

http://www.businessweek.com/innovate/content/may2006/id20060510_682823.htm

BREAKING IT DOWN. So how does an old company stay so inventive? Larry Wendling, vice-president of 3M's corporate research labs at its St. Paul (Minn.) campus, thinks he knows. In fact, Wendling, an engineer who joined 3M right out of graduate school in 1977, has boiled it down to a seven-point list. You might call it "The Seven Habits of Highly Innovative Corporations."

1. From the chief executive on down, the company must be committed to innovation. One sure way to show that is with money. In 2005, 3M spent \$1.24 billion on research and development, or 6% of its \$21.2 billion in revenue. That's an unusually high amount for an industrial manufacturer. And of that R&D outlay, a fifth went to basic research or pursuits that have no immediate practicality. "If you're going to be an innovative company," Wendling says, "organic growth and new products have to be what drives the company."

2. The corporate culture must be actively maintained. Though 3M has had a new CEO every five years on average over the past 40 years, the philosophy of William L. McKnight, its inspirational leader from 1929 to 1966, is passed along by old-timers like Wendling to every new scientist or engineer. In a nutshell: "Hire good people and let them do their job in their own ways. And tolerate mistakes." Newcomers also quickly learn the stories of how 3M developed the first audio tapes, for instance, or Scotchgard. Tribes and peoples keep their cultures alive through oral histories; so does 3M.

3. Innovation is impossible without a broad base of technology. For instance, 3M claims to have leading know-how in 42 diverse technologies. That allows researchers to take an idea from one realm and apply it to another. For example, 3M scientists have used a technology behind layered plastic lenses to make more durable abrasives, more reflective highway signs, and golf gloves that allow you to get a tighter grip without squeezing as hard. Companies that remained "unidimensional," as Wendling puts it, typically run out of ideas after their first success.

4. Talk, talk, talk. Management at 3M has long encouraged networking -- formal and informal -- among its researchers. Wendling calls this 3M's secret weapon. The scientists themselves formed an organization called the Technical Forum in 1951. It invites all of the company's 9,700 R&D personnel to an annual symposium, where everyone can see what everyone else is working on. Labs also host their own conferences and Webcasts and elect representatives to a governing body to set policy. The formal structure enables researchers to get to know one another informally, as well, so they know whom to call for advice or to team up with on a project.

5. Set individual expectations and reward employees for outstanding work. The folks who call themselves 3Mers take pride in discoveries that lead to real-world products. Management reinforces this by fostering a dual-career ladder so veteran researchers can continue to move up without becoming managers. It also honors hundreds of employees -- nominated and selected by their peers -- for scientific achievements every year. And it gives the top 20 overachievers and their spouses a four-day holiday at 3M's corporate retreat in Park Rapids, Minn.

6. Quantify efforts. 3M tallies how much of its revenue comes from products introduced in the past four years to judge whether its R&D money is being spent wisely. That way management can assess which lab is hitting its mark and which may be falling short. After reviewing its data, the company centralized basic research from 14 centers around the world to its headquarters campus in 2003.

7. Research must be tied to the customer. Employees spend a lot of time with customers to understand what their needs are so they can go back to the labs to come up with valuable products. The Post-it Photo Paper came out of such research. While digital photography is easy, 3M researchers learned that most people store their images on a computer, which means they might have to scroll through them all to find a particular shot. And if consumers do print out their favorites, they often stuff them in a drawer, where they're just as hard to find. The solution: Photos that are as easy to display as a Post-it note.

Of course, results will vary. Still, Wendling says his points have made the difference at 3M. "We do think innovation is more than an accident," he says, "and that you can create the environment for innovation by paying attention to these seven things."