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Fred Jaekel gets some of his best ideas just by looking at gadgets and wondering how they're made. In early 1993, for instance, he took a long look at plumbing parts just lying around his house. Jaekel, who'd dropped out of school at 13 to pursue his passion for racing cars and bending metal, wondered how they were made. He was told by an engineer at work that he thought the T-joints had been shaped by water using a 50-year-old process called hydroforming. Just as air is blown into liquid plastic to make plastic bottles, water under pressure is used to shape steel.

Jaekel could see the possibilities. At Magna International Inc., where he has held several executive positions, Jaekel had a penchant for unusual ideas. For example, he'd always dreamed of making auto parts out of tubes, the way racing cars are made. Maybe hydroforming could be used on a larger scale to make auto parts.

That thought came to mind later that year when Jaekel's boss, Magna founder and CEO Frank Stronach, handed him one of his toughest assignments -- turning around Cosma International Inc., the firm's money-losing metal-stamping division. Cosma made auto parts by mechanically crushing and slicing metal sheets with the brute force of 1,000- to 3,000-tonne machines, creating pieces that could then be welded together to make parts such as rocker panels. It wasn't very efficient -- 25% of the metal landed in the scrap heap -- but it had always been done that way.

Jaekel could have fixed Cosma largely by cutting costs, but he was more inclined to tinker with operations, just as he'd done at Magna's car-seat division and the engine and transmission group. And remembering his plumbing epiphany, Jaekel visited his boss at Magna's Viennese castle-style head office north of Toronto to propose something different: instead of using a machine to shape metal, why not use water?

That idea led to a whole new way of making auto parts and helped catapult Magna into the ranks of the world's top-10 auto-parts suppliers. Although Magna doesn't break out Cosma's sales figures, the money-losing subsidiary Jaekel inherited now accounts for the lion's share of the "metals and other automotive operations" that last year provided 30% of Magna's \$10.5 billion in sales and 43% of its \$849 million in operating earnings.

Innovation clearly pays, and people like Jaekel are crucial to the cause. He's one of those rare individuals who commit acts of "creative destruction," as the Harvard economist Joseph Schumpeter once put it. He took something old and applied it in a new way. Hydroforming was a classic innovation that disrupted the market, and at least temporarily demolished the competition.

Politicians and businesspeople say we don't have enough Fred Jaekels. If we did, Canada's productivity wouldn't be barely 80% of what it is in the United States, and personal disposable income might be more than 71% of the U.S. level. But Canada's dismal innovation record has deeper roots. As Royal Bank of Canada CEO Gordon Nixon

said this spring, "Too many Canadian business leaders -- in small, medium and large companies -- lack the culture of innovation to take their companies to the next level."

The key phrase is "culture of innovation." Jaekel managed to introduce hydroforming to the auto-parts business because he worked in a corporate culture that promoted original thinking. The same is true for other successful innovators such as Research In Motion Ltd. and Cirque du Soleil. They're in different businesses, but they've created cultures that promote new ideas -- instead of crushing them with bureaucracy, rules and incentives that reward the sure thing. Jaekel's story, and theirs, are instructive.

Stronach, who built Magna by taking risks and embracing new ideas, didn't laugh when Jaekel said you could bend metal with water. Jaekel, like Stronach, was a tool-and-die maker, and had proven his worth to the company in the past. Despite the periodic combativeness in their working relationship (on one occasion, Stronach fired Jaekel for insubordination, only to recant with a public apology in front of Magna's board of directors), Jaekel says there was a mutual trust. "Frank and I are very similar," explains Jaekel, who at 50 still has wavy blond hair, a weathered face and the powerful build of an auto machinist. "He's strong-minded and so am I," he says with an accent that still carries traces of his German-Argentinean background. "I stand up for what I believe in."

Now Jaekel was a believer in hydroforming. He told Stronach he had just come back from Aalen, Germany, where he had visited the manufacturer of the plumbing parts that had so intrigued him. The German engineers had explained that hydroforming used intense water pressure to expand metal tubes to fit the contours of molds. As they talked, Jaekel realized hydroforming could work on a larger scale, that it could produce lighter, stronger and cheaper parts, with only 2% of the metal ending up on the scrap pile.

Still, it was a stretch, even for Stronach. Hydroforming had never been used to make auto parts, and there was no guarantee that customers like DaimlerChrysler AG and General Motors Corp. would buy in. But Stronach understood the concept -- and he took a chance. "He said, 'Well, Fred, if you think you can bring it to market, keep me updated on the progress with the customer, the development of the product.'" So Magna paid a small sum, about \$1 million, for the German company and launched a new hydroforming business that would change the way auto parts are made.

Jaekel's proposal might have been dismissed in a corporate culture in which management attempts to increase profits by duplicating proven products, improving a sure thing or simply cutting costs. Understandably, many managers are wary of innovators like Jaekel. The new thing might fail and hurt their careers. Even if it succeeds, it might undercut their core business. It will probably offend hierarchies in the company built around the sure thing. It may also upset shareholders, who want to see profits rise rather than having capital diverted to some crazy new venture.

Small, entrepreneurial companies don't have to deal with some of these barriers to innovation, which is why they tend to produce breakthroughs more often than their larger counterparts. Yet in the auto-parts business, the new thing came from Magna itself, an

international company that today has over \$10 billion in sales. Under Stronach's management, Magna promoted new ideas instead of squashing them under the weight of a centralized bureaucracy. "Magna empowers their people to break the rules," says Chris Johnsen, Canadian automotive industry specialist at Deloitte & Touche LLP. Management "allows free thinking and experimentation. It allows people to make mistakes without dire consequences," he says. Lean and decentralized, Magna never built up a bureaucracy, which often insulates the leader and delays or shuns new ideas, especially risky ones from entrepreneurial fanatics. Stronach trusted his executives and plant managers to run their businesses without interference, even though it nearly led the firm to bankruptcy in 1990, when plant managers helped to pile up US\$1 billion of debt, equivalent to 4.5 times stockholders' equity.

But Stronach's hands-off technique was great for people with fresh ideas. "He gave me full freedom," says Jaekel. "If they see you can make money, they leave you alone. If it wasn't for the freedom Magna gave me, I wouldn't be who I am right now. That's what made Magna grow: freedom."

Creative thinkers in many lines of business say the same thing: Make sure you hire creative people and just leave them alone. Let them experiment, fail and try again. Eliminate bureaucracy and the elaborate screening systems that kill potential innovations.

A case in point is the invention of the BlackBerry, the handheld wireless communications device created by Research In Motion of Waterloo, Ont. RIM's co-founder, Mike Lazaridis, certainly didn't know what he was looking for when he and his partner began the company in 1984. The Internet as we know it didn't exist. Businesspeople on the road had to rely on pay phones and hotel phones. Lazaridis could hardly envisage a world where you could use a little black device to communicate by e-mail or phone, or jack into the Internet. "You have no idea where you're heading," he says. "There's no way anyone can be certain what they're going to build 10 years from now."

As a digital explorer, Lazaridis had no map, but he did have a lot of intellectual horsepower at RIM, thanks to the University of Waterloo, where he studied electrical and computer engineering. "Education is what gave us the tools, the confidence and the inspiration we needed to go out and create things, to be our own masters," says Lazaridis, a chunky man with silver hair and a soft voice. "There's no direct path, and anyone who thinks there is a direct path is mistaken."

After dropping out of fourth-year engineering to kick-start RIM, Lazaridis looked for cool things to do and just did them. First he built computers and wrote software. He and his partner, Douglas Fregin, RIM's vice-president of operations, ploughed whatever money they had into the best computer equipment they could find. They made electronic signs, moved on to digital film counters and, working with the National Film Board, created the DigiSync Film Keycode Reader, which reads, decodes, indexes and retrieves information stored in bar codes on the edge of motion-picture film. DigiSync was used in movies like *Lost in Space*, and unlike the movie, DigiSync won an Oscar (for technical achievement).

Then Lazaridis got lucky -- but more important, he saw an opportunity and pounced. In 1987, a Rogers Cantel Inc. executive David Neale took him down to a windowless office to show him a wireless communication system -- a Mobitex 709 radio modem and auto car kit with external power supply and antenna -- manufactured by Ericsson, the Swedish telecom supplier.

"There were all these cables, radios, antennas, boxes and documentation along the wall," says Lazaridis. Rogers Cantel, he adds, needed someone who could help it figure out how to make everything work and then go on to write software to interface it to a computer. Fortunately, Neale was Swedish and could read the manuals so they were quickly able to put the system together.

"[The Mobitex] did not inspire me," continues Lazaridis. "It was a jumble of wire and connection boxes. Calling it a wireless solution was an oxymoron. In fact, it offered me an opportunity to make the technology easier to use. This is when we decided to get into wireless data technology."

Opportunities like this, he says, "is what any entrepreneur is looking for. Something that people don't understand, with lots of inefficiency and problems to solve. There's real value in those problems to solve because big companies are trying to use that technology."

That hour in the basement with the Mobitex would eventually lead to the invention of the BlackBerry, which faced several hurdles of its own, one of them being how to handle the miniature keyboard. Lazaridis picks up a competitor's keyboard to explain the problem: "We realized that keyboards like this are too big to thumb-type and too small to touch-type, so they're really useless. We discovered that if you make it smaller, it's easier to use." However, changing the size of the keyboard created a new problem -- shape. Thumbs can't easily reach all the letters on a standard keyboard layout of four parallel horizontal lines. During the trial and error period of design, Lazaridis was studying keyboard designs in his kitchen while feeding his son, who was dribbling all over the papers. The distraction helped. Suddenly it hit him: split the keyboard down the middle so that the thumbs can move naturally in a semicircle. So RIM redesigned it to arrange the keys in a wide arc instead of straight lines, and they minimized the number of keys. It was another classic innovation: Lazaridis saw a traditional keyboard, and improved it by looking at it in a different way.

Today, RIM is the undisputed leader in the corporate wireless e-mail market, with more than 350,000 BlackBerry users in more than 14,000 organizations worldwide. RIM has rivals in the form of Handspring and Palm, Inc. And a new entrant, Good Technology, Inc., launched its corporate e-mail product this spring, illustrating RIM's need to keep innovating. Still, there's room to grow, since less than 3% of the 60 million mobile workers in the U.S. have wireless e-mail. BlackBerry sales pushed RIM's 2001 revenues up 160% to \$221 million, although research and development spending (8% of revenue, plus \$7.3 million in government funding) kept the company in the red, with net losses of \$6.2 million.

The challenge for successful innovators like Lazaridis is to stay creative while meeting the market's demand for the product they are already producing. In Montreal, Guy Laliberte has answered that with a system to keep his phenomenally successful Cirque du Soleil on edge. "The biggest danger is losing touch with where we came from," says Laliberte, who founded the Cirque in 1984, when he performed as a fire-eater on the streets of Baie-St-Paul.

Laliberte and his friends didn't set out to reinvent the circus; they didn't know anything about circus tradition, which allowed them to start with a blank slate. So they created a show combining the circus and street entertainment with wild costumes, original music and artistic choreography. Now the Cirque has 2,400 employees from around the world, including 500 on-stage performers in eight concurrent shows in North America and Europe. As the Cirque's 96% owner, Laliberte declines to divulge revenues, but he says it's profitable.

A bald and wiry 43, Laliberte has a fierce passion for his circus. "To keep your edge you have to feel insecure," he says. So Laliberte constantly brings in new people to create the shows -- people who think and act differently from the full-time staff, who challenge them to change and adapt. Laliberte puts into practice the advice of innovation guru Robert Sutton, a Stanford Engineering School management professor, who says that one way to spark creativity is to hire people who don't fit into the organizational code. They might just give the group some fresh ideas.

For the most recent Cirque show, Varekai, Laliberte hired director and playwright Dominic Champagne, who staged Homer's Odyssey for the Theatre du Nouveau Monde before signing on with the Cirque. Champagne had never directed a circus before. A year ago, Champagne came to the first rehearsals for Varekai with a thick scenario. "He spent 11 days reading it to the other people," recalls Lyn Heward, who's in charge of the Cirque's creative content. "Then Andrew Watson, director of creation, said, 'That's very nice, Dominic, but you can put that away because your show is going to change every day.' That's because every person has an influence, whether it's an acrobat or a coach or another designer who's going to challenge you on your concept. It's collective creativity in a very pure sense."

The Cirque practises one technique that has become standard for CEOs looking for new ideas: listening to the employees who actually have to make the thing. The Cirque's creative directors listen to the artists on the floor and in the air -- from the lace makers to the trapeze artists. Innovation gurus call it brainstorming, except the Cirque's artists don't need any hokey techniques to inspire that other cliché: "out-of-the-box" thinking. The Cirque's system also encourages lots of experimentation, another standard suggestion from the business innovation gurus.

A Cirque show is changing all the time. Just a week before Varekai's opening night, the singers who sang like gypsies were sent home and new singers were hired because the composer had changed the music. Laliberte calls it "organized chaos."

Managing a circus does not sound like managing the auto-parts business, at least not at first glance. But some of the techniques that Laliberte uses to spark creativity are not so different from those deployed by Fred Jaekel. Like Laliberte, Jaekel borrowed an idea from another domain to create something entirely new. He was given plenty of leeway to figure out how to do it. And as he started making prototypes to test how water could bend metal and make auto parts, Jaekel listened to the guys who had to make the thing, just as they do in the Cirque. Magna's employees did not belong to a union and were eager to earn extra money by solving technical problems. One man, for example, earned \$40,000 for figuring out how to reduce friction between the metal tube and the mold.

Jaekel plunged into the job, partly to take his mind off the sudden death of his 17-year-old son. His effort paid off in 1995, when Magna announced three big deals that together were worth \$500 million per year. First, Magna won a \$65-million-per-year contract to build hydroformed engine cradles (the frame that supports the engine and front-end suspension) for DaimlerChrysler. Magna had never made an engine cradle before, but DaimlerChrysler jumped at the chance to have a part that would be less expensive than the existing model and 25% lighter. Then Magna convinced Ford Motor Co. to buy hydroformed parts for radiators -- another business new for Magna. Then came the big payoff -- a giant contract to build the chassis for a line of General Motors GMT800 pickup trucks. The GM contract was initially worth \$400 million per year. Magna would have to build two plants, costing \$400 million, the biggest investment in the company's history. Jaekel promised Stronach he would make the money back in two years -- and he did.

By 2001, while many conventional parts stampers were in trouble, Cosma was solidly profitable (GM's pickup truck business alone was worth \$1.6 billion a year) and the hydroforming operation's share of Magna's overall sales was 12% and rising. For his contributions, Jaekel was now earning \$6.8 million a year.

It looked like a classic happy ending to a classic cycle of innovation. That is, until Stronach told Jaekel he was buying a German auto plant that he wanted to dress up to take public. Stronach's plan was to add on a couple of stamping plants plus Cosma's hydroforming business. Jaekel protested; the restructuring would set up an internal competition that would hurt prices. Stronach "did not want to be corrected in his decision-making process," says Jaekel. "He's a very strong man who takes a position, a very strong position. And so do I, to be frank with you. When two people like that collide, you have to take one out."

On March 1, 2001, at 10 a.m., the head of security stepped into Jaekel's office, sat down and handed him a letter. "The letter said that I was resigning and that [Stronach] would accept my resignation," Jaekel recalls. Then the phone rang. "Well, Fred, you're really fired," Stronach told him. "Why don't you go on a holiday, and when you come back we'll talk about how we'll settle this."

When Jaekel returned, he says, Stronach offered him \$6 million to stay out of the auto parts business for three years. Jaekel declined and sued Stronach for \$70 million for

wrongful dismissal before moving on to become CEO of Martinrea International Inc., formerly called Royal Laser Tech Corp., a Toronto Stock Exchange-listed auto-parts maker. Stronach, in turn, would later sue Jaekel for \$50 million, alleging he broke a non-competition agreement. So far, there has been no news of a settlement.

The two men haven't spoken since Jaekel left Magna, although Jaekel has made an effort. Last December, he called his former boss to wish him a Merry Christmas. "It's that time of year to put our guard down as old friends," Jaekel said. "I just want to wish you and your family a Merry Christmas." Stronach didn't say anything. He just hung up.