues. They understand that real-time learning is a genuine organizational value, not just a snazzy catchphrase. But the freedom to fail "should not be confused with a license to commit foolish mistakes," writes Garvin in *Learning in Action*. "Accountability remains essential for effective performance, and no organization should embrace fuzzy or wrong-headed thinking. At GE, the difference is well understood. According to the head of leadership development: 'If your decision made sense, given the database you had at the time, you won't be hanged for it. If you made a bad decision and anyone could have foreseen it, nobody's very forgiving.'" ❖

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RESOURCES

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Loyalty Survey Results

Want to read about the results of the employee and customer loyalty surveys we conducted ("Satisfaction: The False Path to Employee Loyalty," *HMU*, October 2001)? Visit the *HMU* Web site at **www.hbsp.harvard.edu/hmu/surveyresults** to read more.