Power dining worldwide ▪ Bre-X Babylon ▪ Free trade's near fiasco ▪ Jack Welch's latest passion at GE

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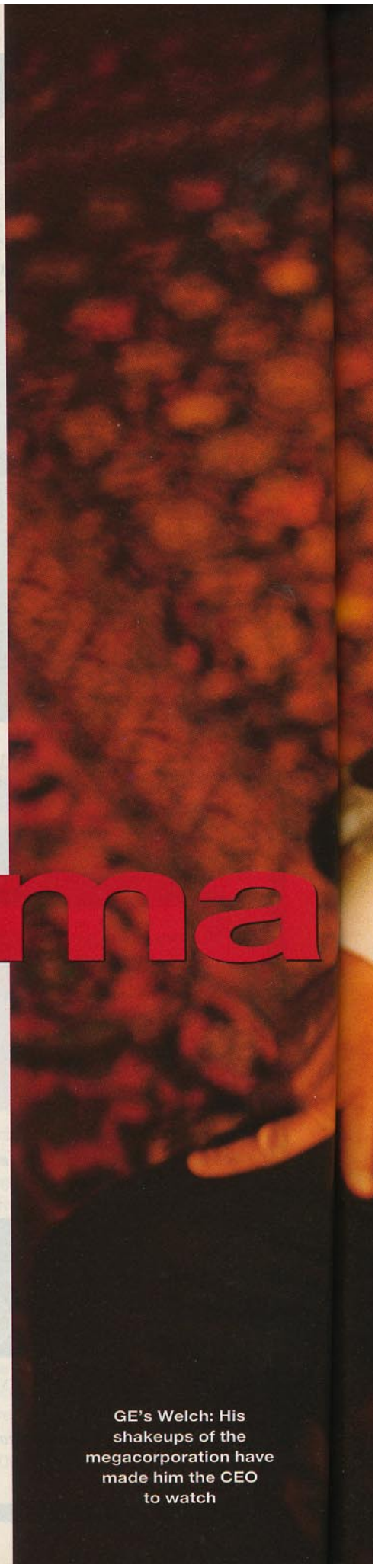
The Road to Riches in Kazakhstan

Hurricane Kumkol Munai is one weird oil company and the winner in Kazakhstan's epic privatization

It sounds like Greek to some, but the latest in quality management is attracting an impressive following. Corporate visionary Jack Welch is so enthralled, he's betting his legacy on it. **Ann Walmsley** investigates the cult of Six Sigma

Six Sigma

It is called Six Sigma and its practitioners are known as Black Belts. It may sound like a mystical art, but it is in fact a data-driven method for achieving near-perfect quality. And it is the latest mantra of Jack Welch, the brilliant, obsessive chairman and CEO of General Electric Co. (GE). In 16 years, Welch has built the Fairfield, Conn.-based conglomerate into the most highly valued company in the world, with a stock market capitalization of $200 billion (U.S.) (even though it ranks only 12th in the world in terms of revenues). This is particularly remarkable, given that conglomerates usually trade at a discount and GE's operations are a confusing mix ranging from credit card services to aircraft engine plants like the one in Bromont, Que., and from light bulbs, produced in Oakville, Ont., to NBC-TV. ◆ As a result, Welch's enthusiasms are closely followed by executives, as was seen when Welch's brutal restructuring of GE in the early '80s was emulated by CEOs globally. Now, the scrappy 61-year-old leader is counting on Six Sigma to be the grand finale of his career at GE, before his scheduled retirement in the year 2000. And in case you are

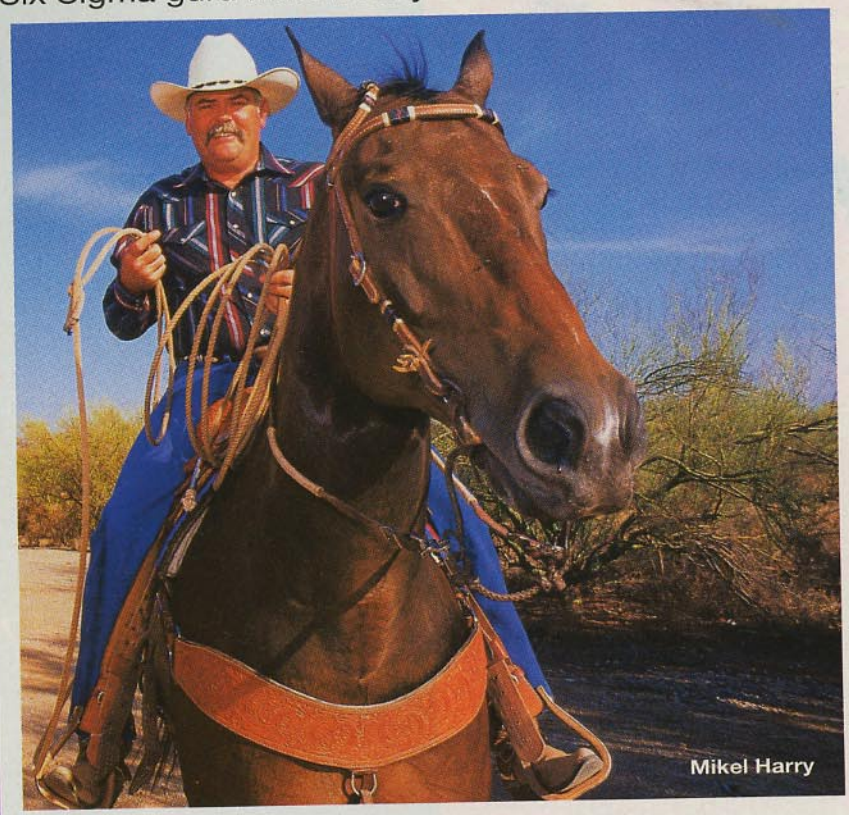


PHOTOGRAPH JOHN ABBOTT

GE's Welch: His shakeups of the megacorporation have made him the CEO to watch

Data Buster

Six Sigma guru Mikel Harry's ranch is a magnet for CEOs


Mikel Harry

Mikel Harry's grammar is sometimes corn pone, his mustache is a shade too gunslinger and his presentation style has the fire of a Southern Baptist preacher. But there is something about the hard ridin', steer ropin' 46-year-old ranch owner and his business partner, Rich Schroeder, that mesmerizes CEOs. Harry talks data. Pure unassailable data. He's an engineer and statistician who has transformed the mushy goal of quality into a method of breathtaking precision, with concrete financial results. The duo's client list includes Polaroid Corp. and Lockheed Martin Corp. Which means that Harry is very comfortable financially.

His wealth is evident in his steadily expanding spread, the Sigma Ranch, 140 kilometres north of Phoenix, Ariz., in the high desert of the Mogollon Rim. Only top executives, high-level Black Belt trainees and Wall Street analysts are invited to sessions at the ranch. Horsewhips decorate the walls of the log house. Picture windows afford a panoramic view of Harry's eight hectares, featuring scrub oak and juniper and populated by mountain lions, horses and deer. After dazzling and often confusing trainees and guests with Six Sigma statistics, Harry invites them outdoors to practice lassoing dummy metal steers, or to unwind at a cowboy biker bar at nearby Cave Creek. Harry and Schroeder relax by roping the real thing – wild steers. It's not unusual to see Harry at the front of the classroom the next day with bloodied arms and dusty cowboy boots. "Mike and I, we like to push the edge of the envelope," says Schroeder.

No one questions Harry's brilliance, but his originality is sometimes at issue. He was employed at Motorola Inc.'s government electronics division in Phoenix when he and several colleagues developed the Six Sigma methodology in-house in the early 1980s, using well-known statistical tools. He did not actually coin the name Six Sigma. Another Motorola colleague did that. And it was a client at Unisys Corp. years later who first compared the discipline with that of a karate black belt, which inspired Harry to certify trainees as "Black Belts" in Six Sigma. But Harry's technical finesse and speaking skills earned him the job of establishing Motorola's Six Sigma Research Institute at Motorola University. And by developing advanced Six Sigma engineering methods and writing several books on the subject, he legitimately packaged the technique as his own, in a format that could be adopted by other companies. By the time he left Motorola in 1993, the company claimed to be operating at nearly Six Sigma in most of its manufacturing operations. Harry took his know-how to Asea Brown Boveri Ltd., along with Schroeder, another former Motorolan. Later he and Schroeder struck out on their own as consultants (or "gurus," as Schroeder likes to say), founding their Six Sigma Academy in Phoenix.

Harry does not come cheap. The fee to licence his method and train a core group of Black Belts starts at $1 million (U.S.) and ramps up, based on the client company's gross revenues. Training each additional class of 25 Black Belts costs $150,000. He feeds subcontracts to nearly a dozen other former colleagues from Motorola who have set up two other Six Sigma consultancies, including Harry's neighbour, Mike Carnell, a former bull rider who is currently delivering Six Sigma training to Navistar International Corp. Canada employees at its truck plant in Chatham, Ont. Asked whether it is an accident of geography that so many Six Sigma consultants are cowboys, Carnell says, "No. It's just because we aren't smart enough to know when to quit. We want to reach Six Sigma in everything."

spending; faster new product development; greater customer satisfaction.... Six Sigma is like that old Wella Balsam shampoo commercial: 'She told two friends, and they told two friends,' and so on.... As Black Belt project leaders multiply and train more people, and those people get involved in projects, the financial impact is exponential, in our view."

Most companies operate at roughly Three or Four Sigma (66,800 to 6,210 defects per million). Each Sigma increase requires an exponential reduction of defects. The cost of that quality is typically 10% to 15% of lost revenues, which in GE's case, according to Welch, "amounts to some $7 billion to $10 billion annually, mostly in scrap, reworking of parts and rectifying mistakes in transactions." Motorola Inc., which was the birthing place of Six Sigma more than a decade ago, now averages about 5.6 Sigma (20 defects per million) and has saved $11 billion to date and tripled worldwide productivity as a result. Most commercial airlines' safety procedures operate at a Six Sigma level. Reiner estimates that GE averaged Three Sigma when it introduced its Six Sigma program. In the first 22 months, it improved to about 3.5 Sigma (22,700 defects per million). To reach Six Sigma by the year 2000, it will have to improve by more than 90% per year.

PHOTOGRAPH MICK PALADIN