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3M Corporation

Founded in 1902, the Minnesota Mining & Manufacturing Corporation (3M) reported sales revenues of $16.7 billion during the year 2000. The company made more than 60,000 products that year. Nearly 35 percent of its total sales, or about $5.6 billion, came from products that had been introduced during the prior four years, and another $1.5 billion came from products introduced during 2000. These revenues stemmed from 3M's six business segments: industrial (tapes, abrasives, and adhesives); transportation, graphics and safety; healthcare (including medical and surgical supplies and closures for disposable diapers); consumer and office; electro and communications; and specialty materials. All six business segments were profitable in 2000. Asia Pacific, Europe, and Latin America achieved double-digit volume growth. Non-U.S. business represented 53 percent of total net sales and 63 percent of total operating income.

3M had identified 21 established and new strategic brands. Some of its best-known brands were Scotch® tapes, Scotch-Brite® cleaning products, and Post-it® repositionable products. Newer brands included Vikuiti™ display enhancement, Volition™ fiber optic network solutions, Command™ adhesive, and Nexcare™ first-aid products. More than 75,000 3M employees worked to create more than 500 new products every year.

3M had institutionalized a corporate culture that promoted intrapreneurship. The company was recognized for its vertical organizational structure, with businesses established by technologies and markets. Between 1985 and 2000, 3M's gross profit margin averaged over 48 percent. During this same 15-year time period, return on equity for the company averaged 22.2 percent. In *Fortune* magazine's annual survey of "America's Most Admired Corporations," 3M earned a top-10 ranking in 10 of the last 15 years; only three companies appeared more often. During 1985-2000, 3M also appeared on the *Fortune* top-three rankings for innovativeness more often than all other companies except Rubbermaid. Additionally, in 1995 3M was awarded the National Medal of Technology®, the U.S. government's top award for innovation.

Early in 3M's history, chair and CEO William L. McKnight, long considered to be the company's "spiritual founder," introduced policies and philosophies that were considered to be responsible for 3M's ability to innovate consistently (see exhibit 1). Current management has continued to embrace and expand these policies and philosophies, believing innovation to be the cornerstone of 3M's future success.

This case was written by Professor Vijay Govindarajan and Julie B. Lang T'93 of the Tuck School of Business at Dartmouth. The case was based on research sponsored by the William F. Achtmeyer Center for Global Leadership. It was written for class discussion and not to illustrate effective or ineffective management practices. Version: 5/20/2002.

Discussion Question

Evaluate the policies and philosophies of 3M from the standpoint of helping the company implement its strategy, rooted in innovation.

Exhibit 1. Selected Policies and Philosophies of 3M†

15 Percent Option: Many employees have the option to spend up to 15 percent of their workweek pursuing individual projects of their own choice. There is no need even to *disclose* the project to a manager, much less *justify* it.

30 Percent Rule: Thirty percent of business unit revenues must come from products introduced in the last four years. Business unit bonuses are based on how successfully each manager achieves this goal.

Dual-Ladder Career Path: There are two career ladders: a technical career ladder and a management career ladder. Both allow equal advancement opportunities, thus enabling employees to stay focused on their research and professional interests.

Seed Capital: Product inventors typically request seed capital from their business unit managers to develop new product ideas. If the manager refuses funding, inventors can take their ideas to any other business unit within 3M. If none of the business units will support the proposal, employees can approach the corporate office for a Genesis Grant. This grant awards employees up to $50,000 to conduct independent research, product development, and test marketing in areas of emerging technology. About 90 such awards are given each year. After securing seed capital, the product “champion” assembles a venture team to develop the product. Members of the venture team are not assigned; the champion must recruit them.

Tolerance for Failure: If the venture does *not* succeed, the team members are guaranteed their previous jobs. Company culture emphasizes that a failure can turn into a success; there is no punishment for a product failing in the market. 3M has developed a series of legends around famous failures that have subsequently created breakthrough products, perhaps most notably the weak adhesive that became the foundation for Post-it® notes.

Rewards for Success: As the venture achieves certain revenue goals, the team members receive raises, promotions, and recognition. One such recognition is the Golden Step award. This award is given if a new product is launched and reaches a revenue goal of $2 million in the U.S. or $4 million worldwide. Another recognition is the Carlton award, honoring technical employees who have made major contributions to 3M through fundamental technical innovation. The Carlton award is considered very prestigious—the “Nobel Prize” of the 3M community. After the new product exceeds a cutoff sales target, a separate department is created. After another cutoff, a separate business unit is formed. Business units are split up once they reach a size of approximately $200 to $300 million. Each business unit is run as a profit center. The product champion is given the opportunity to head the new business unit. Business unit managers are required to know the names of everyone who works for them. In general, nearly all 3M employees are entitled to the profit-sharing plan.

R&D Spending: 3M spends approximately 6–7 percent of sales on research and development and has consistently increased R&D spending over the last two decades. The R&D spending of 3M is, on average, twice that of a typical manufacturing company.

Three-Tiered Research:

Business unit Laboratories: Focus on specific markets, with near-term products

Sector Laboratories: Focus on applications with 3-to-10 year time horizon for product viability

Corporate Laboratories: Focus on basic research with a time horizon of as many as 20 years

Technology Forums: 3M supports formal and informal forums for sharing knowledge. Scientists from different laboratories are part of the Technical Council, which meets periodically to discuss progress on technology projects. In addition, scientists present papers in the Technology Forum, an internal professional society at 3M. Other mechanisms for technology sharing include extensive email directories, sharing of new products introduced by a business unit in the annual in-house trade show, and awards for successful sharing of new technology between business units.

Customer Contact: Scientists regularly meet with customers to learn how they use 3M products. Customers are also frequently invited to participate with 3M scientists in sessions aimed at generating product ideas.

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†These policies and philosophies are summarized in the following sources: James C. Collins and Jerry I. Porras, *Built to Last: Successful Habits of Visionary Companies* (New York: HarperBusiness, 1995), pp. 156-58; Ronald A. Mitsch, “Three Roads to Innovation,” *The Journal of Business Strategy*, September/October 1990, pp. 18-21.