

## Six Sigma Still Pays Off at Motorola

The company is thriving, with a culture that lets left-brain and right-brain types coexist

BY ROGER O. CROCKETT

IT MAY SURPRISE THOSE WHO have come to know Motorola for its cool cell phones, but the company's more lasting contribution to the world is something decidedly more wonkish: the quality-improvement process called Six Sigma. In 1986 an engineer named Bill Smith, who has since died, sold then-Chief Executive Robert Galvin on a plan to strive for error-free products 99.9997% of the time. By Six Sigma's 20th anniversary, the exacting, metrics-driven process has become corporate gospel, infiltrating functions from human resources to marketing, and industries from manufacturing to financial services.

It's still paying off for Motorola Inc., too. Consider the hot-selling, super-slim Razr phone. A creative, innovative design, sure. Yet "Six Sigma's stamp is all over the Razr," says Michael S. Potosky. Motorola's

corporate director of Six Sigma. Engineers, for instance, applied the process to the phone's antenna, helping keep it hidden while maintaining call clarity. With hits like the Razr, the Schaumburg (Ill.) company has climbed from a 15.4% market share in mobile phones to 22.4% over the past two years. Motorola netted \$4.6 billion on \$36.8 billion in revenues last year, helping it earn the No. 13 spot on the BusinessWeek 50 list of top corporate performers.

### COMEBACK

IT WASN'T ALWAYS THUS. In fact, Motorola stumbled in the late '90s, ceding its lead in mobile phones to Nokia. But one of the company's biggest feat in rebounding has been to allow the left-brain, analytical discipline of Six Sigma to coexist alongside the right-brain creative process without disrupting it. Six

Sigma, broadly speaking, expresses a way of thinking about business problems that encourages precision and predictability. The mantra of Six Sigma "black belts" is DMAIC, for "define, measure, analyze, improve, control." The "sigma" refers to the Greek letter, which in statistics is used to measure how far something deviates from perfection. The "six" comes from the goal to be no more than six standard deviations away from that perfect measure.

Innovation, by contrast, can be messy. It is hard to sum up in a simple statistic and requires a healthy tolerance of failure. "Innovation is, by its very definition, based on the idea that the value resides in the introduction of something unexpected," says Dev Patnaik, a principal at Jump Associates, a design strategy firm in San Mateo, Calif. When it comes to the breakthrough product, or the game-changing strategic shift, Six Sigma fans can "have all the wrong reflexes," says Rita Gunther

McGrath, a Columbia Business School management professor.

At Motorola, designers are left to do their thing, but the process wonks will be close at hand, to make sure a cool project meets a measurable customer demand and gets built to

quality standards. Unlike some companies newer to Six Sigma's esoteric methodology, Motorola has people who accept it as part of the culture. Veterans are used to so-called project hoppers offering input at various stages in product development.

Others agree that Six Sigma and innovation don't have to be a cultural mismatch. At Nortel Networks, CEO Mike S. Zafirovski, a veteran of both Motorola and Six Sigma stalwart General Electric Co., has installed his own version of the program, one that marries concepts from Toyota Motor's lean production system. The point, says Joel Hackney, Nortel's Six Sigma guru, is to use Six Sigma thinking to take superfluous steps out of operations. Running a more efficient shop, he argues, will free up workers to innovate.

That's clearly a seductive line of thinking: About 35% of U.S. companies have a Six Sigma program in place, according to a January, 2006, Bain & Co. study. "The past 20 years are evidence of how many companies have picked up that [it] works," says Potosky. But even a disciple like him stresses that in this era of the Big Idea, Six Sigma's success will only come in a culture that not only welcomes creative types and the metrics-obsessed, but one that makes them both better. •

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