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BMW's dream factory

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BMW's Dream Factory

Sharing the wealth, listening to even the lowest-ranking workers, and rewarding risk have paid off big time.

The car looks like the victim of some mad scientist's experiment gone

awry. Inside a research lab in Munich, a BMW 5 Series sedan is splayed open, with electronic gadgets and wires spewing in all directions. The project: an onboard computer that will recognize you, then seek out information you want and entertainment you love. While you sleep, your BMW will scour the Net — via Wi-Fi and other connections — collecting, say, 15 minutes of new jazz followed by a 10-minute podcast on the energy industry. It may sound far-fetched, but for BMW's research wizards it's yet another way to woo customers by personalizing cars. This intelligent machine will grow to know you better every day, constantly learning what you like by monitoring your choices. The brains of the system might even tag along with you on a business trip in the form of a "smart card," instructing the Bimmer you rent in Beijing to load up your daily fix of news and music. When Hans-Joerg Vögel, the 38-year-old project chief, hops in the car's front seat and fires it up, his excitement is palpable. Launching into a riff on the wonders of melding the virtual world with the nuts and bolts of an automobile, Vögel says the next generation of BMW 5 Series and 7 Series sedans will be the most Net-savvy cars on the road. And if he's right, it'll be because Vögel had the vision to see the importance of the technology and the gumption to build it so everyone at the automaker could recognize its potential. "We are encouraged to make decisions on our own and defend them," says Vögel. "Risk-taking is part of the job."

Vögel's project is only a tiny part of BMW's vast innovation machine. Just about everyone working for the Bavarian automaker — from the factory floor to the design studios to the marketing department — is encouraged to speak out. Ideas bubble up freely, and there is never a penalty for proposing a new way of doing things, no matter how outlandish. BMW, says Ulrich Steger, a professor of management at the International Institute for Management Development in Lausanne, Switzerland, is "a fine-tuned learning system."

True Believers

That's no small accomplishment, and it has fueled BMW's growth over the past decade from a boutique European automaker to a global leader in premium cars. Although BMW, with \$59.2 billion in sales last year, is much smaller than its American rivals, the U.S. auto giants could still learn a thing or two from the Bavarians. Detroit's rigid and bloated bureaucracies are slow to respond to competitive threats and market trends, while BMW's management structure is flat, flexible, entrepreneurial — and fast. That explains why, at the very moment GM

and Ford appear to be in free fall, BMW is more robust than ever. The company has become the industry benchmark for high-performance premium cars, customized production, and savvy brand management, making it the envy of Mercedes-Benz (DCX), Audi, and Lexus and the subject of Harvard Business School case studies. Even mighty Toyota Motor Corp. (TM) regularly dispatches engineers to BMW's factories to see how the company cranks out 1.3 million customized cars a year.

Few companies have been as consistent at producing an ever-changing product line, with near-flawless quality, that consumers crave. BMW has redefined luxury design with its 7 Series, created a mania for its Mini, and maintained some of the widest margins in the industry. A sporty four-wheel-drive coupe and a svelte minivan called the Luxury Sport Cruiser are slated to roll off the production line in 2008. Those models promise to continue BMW's run of cool cars under its new chief executive, Norbert Reithofer, who took over in September. (His predecessor, Helmut Panke, stepped down upon reaching the mandatory retirement age of 60.) Says Reithofer: "We push change through the organization to ensure its strength. There are always better solutions."

Virtually everyone at BMW is expected to help find those solutions. When demand for the 1 Series compact soared, plant manager Peter Claussen volunteered to temporarily use his brand new factory — which had been designed for the 3 Series — to crank out 5,000 of the compacts, and he quickly figured out how to do it while maintaining all-important quality. Last year line workers in Munich suggested adding a smaller diesel engine in the 5 Series, arguing that it would have enough oomph to handle like a Bimmer and be a big seller among those on a tighter budget. They were right. And Panke once insisted that all six members of the management board take an advanced driving course so they would have a better feel for BMW cars.

Much of BMW's success stems from an entrepreneurial culture that's rare in corporate Germany, where management is usually top-down and the gulf between workers and managers is vast. BMW's 106,000 employees have become a nimble network of true believers with few hierarchical barriers to hinder innovation. From the moment they set foot inside the company, workers are inculcated with a sense of place, history, and mission. Individuals from all strata of the corporation work elbow to elbow, creating informal networks where they can hatch

even the most unorthodox ideas for making better Bimmers or boosting profits. The average BMW buyer may not know it, but when he slides behind the wheel, he is driving a machine born of thousands of impromptu brainstorming sessions. BMW, in fact, might just be the chattiest auto company ever. "The difference at BMW is that [managers] don't think we have all the right answers," says Claussen, manager of the company's new Leipzig factory, a 21st century cathedral of light and air designed by avant garde architect Zaha M. Hadid. "Our job is to ask the right questions."

It may sound trite, but it sure seems to work. Last year the company sprinted past its stumbling archrival, Mercedes-Benz, in global sales of its BMWs, Minis, and Rolls-Royces. (The German company bought the Rolls name in 1999.) More impressive, BMW's 8.1% operating margins make the automaker one of the most profitable in the industry. In the first half of 2006, BMW's sales rose 10.2%, to \$32 billion, while pretax earnings jumped 44.5%, to \$3.2 billion, despite a strong euro and punishing increases in raw material costs.

That's not to say this freewheeling idea factory hasn't made its share of blunders over the years. In 2001, BMW alienated customers with its iDrive control system. The device was designed to help drivers quickly move through hundreds of information and entertainment functions with a single knob, but it proved incomprehensible to many buyers. That misstep could seem minor, though, if BMW were to fail to artfully navigate the challenges ahead. Rival Audi is narrowing the gap with BMW in Europe by churning out a new generation of stylish, high-performance cars that have topped consumer polls. Toyota's Lexus also has BMW in its sights as it makes a move to gain in Europe with sportier, better-handling cars. "We will be challenged — no question," says Reithofer. "We have to take Lexus seriously."

A profit squeeze could just as easily trip up the company in the eyes of investors. To prove he has the right stuff, Reithofer is going to have to boost margins even as the cost of materials soars. Down the line the high price of oil and concerns about global warming could make "the ultimate driving machine" a lot less appealing when compared with gas-sipping, eco-friendly cars. The premium market "means extravagance by definition," something consumers may start to reject, says Garel Rhys, a professor of automotive economics at Cardiff University in Wales. Yet BMW's greatest danger could be its own

growth and success. Says Ralf Kalmbach, a partner at Munich management consultant Roland Berger: “Losing its culture to sheer size is a major risk.”

In BMW’s favor is an enduring sense that things can go badly wrong. New hires quickly learn that the BMW world as they know it began in 1959. That’s when the company nearly went bankrupt and was just a step away from being acquired by Mercedes. That long-ago trauma remains the pivotal moment in BMW folklore. “We never forget 1959,” says Reithofer. “It’s in our genes, and it drives our performance.” If it weren’t for a bailout by Germany’s wealthy Quandt family — still the controlling shareholder, with a 46.6% stake — and a pact with labor to keep the company afloat, BMW wouldn’t exist today. “Near-death experiences are very healthy for companies,” says David Cole, a partner at the Center for Automotive Research in Ann Arbor, Mich. “BMW has been running scared for years.”

The story of 1959 is told and retold at each orientation of new plant workers. Works Council Chief Manfred Schloch, a 26-year veteran, holds up old, grainy black-and-white photos of two models from the 1950s. The big one was too pricey for a struggling postwar Germany. The other, a tiny two-seater, looked like a toy and was too small to be practical, even by the standards of that era. The company badly misjudged the market, he says. As if handling an ancient, sacred parchment, Schloch pulls out a yellowed, typewritten 1959 plan for turning the company around with a new class of sporty sedans. Schloch then hands out photos of Herbert Quandt and the labor leader of the period, Kurt Golda. “I explain how we rebuilt the company with Quandt’s money and the power of the workforce,” says Schloch. “And I tell them that’s the way it works today, too.”

Happy Workers, Better Cars

BMW derives much of its strength from an almost unparalleled labor harmony rooted in that long-ago pact. In 1972, years before the rest of Europe Inc. began to think about pay for performance, the company cut workers in on its profits. It set up a plan that distributes as much as one and a half months’ extra pay at the end of the year, provided BMW meets financial targets. In return, the workforce is hyperflexible. When a plant is introducing new technology or needs a volume boost, it’s not uncommon for workers from other BMW factories to move into temporary housing far from home for months and put in long hours on

the line. Union bosses have made it easy for BMW to quickly adjust output to meet demand. Without paying overtime, the company can crank up production to as much as 140 hours a week or scale it back to as little as 60 hours. The system lets the company provide unprecedented job security, and no one at BMW can remember any layoffs — ever. Since 2000, BMW has hired 12,000 new workers even as General Motors Corp. (GM) and Ford Motor Co. (F) have slashed tens of thousands of jobs.

That helps explain why landing a job at BMW is to many Germans what getting into Harvard is for American high school students. The company's human resources department receives more than 200,000 applications annually. Those who make it to an interview undergo elaborate day-long drills in teams that screen out big egos. For the lucky few who are hired, a Darwinian test of survival ensues. BMW promotes talented managers rapidly and provides little training along the way, forcing them to reach out to others to learn the ropes. With no one to coach them in a new job, managers are forced to stay humble and work closely with subordinates and their peers, minimizing traditional corporate turf battles. Anyone who wants to push an innovative new idea learns the key to success fast. "You can go into fighting mode or you can ask permission and get everyone to support you," says Stefan Krause, BMW's 44-year-old chief financial officer. "If you do it without building ties, you will be blocked."

That BMW's spectacular Leipzig factory was ever built is a testament to the power of such ties. When plant manager Claussen first proposed a competition to lure top architects, headquarters was aghast. "People said to me, 'What's wrong with these guys in Leipzig?'" recalls Krause. "We don't need beautiful buildings, we need productive buildings." But Claussen convinced Krause and others that the unconventional approach wouldn't just produce a pretty factory but one whose open, airy spaces would improve communications between line workers and managers and create an environment that helps the company build cars better.

Even before Claussen began pushing his architectural vision, others were busy designing the inner workings of the plant. Newly minted engineer Jan Knau was only 27 in 2000 when he was asked to come up with a flexible assembly line for the factory. Knau, then just a junior associate, rang up BMW's top 15 assembly engineers, inviting them to a

two-day workshop at a BMW retreat near the Austrian Alps. The calls paid off. After a series of marathon sessions that included discussions of every facet of the ideal assembly line, Knau sketched a design with four “fingers,” or branches, off the main spine. The branches could extend to add equipment needed to build new models, making it possible to keep giant robots along the main line in place rather than moving them for each production change, an expensive and time-consuming process.

Leipzig opened in May, 2005, joining Claussen’s vision of teamwork enhanced through design to Knau’s smart engineering concepts. With pillars of sunlight streaming through soaring glass walls, architect Hadid’s design looks more like an art museum than a car factory. Open workspaces cascade over two floors like a waterfall. Unfinished car bodies move along a track, bathed in ethereal blue light, that runs above offices and a smart-looking, open cafeteria. If the parade of half-finished cars slows, engineers feel the pulse of the plant change and can quickly investigate the problem. And weekly quality audits — in a plaza workers pass on their way to lunch — ensure that everyone is quickly aware of any production snafus. The combination of togetherness and openness sparks impromptu encounters among line workers, logistics engineers, and quality experts. “They meet simply because their paths cross naturally,” says Knau. “And they say, ‘Ah, glad I ran into you, I have an idea.’”

The flexibility of BMW’s factories allows for a dizzying choice of variations on basic models. At Leipzig, for instance, parts ranging from dashboards and seats to axles and front ends snake onto overhead conveyer belts to be lowered into the assembly line in precise sequence according to customers’ orders. BMW buyers can select everything from engine type to the color of the gear-shift box to a seemingly limitless number of interior trims — and then change their mind and order a completely different configuration as little as five days before production begins. Customers love it. They request some 170,000 changes a month in their orders, mostly higher-priced options such as a bigger engine or a more luxurious interior. There are so many choices that line workers assemble exactly the same car only about once every nine months.

That kind of individualization would swamp most automakers with budget-busting complexity. But BMW has emerged as a sort of anti-Toyota. One excels in simplifying automaking. The other excels in

mastering complexity and tailoring cars to customers' tastes. That's what differentiates BMW from Lexus and the rest of the premium pack. "BMW drivers never change to other brands," says Yoichi Tomihara, president of Toyota Deutschland, who concedes that Toyota lags behind BMW in the sort of customization that creates emotional appeal.

Bottom-up ideas help keep BMW's new models fresh and edgy year after year. Young designers in various company studios from Munich headquarters to DesignWorks in Los Angeles are constantly pitted against one another in heated competitions. Unlike many car companies, where a design chief dictates a car's outlines to his staff, BMW designers are given only a rough goal but are otherwise free to come up with their best concepts.

To get the most out of its people, BMW likes to throw together designers, engineers, and marketing experts to work intensively on a single project. The redesign of the Rolls-Royce Phantom, for instance, was dubbed "The Bank" since the 10 team members worked out of an old bank building at London's Marble Arch, where dozens of Rolls roll by daily. "We took designers from California and Munich and put them in a new environment" to immerse them in the Rolls Royce culture, says Ian Cameron, Rolls's chief designer. The result was the 2003 Phantom, a 19-foot edifice on wheels that remains true to Rolls's DNA but with 21st century lines and BMW's technological muscle under the hood. With sales of the \$350,000 car running at about 700 a year, the Phantom is the best-seller in the superluxury segment, outstripping both the Bentley Arnage and the Mercedes Maybach.

Much of BMW's innovation, though, doesn't come via formal programs such as The Bank. In 2001 management decided to pull the plug on the disappointing Z3 sports coupe. But that didn't stop a 33-year-old designer named Sebastian Trübsbach from doodling a sketch of what a Z3 successor might look like. Ulrich Bruhnke, head of BMW's high-performance division, loved it. In Trübsbach's drawing, Bruhnke saw a car that could rival Porsche's (PSEPF) Cayman S in performance but at a lower price. He persuaded a few designers and engineers to carve out some time for the renegade project. Next, Bruhnke gathered a team to map out the business case. The small group toiled for 10 months to build a prototype.

The moment of truth came in November, 2004, at a top- secret test

track near Munich. Cars were lined up so the board could examine their styling and proportions in natural light. Only one was covered by a tarp. Panke approached the mystery model. "What is this interesting silhouette?" he asked Bruhnke, who invited his boss to take a look. Panke yanked back the cloth, exposing a glittering, bronze metallic prototype for what would become the Z4 coupe. Bruhnke breathed a sigh of relief when he saw Panke's eyes light up as they swept over the car's curved surfaces. Panke and the board quickly gave the go ahead, and the Z4 coupe sped to production in just 17 months, hitting showrooms this summer. Bingo. BMW's idea factory wins again.

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