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Dr. Ing. h.c. F. Porsche AG (A): True to Brand?

I do not copy any Harvard blueprint; instead I try every day to lead my team through fact-based discussions. In this process it helps that people feel how enthusiastic I am. I stand behind every decision. My colleagues learn that immediately.

—Wendelin Wiedeking¹

Porsche . . . there is no substitute.

—Porsche advertising slogan²

[Location] is not an uncritical issue. People think that as a car comes off the line at Zuffenhausen, [company founder] Ferdinand Porsche comes by and caresses the car with his hand, and that makes it an official Porsche. Of course, Ferdinand Porsche hasn't been doing that for some time.

—Porsche spokesman³

In August 1996, legendary sports car maker Dr. Ing. h.c. F. Porsche A.G. (Porsche)⁴ launched the Boxster, a zippy new two-seater with an “entry-level” price of \$40,000. At the same time, Porsche chairman and CEO Wendelin Wiedeking stunned the automotive world by announcing that as of September 1997 the Boxster would be assembled in Finland, rather than at Porsche’s main Zuffenhausen plant, which was already operating beyond capacity. In spring of 1998, just months after the controversial move to Finland, Wiedeking shocked observers yet again by confirming rumors that Porsche would enter the fast growing sport-utility vehicle (SUV) market by 2002. The company would also be looking for a production site for this new model.

This one-two punch immediately sparked a debate about whether Porsche would or could remain true to its brand and its “made in Germany” imprimatur. Could the Porsche brand ever align with an SUV concept? Could the small German company become a major player in the already very competitive—and chiefly U.S.-oriented—SUV market? Would luxury SUV sales expand beyond North America to markets that had neither the roads and parking nor the cheap energy for oversized vehicles? And would SUV production be located in Germany or elsewhere? Launching a new model series was risky for any manufacturer, but especially risky for a small player such as Porsche.

If Porsche went ahead with an SUV, there were several options for development and production. It could partner with a major manufacturer to gain development and manufacturing efficiencies as well as production slots. Porsche could also follow the course of its German compatriots BMW and Mercedes-Benz, who had established manufacturing bases in the United States, the largest SUV

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market in the world. But Porsche would need to decide if “made in Germany” was integral to its global appeal. However, making SUVs in Germany—with its strong unions, high and rising labor costs, and appreciating currency—could push the luxury product prices even higher, and posed other challenges as well. But how important was it for the new model to actually be “made in Germany?”

The responsibility for these decisions lay with Wiedeking, a relentless efficiency expert who, in the mid-1990s, had steered Porsche through one of the most noteworthy turnarounds in industry history. He staved off bankruptcy by cutting costs, paring the product line to two models, and expanding into 70 global markets—30 more than in 1993.⁵ By the time of the 1998 SUV announcement, the 50-year old firm was back on solid financial footing and its stock price beat the national DAX index by 180% in the previous two years (see **Exhibits 1** and **2** for stock and financial information).

But the company still needed to manage risk sensibly. Analysts fretted about the dilutive impact an SUV might have on the Porsche name, and worried that the DM 1 billion investment (ca. \$550 million in 1998) was a huge bet for a small player like Porsche. Meanwhile, competition within Porsche’s core business was expected to increase with the coming launch of a sporty two-seater from Audi, positioned at an equal performance level but priced 15% below the Boxster.⁶

The Legacy

Ferdinand Porsche was born on September 3, 1875, in Maffersdorf, Bohemia, in the former Austro-Hungarian Empire (now Vratislavice in the Czech Republic). After a brief stint as Daimler-Benz’s technical director, he left the company, which did not want to build small, fast cars for the public. Unemployed at 55, Porsche started his own design firm for all sorts of vehicles. His son, Ferdinand Anton Ernst “Ferry” Porsche, and his son-in-law, Anton Piëch,⁷ joined him, along with key engineers. Ferry became head of R&D. The senior Porsche, renowned for his temper and single-mindedness, imbued the firm with a spirit of fierce independence.

In 1934, Adolf Hitler tasked Porsche to develop a family car that was both cheap and reliable—yielding the “people’s car” or Volkswagen, whose design was intended to evoke the German infantry helmet and honor National Socialist ideals. During wartime, the company focused on tank design, including the formidable “Tiger.” In June 1948, Porsche launched the 356, the first automobile to carry the Porsche name. Volkswagen manufactured the 356, with its tubular space-frame chassis, aluminum body, and rear-mounted four-cylinder engine, until Porsche opened its own production facility in Stuttgart-Zuffenhausen in 1950.⁸ See **Exhibit 3** for company milestones.

In 1953, Porsche produced its first car specifically for racing, the 550. In 1964 came the 911, also a racing car. Designed by Ferry’s eldest son, Ferdinand Alexander “Butzi” Porsche, the vehicle became a twentieth-century design milestone. In the 1970s Porsche and Volkswagen collaborated on launching the 914. In 1972, Porsche became a joint stock company (Porsche AG) with the Porsche and Piëch families on the supervisory board. Butzi left the company at the same time to found his own design studio for other products, called “Porsche Design.”

Porsche AG was nearly derailed by the U.S. economy’s tailspin and stock market crash in 1987. Sales volume collapsed from a peak of 50,000 cars in 1986 to 14,000 in 1993.⁹ The culprits were global recession—particularly in the United States, Porsche’s most important market—and a stagnant product line. Leadership problems also affected company performance during this period. In 1990 Butzi succeeded Ferry as chairman of the supervisory board, but lasted only until early 1993. He was replaced by Helmut Sihler, one of the most respected men in German business. Moreover, between 1987 and 1992, four chairmen of the managing board left in disputes with the controlling Porsche and

Piëch families about how to run the company.¹⁰ Sihler named Wendelin Wiedeking, a 38-year-old engineer from central-western Germany, executive director (CEO) of the group in 1993.

New Leadership

An avid car enthusiast since childhood, Wiedeking first drove at age 11, and built over 1,500 model cars as a boy. After completing his doctorate in engineering, he joined Porsche in 1983 as an assistant to the production director. He left in 1988 to head a maker of automotive ball bearings, where he was exposed to Japanese and American production methods and management strategies. In 1991 he returned to Porsche as production and materials management director, and was soon promoted to spokesman of the executive board, and then President and CEO.

Wiedeking claimed that the most important quality in leading a manufacturing operation was “clear direction.” Since the age of 15, after his father’s death, his goals had been clear: “I have always known what I wanted and have also realized it—without regard for the hesitant and the doubtful.”¹¹ He believed that an effective manager had to “make everybody know about the strategy. In bad times, you must talk very openly about the problems you’re facing. Say what you really mean. Put everything on the table. Good things as well as bad things. And then do it. Just do it.” He was also said to like and live by two German proverbs: “You sweep the steps from the top down” and “He who barks must also bite.” Finally, while rival brands such as Jaguar, Ferrari, Lamborghini, Lotus, Alfa Romeo and Aston Martin had allowed themselves to be sold to mass marketers such as Ford, Fiat, Chrysler and General Motors, Wiedeking remained as independent as the company he led, explaining “Size alone is not a prerequisite for survival.”

Wiedeking quickly made his mark inside and outside the company. He emerged as one of the most admired, but outspoken and unconventional CEOs in Germany, challenging the very tenets of shareholder value, and questioning the necessity of issuing quarterly reports and forecasts. “Yes certainly, we [Porsche] too have already heard about shareholder value,” he explained. “That changes nothing for us because our customer comes first, then our employees, then our business partners, suppliers, dealers and afterward our shareholders. It is completely inappropriate to place the shareholder first. It will limit the strength of the enterprise. You will achieve the opposite goal and spiral downwards.”¹² Such tough talk and bold decision making was quickly turning Wiedeking into a “brand”¹³ himself, like Chrysler’s Lee Iacocca in the 1980s.

Lean Production

Together with a global brand name and a highly skilled workforce, Wiedeking inherited a bloated management roster, an inefficient production process, and a record \$150 million loss widely blamed on management complacency.¹⁴ Early into his tenure as CEO he promised to cut production costs by 30%. Porsche’s chairman at the time (Butzi Porsche) declared such a feat impossible. “But I said, ‘No, I offered it, I’ll bring it,’” Wiedeking reminisced, “and I brought it.”¹⁵

Wiedeking benchmarked every aspect of production to find out how much time, effort, and money went into making every Porsche. His goal was to emulate modern “lean production” or “just in time”¹⁶ manufacturing methods to cut costs and increase productivity. Lean production moved away from the principles of specialization, where individual production line workers had a deep knowledge of one specific task. Instead, lean production environments called for highly skilled and flexible workers who could operate multi-purpose machinery with minimal supervision.¹⁷ Workers’ ability to be productive in a team environment became imperative, along with a focus on continuous improvement throughout the entire operation.

In 1992 Wiedeking took key managers on a tour of Toyota, Honda, and Nissan production facilities to show how fat and wasteful Porsche's production process was in comparison. He hired a leading Japanese automotive consultant who, during a plant visit, described the Zuffenhausen plant as more of a warehouse than a factory. He then handed Wiedeking a circular saw and told him to cut the storage shelves in half.¹⁸

Once trained in the principles of lean production, Porsche employees passed them on to major suppliers to help them lower waste and production cycle time, thus reducing component prices for Porsche.¹⁹ The new strategy reduced manufacturing defects and inventory (from 7 days' worth to 1 day). Revenue per employee rose 53% from FY92 to FY97. The number of cars per production employee per year almost doubled over the same period from 4.9 to 9.1 cars. In FY92 the old 911 (then type 993) took 128 hours to produce; five years later, only 70 hours. The new 911 took 56 to 58 hours to produce.²⁰

Wiedeking dismissed a third of the company's middle managers and established the Porsche Improvement Program, designed to measure quality and efficiency and eliminate waste: "I had to cut 2,000 jobs to save 6,000," he explained.²¹ Employee participation picked up and improvement suggestions increased from 0.09 to 4 per person. Wiedeking rewarded employee suggestions with cash (DM 100 for a good idea that was implemented) or with gifts, like trips or motorcycles.²²

New Models

In 1991, a year before Wiedeking became CEO, Porsche launched the first of several cars at lower price points than traditionally associated with the Porsche brand. The 911 RS America was a no-frills version of the long-running rear-engine 911 model; priced at \$54,000, it ran about \$10,000 under traditional Porsche prices. This was followed by the entry-level 968 at about \$40,000, close to the \$37,000 Nissan 300ZX Turbo or the \$33,000 Mazda RX-7.²³

By early 1992, Porsche postponed the launch of a larger, luxury Porsche 989 for aging baby boomers when it became clear that its total cost would be 30% higher than the price it could command in the market.²⁴ The company wrote off significant development costs for the 989 and geared up for its \$40,000 two-seat Boxster, to launch by 1996. In an important departure from Porsche practice, the Boxster would share 40% of its parts with the 996.²⁵ Changes continued in 1992 with a revamped, water-cooled 911. Moving away from the traditional air-cooled engine was another break with the past—and sacrilege to many Porsche purists.

The redesigned 911 and the Boxster were developed simultaneously in a record 37 months, and at a greatly reduced cost. Design engineers made extensive use of computer simulation, which cut the prototype development time and kept costs down. The new 911 used components developed for the 986, reducing costs by 15%.²⁶ In addition, the Boxster and the new 911 shared the same basic engine, the same basic body structure, and a similar design for chassis and suspension. The result was a higher production volume for individual parts, and an assembly line common to both cars.

The SUV Bet

The Porsche SUV would be the company's third series, and the first developed and launched entirely under Wiedeking's watch. He wanted the vehicle to combine traditional Porsche styling and performance with off-road driving capability and a spacious interior, placing more emphasis on "sports" than "utility." The new car had to retain the brand's style and panache while accommodating family, outdoor, and transport activities. Wiedeking felt that SUVs were "nearer to

the sports car business than sedans. We also looked at minivans, but we do not want an eighth 'me-too' product. It has to be a real Porsche in terms of chassis, performance, and design"—Porsche's key strengths.²⁷ Wiedeking continued: "We know from our surveys that a lot of our customers are waiting for a Porsche SUV. Then there will be no doubt that customers can proudly park their SUV next to a Mercedes S-Class and other cars like that."²⁸ The average Porsche customer already owned three cars: an SUV, a limousine or sedan, and a sports car.²⁹

Much of the SUV sales boom after 1996 occurred in the so-called Premium SUV market. For example, the immediate success of the 1996 Mercedes off-roader M-Class demonstrated a demand for luxury SUVs (see **Exhibit 4** for SUV market information). Porsche wanted to leverage its "premium" brand to enter that market, emulating Ford Motor Company's achievement with its GT sports car and BMW with its 7- and 5-series luxury vehicles. SUV optimists argued that Porsche had found a solution to diversify its "aging model range" in an oversaturated market. They estimated a breakeven number of 10,000 units priced between DM 100,000 and DM 120,000. By building 20,000 SUVs a year, Porsche could boost its total sales by 50%.³⁰

But many Porsche enthusiasts feared that instead of rejuvenating the company, the SUV would cheapen the Porsche image. Some saw the move as near sacrilege.³¹ Porsche family shareholders cringed, fearing the company's pure breed sports car tradition and exclusivity were not befitting bulky off-roaders. Wiedeking countered: "Our new sport utility vehicle will not only correspond in full with Porsche's high technical and visual standards, but will also pave the way for future growth potential in the sales, turnover and earnings areas" he promised.³² An SUV would give Porsche "a new dimension in both profit and revenues."³³

The automotive press reported that Porsche saw the SUV as its chance to balance the risks of its exchange rate position. Porsche was particularly sensitive to the value of the dollar because 44% of its cars in 1997 were sold in the United States (see **Exhibit 5**).³⁴ While Porsche had improved its hedging operations since its liquidity crisis of the late 1990s, the company remained highly exposed to the U.S. market and dollar fluctuations. In 1998, 23% of its sales came from the United States (and 37% from Germany).³⁵ About 80% of its sales came from its vehicles and 9% from spare parts.³⁶

The SUVs' popularity with U.S. drivers was attributed to the nation's historic affinity for larger cars and trucks that could serve for both work and personal use. This new breed of vehicle was viewed as innately "American": the rugged and powerful appearance, and the promise to combine the carrying capacity of station wagons with the off-road capability of pick-ups, offered an alternative to old fashioned family suburban and rural utility vehicles. The sporty and aggressive design appealed even to those who would never dream of taking a car into rough terrain, namely preppy, youthful professionals, including working women who preferred not to be associated with station-wagon moms. Luxury/crossover SUVs targeted the high-end market with top quality interior amenities such as navigation systems and DVD players, stylish materials (wood and leather), and lowered suspensions. After Ford's successful launch of the Explorer, other leading manufacturers both in the United States and abroad (Japan, Germany) followed with their own models.

To cut down development and manufacturing costs, SUV bodies tended to be less sophisticated than the newer smaller cars. Most cars employed unibody construction, with a steel body shell designed to absorb the impact of collisions and crumple without injuring the passengers. Many (not all) SUVs were built in the tradition of light trucks, using a "body-on-frame" method which provided a lower level of safety but better maneuverability.

Porsche's SUV would join an already crowded market, estimated at about two million units in early 1998. Still, the category ranged from pick-ups, light trucks, and small jeeps to high-end entries such as the Suzuki LJ. Range Rover—the only SUV with a base price over DM 100,000.³⁷ A successful

high-end, high-performance Porsche SUV could trigger me-too follow-ons within two to three years, thanks to the compression of development intervals within the automobile industry. Already, Mercedes Benz was rumored to be considering an M-Class vehicle with a 300-plus horsepower engine. BMW was also rumored to be interested in developing what would later become the X5. The potential for such new entrants threatened the sustainability of Porsche's sales forecasts of 20,000 SUVs each year.³⁸ Finally, some observers questioned the long-term attractiveness of the SUV segment, predicting a move towards smaller, more fuel-efficient cars.³⁹

In the context of the broad demographic that could afford only lower priced vehicles, Porsche's decision to go forward with a luxury SUV seemed particularly puzzling. And though SUVs had emerged as the most profitable segment of the industry in the 1990s, they lacked the agility and performance synonymous with Porsche. The challenge was now to close the perceptual gap between Porsche attributes and those associated with SUVs.

Location Decisions

One thing was certain—Porsche lacked production capacity for a new SUV. In 1998, the Zuffenhausen factory, originally designed to produce 20,000 cars annually, worked three shifts six days a week and had reached a capacity of about 40,000 cars per year.⁴⁰ The location of a new factory had to satisfy multiple criteria and posed a serious challenge to Wiedeking. Since outsourced parts would make up approximately 80% of the finished product, easy access to suppliers was imperative;⁴¹ other factors included labor costs (hourly wages as well as additional expenses such as healthcare, retirement benefits, etc.); the quality, skills, and flexibility of the local labor pool; proximity to major or high quality ports and airports; favorable tariff structures for imported components and exports of finished product; and access to a large local market.⁴² The site decision would also consider nonfinancial support of local authorities, the location's fertility as a learning ground, and its potential impact on the Porsche brand.

Until the 1990s, the labor-intensive automobile industry had been largely a national affair regarding technology, parts supply, and skill base. Several factors propelled automotive manufacturers beyond their borders, including the expansion of the Central and Eastern European markets after the end of the Cold War, and the emergence of potentially large new markets such as China, India, and other countries in Asia, Central and South America.⁴³

Manufacturers adopted one of four strategies for internationalization, encompassing various levels of local content. The first option was to export complete cars. The second was to export slightly disassembled cars, known in the sector as semi-knocked-down or SKD kits. The third option was substantial local assembly of cars (or completely-knocked-down kits or CKD) and fourth, the use of integrated local manufacturing.⁴⁴

Typically, manufacturers chose one of three approaches to locate facilities abroad. First they could choose to locate in emerging large market areas (e.g., China, Russia and India) or established ones (e.g., the United States, northern Europe and Japan). They could also locate close to such large markets, exporting to them from peripheral countries such as Mexico, Spain, Portugal, Canada and Central and Eastern Europe. Finally, domestic facilities could also be expanded to serve the global markets from the home base.⁴⁵ According to a study, emerging larger markets or peripheral markets accounted for 51% of the world's plants, but only 23% of its capacity. Players aimed to either maximize economies of scale or adopt a more flexible production system when defining their international strategy. The latter had been Porsche's approach.

In 1992 and 1993 BMW and Mercedes Benz moved about 10% of their production to the United States.⁴⁶ In turn, they pressured suppliers to locate component factories closer to U.S. plants, much as Toyota and Nissan had before them. Thus, the 1990s marked the rise of the global supplier, created through an intense wave of M&A and joint venture activities and international expansion. European automobile manufacturers developed an ever-increasing length and globalization of supply networks, especially into Central and Eastern Europe.⁴⁷ Several major mergers and alliances, such as Daimler-Chrysler and Nissan-Renault, reinforced the prevailing argument that any manufacturer unable to produce four million cars a year could not survive on its own.⁴⁸

Porsche's options spanned the compass: SUV production could follow the Boxster's path to Finland or go across the southeastern border to the emerging Czech and Slovak automotive markets; or it could follow competitors to North America. "There is plenty of spare capacity around the world," Wiedeking said in May 1997. "The main investment [for the Porsche SUV] is in the design and manufacturing equipment."⁴⁹ Porsche was expected to spend about \$830 million in design and development of the new model.⁵⁰ **Exhibit 6** provides more information on labor costs, additional labor expenses, and working hours in the manufacturing sector in selected countries.

Replicate the Boxster Solution?

One option for assembling the new SUV was to outsource it to a third party, as Porsche had done in 1997 for its Boxster model. At the time of the SUV decision, it was not widely known that Porsche already produced only about 70% of its cars in German factories; the Finnish company, Valmet Automotive, manufactured the rest.⁵¹ The controversial decision arose when Boxster sales forecasts reached 20,000 for 1998, following actual sales of nearly 16,000 in 1996/97 (about 6,450 in the United States).⁵² Porsche's Zuffenhausen plant was running at full capacity to meet the surging demand for the revamped 911 Turbo.⁵³ In a surprising move, Porsche outsourced some of the production to Valmet, an independent European contract manufacturer of premium specialty cars. "We had no choice," said Wiedeking, stressing that on-site German assemblers and engineers ensured that the Boxsters assembled in Finland were "100% Porsche" and just as good as those made in Germany. Porsche leaders also cited high German labor costs to justify the move,⁵⁴ along with fixed costs, which Wiedeking professed to abhor.⁵⁵

With that stroke, Porsche joined automakers such as Chrysler, Fiat, Peugeot Citroen, and Saab, which had outsourced the entire assembly of models either too specialized or time-consuming to be produced in their own plants. For Saab, it was cheaper to ship body panels and engines for its convertibles to Valmet than to disrupt its own production lines with the tooling and engineering required for soft-top models.⁵⁶ Although the Finland decision was widely reported as Porsche's first overseas production move, between 60 and 80 individual 911s had already been assembled annually in Mexico since 1995, with still others manufactured in Indonesia.⁵⁷

Despite living in the shadow of the Soviet Union for decades, Finland had become the world's 15th-largest economy, growing at a robust 5% per year in the 1990s. Home to five million inhabitants and a number of international companies such as telecom giant Nokia, Finland was the last country to join the EU in 1995 but one of the first to qualify for the common currency scheduled to take effect in 1999. In July 1997 the European Commission approved a regional aid package to Valmet (Finland's only car assembly company) located in Western Finland, where unemployment was high. The ratio of aid to investment reached 18%, with \$12 million allocated for Porsche.⁵⁸ The aid package would enable Valmet to produce 5,000 Boxsters per year.

Most Valmet assembly workers were female.⁵⁹ They assembled 35,000 cars in 1997, up from 30,000 in 1996, and aimed for 40,000 in 1998. Vehicles produced included Saab 900 cabriolets, as well as Russian-designed Lada Samara hatchbacks. Production at Valmet was highly flexible, a manager explained, designed in the image of Toyota.⁶⁰ “Nowhere else will you see assembly workers moving from a mid-engine Porsche to a front-wheel drive Saab. Flexibility in this business is the key to success.”⁶¹ Valmet was also quick—with Porsche it had moved from proposal to commercial production in just eight months.⁶² Over 15,000 Boxsters were produced that first year.

The solution was not without risk for both parties. Carmakers that outsourced production lost some control over the final assembly and had to anticipate and manage the risks of customer dissatisfaction and brand dilution. Assemblers risked losing contracts if outsourced models were discontinued or if capacity in the parent plants became available. In this risky environment Valmet boasted a 19% profit margin, consistently above industry averages.⁶³ In September 1998, a Porsche manager noted that while the firm was planning to increase production, “this increase [could] only come in Finland.”⁶⁴ Fortunately, in the case of the Boxster, it seemed that the origin of the actual car mattered little to impatient customers. “Dealers just want the [Boxster]. They could build it on the moon for all we care,” said the president and CEO of Porsche Cars North America in early 1998.⁶⁵ Most initially skeptical observers eventually deemed the outsourcing strategy a success.

It was unclear, however, how extensively Porsche could outsource without backlash. And if Porsche managers chose Valmet to assemble the SUV, the firm would become very dependent on one assembler and expose itself to risks associated with Valmet’s success and performance. Moreover, the SUV was different from the typical cars Porsche had brought to market over the years. As such, there would be learning associated with the launch that Porsche would want to capture and that would be difficult with a third party assembler. Nevertheless, Valmet would likely provide the fastest ramp-up and lowest production risk, two highly desirable qualities to launch its most controversial model to date. Valmet had also indicated a willingness to accommodate the new Porsche SUV.

Stay Home?

Many consumers associated high quality cars with Germany, and its auto sector was of major importance to both the country’s industrial fabric and its global reputation for highly-engineered, high-performance, high-quality products. Despite very high production costs, Germany competed successfully in exporting advanced engineered, quality products backed by excellent service. In 1997 German manufacturers increased their worldwide exports of automobiles by 6.3%, with 27.7% of cars going to the United States and 25% to Eastern Europe.⁶⁶ Daimler-Benz and Porsche alone exported 20% and 36% of their production, respectively, to the United States.

Nearly one-third of all German tax revenue came from the automobile sector. German manufacturers were also responsible for one of three auto-related patents issued worldwide, nearly one-third of automotive production within the EU, and one-seventh of world production. German-branded vehicles satisfied 17% of worldwide demand.⁶⁷ The German automobile industry benefited greatly from the fall of the German mark from DM 0.55 to the dollar in 1991 to DM 0.72 to the dollar in 1995. But on the eve of the Euro’s introduction, there was considerable uncertainty around how the common European currency would move in relationship to the dollar. Many disparaged the attempt to create one currency for such a diverse set of European countries and expected a weak Euro.

By the late 1990s, however, globalization and rising Asian competition in the higher-end automotive market segments were straining the traditional German model of exporting from domestic factories. Porsche and its peers grew concerned with the limitations of Germany’s “social market economy”—a model of cooperative industrial relations between management, strong unions,

and skilled workers—which encouraged overall social cohesion but created high domestic production costs. Legislators, trade unions, and employer associations set minimum wage rates and other conditions of employment at the regional level. Most observers associated high German labor costs with the concessions the unions had extracted over the years, such as the lowest number of yearly working hours of any industrialized country (1,648) with six weeks of annual vacation, holidays and paid sick leave.⁶⁸ For instance, in the highly unionized coal mining industry, German taxpayers effectively spent nearly \$60,000 a year in subsidies for each of 85,000 jobs while paying three times more for their coal than they would on the world market.⁶⁹ In 1995, the standard workweek was further reduced from 40 to 35 hours.⁷⁰

Rising unemployment was becoming a major economic and political challenge. In January 1996, government, industry, and labor leaders developed a “Fifty-Point Action Plan” to halve unemployment by 2000. In spring 1997, with unemployment figures at their highest level since 1933, nearly one in eight of Germany’s working population received some form of support. Massive layoffs by some of the country’s biggest firms spawned a feeling of insecurity. The ThyssenKrupp combination in March 1997, for example, called for the elimination of 25% of the 40,000-person workforce. As a result, German unions began reviewing wage restraints in an attempt to secure jobs. Germans were even tolerating changes such as longer shopping hours, discussing aviation and telecommunications deregulation, and considering retirement reform.

Go East?

One way to preserve the “made in Germany” cachet for high quality engineering, but partially avoid the country’s high labor costs, was to build a factory in the former Eastern Germany. However, that might leave Porsche with the worst of two worlds: the high cost/high rigidity of German labor and industrial relations framework, without its advantages of a trained and highly skilled workforce with years of experience in an export-oriented market economy.

In 1991, average wages in East Germany amounted to 46.7% of the West German wage level, while relative labor productivity was 31%. Seven years later these trends held true.⁷¹ In fact, a 1996 JP Morgan study found that although manufacturing sector wages in the East were lower than those of the West, they still approached the national average when it came to calculating the actual cost per item, because efficiency was so much poorer in the East.⁷²

Furthermore, East German workers were widely seen as less skilled and employed older machinery than their counterparts in the West.⁷³ The poor condition of the basic infrastructure, widespread environmental damage, and lower-than-expected levels of private investment in the East had complicated the process of economic integration. Private investment in eastern Germany was slower than expected mostly because of restitution and property rights issues. Indeed, nearly a decade after German reunification in 1989, economic and social integration remained incomplete. The one-to-one post reunification currency exchange level had made eastern German goods too expensive to be competitive as exports. Their former eastern European markets vanished. Reunification meant deindustrialization for many regions, and it strained German public finances.⁷⁴ Annual transfer payments to Eastern states reached around €90 billion per year. To contain inflation, the Bundesbank kept interest rates high, further dampening investment and economic activity.

Total employment in eastern Germany fell dramatically from almost nine million employed people to fewer than six million at the end of the nineties.⁷⁵ In 1997 eastern German unemployment was estimated at 20%, about twice the Western level, and even higher in some areas. Overall, in April 1998 4.4 million Germans were out of work, fully 11.4% of the country’s work force. Many viewed as futile the income support programs meant to stimulate the East German economy. To

attract investment, many firms establishing factories in former East Germany benefited greatly from subsidies. Wiedeking decried this practice, especially denouncing companies with “golden balance sheets” that accepted such handouts. Porsche ensured that it would accept no subsidies.⁷⁶

Political shifts were also afoot: former Communists, now reincarnated as the Party of Democratic Socialism (PDS), were expected to confirm a comeback in the region in the September 1998 elections.⁷⁷ Xenophobic parties of the far right were also expected to draw support from citizens disgruntled by the evolution in the former East Germany. Federal elections set for October 1998 were expected to mark the end of conservative Chancellor Helmut Kohl’s 16-year reign.

Despite all the problems, the town of Leipzig (population nearly 500,000) was a strong candidate for a new Porsche plant. Located in the German federal state of Saxony, the country’s sixth largest and one of its former eastern states, Leipzig had some attractive features. It would provide easy access to two major seaports (Emden and Bremerhaven). It had a brand new international airport and convention hall. Saxony’s 1997 per capita income was about three-quarters of the national average, with an average gross monthly wage per employee of €1,600, compared to the western state average of €2,100.⁷⁸ Furthermore, Saxony had a long industrial history, dating back to the 1830s. It boasted four state universities, five specialized colleges in business and technology, and numerous other educational and training institutions. Highly productive before World War II, the region had accounted for 40% of the former East Germany’s industrial output.⁷⁹ A Leipzig plant could source motors from Stuttgart-Zuffenhausen and axles from Braunschweig (located between Bremen and Berlin), and possibly other parts from the Volkswagen plant in Bratislava, Slovakia. See **Exhibit 7** for a map of Europe.

Partner with Volkswagen and Go Southeast?

Yet another option was to follow Volkswagen’s lead and build a new plant in Eastern Europe. In early 1998 Volkswagen moved its entire four-wheel-drive Golf production facility from Wolfsburg, Germany to Bratislava, Slovakia, where it announced an output of 120,000 units, nearly three times as many as the peak of 40,822 in 1997.⁸⁰ Bratislava, Slovakia’s capital and largest city with 450,000 of the country’s 5.3 million inhabitants, was located less than an hour from Vienna. French automotive group PSA Peugeot Citroen had recently chosen Slovakia as the location for its manufacturing plant in Central and Eastern Europe, rejecting bids from Poland and Hungary. PSA’s decision had helped Slovakia become one of the leaders in automotive manufacturing in Central and Eastern Europe.⁸¹ Labor cost per hour in the automotive sector were close to the Czech Republics, \$3.11 in 1996, falling to \$2.55 in 1997, before recovering to \$3.32 in 1998.⁸²

By spring 1998 Porsche was rumored to be negotiating with Volkswagen. The Piëch family already had strong ownership stakes in Porsche and VW, with Piëch officiating on Porsche’s supervisory board. Under the proposed arrangement Porsche would undertake the research and development of the SUV and Volkswagen would invest about \$657 million in the project.⁸³ The first SUVs would be available in 2002. Porsche intended to manufacture 20,000 SUVs a year and Volkswagen planned to make 80,000, probably in the Slovakian facility where it already made Golfs.⁸⁴ Of course, the Porsche SUV would target the luxury market at price points 40% to 100% above Volkswagen’s SUV, which would fall somewhere between DM 60,000 to DM 80,000.⁸⁵ Although VW and Porsche had longstanding historical ties, Wiedeking had to weigh the issue of being so closely associated with a mass production car maker as well as a cheaper SUV.

Alternatively, Porsche could explore another emerging automotive power, Slovakia’s neighbor, the Czech Republic. It had been among the leading recipients of foreign direct investment (FDI) in East-Central Europe in the 1990s, attracted by the country’s long manufacturing tradition and

relatively skilled, well-educated, and low-cost labor force.⁸⁶ Average labor costs in manufacturing were only about 10% of levels in the former West Germany, and its proximity to Germany and Austria encouraged cross border, export-oriented investments capitalizing on low-cost production. The Czech Republic also served as a bridgehead to East-Central European markets.

Although the Czech Republic was one of the larger Central and Eastern European countries, its relatively small domestic market made an ideal base for exports. Its central location provided easy access to all European markets including Russia. Compared to its immediate neighbors it had a well-developed infrastructure, as well as a dense network of automotive suppliers catering to Skoda, its national car company founded in 1895 and acquired by Volkswagen in 1991. With a 40-hour work week, and average hourly wages in the automotive sector around \$4 in 1998, a Czech plant near VW might prove a viable solution for SUV production. But while Skoda's reputation and reliability improved steadily under Volkswagen's ownership, moving Porsche's factory to the home of a lower quality car might mar Porsche's reputation for excellence and best-in-class craftsmanship.

Moreover, by 1997 the country's political and economic stability had deteriorated and investment conditions became increasingly uncertain. Annual GDP growth declined to 1.2%, the Czech *koruna* lost 21% of its value against the U.S. dollar, the inflation rate increased and privatization slowed. This situation contributed to a drop in FDI, from more than \$2.5 billion in 1995 to only \$1.3 billion by 1997. The British rating agency IBCA lowered the credit-risk rating for the Czech Republic in November 1997, and several multinational companies, including General Motors, Toyota and Coca-Cola, relocated their investments elsewhere.⁸⁷

Follow the Market?

In the late 1980s, the Ford Explorer legitimized the SUV as the quintessential American family vehicle. By the late 1990s the SUV market was deemed intensely competitive,⁸⁸ as many manufacturers strove to offer SUVs with car-like agility, the space of a mini-van and the utility options of a sport vehicle. Fortunately for owners of such large cars (SUVs weighed 4,000 to 6,000 pounds; cars 2,000 to 4,000 pounds), gasoline prices in the United States remained very low by global standards. In 1998 light trucks, including SUVs, captured 51% of the new U.S. vehicle market, double the share they had 20 years before, propelled by a strong economy, demand for roominess (some even had 10 cup-holders) and the perception of enhanced driver visibility and safety. Sales of high-end SUVs—those costing between \$43,000 and \$49,000—were expected to reach 300,000 in 1998 (up from 75,000 in 1995)⁸⁹ as baby boomers opted for Lincoln Navigators and Mercedes-Benz M-class SUVs. **Exhibit 8** shows SUV sale forecasts by region.

Fierce competition in luxury SUVs was dominated by major Asian players. Lexus, Toyota's luxury auto division, saw its small LX 450 SUV grow to nearly 30% of all U.S. Lexus sales in just a few years. The company was said to be considering a plant for manufacturing SUVs in North America. Acura (Honda), Infiniti (Nissan), and Mitsubishi already had luxury offerings in the U.S. market. Nissan's Xterra SUV, to be built in Tennessee, was planned for 2000.⁹⁰ Finally, Cadillac was expected to launch an SUV in late 1999, and Ford was testing a 19-foot "crew wagon" with a V10 engine.

Overall, U.S. car buyers were increasingly favoring European makes. Total vehicle sales were up 2% during the mid-1990s but European automakers, which accounted for only 5% of the total U.S. market, posted 24% gains.⁹¹ But Germany's luxury carmakers had suffered a few setbacks in the American market. First, the strong German mark significantly raised the entry-level price for German luxury cars, negatively impacting sales overseas. Next, higher-end Japanese models such as Toyota's Lexus and Nissan's Infiniti made design and marketing inroads that were attractive to consumers. Finally, the U.S. Department of State made the environment for German auto sales more inhospitable

by imposing a new luxury tax on all cars,⁹² and requiring more U.S.-made parts in German vehicles sold in the United States. This forced German manufacturers such as Mercedes, BMW and Porsche to increase their parts purchases from U.S. companies. In response, Audi was considering opening a new plant in North America, probably in the United States.⁹³

Prior German efforts to produce vehicles in the United States had met with mixed results. Volkswagen took over a plant at Westmoreland, Pa., in the late 1970s but the Rabbits produced there were plagued by quality problems. VW closed the plant a decade later after piling up \$1.5 billion in losses, a raft of customer complaints, and bad press.⁹⁴ The company's purchase of a former General Motors plant in Ohio, with a unionized local workforce, had also run into problems. VW had compounded its problems by hiring a largely American management, reasoning that a U.S. workforce would not respond to Teutonic discipline. The result was a failure to instill a respect for quality, further negatively impacting VW's reputation.

VW's challenges did not deter Mercedes-Benz and BMW. In 1995, BMW set up a plant in Spartanburg, South Carolina, that experienced strong success (see **Appendix**). In 1994, Mercedes-Benz selected Vance, Alabama, for the site of a \$300 million M-Class SUV plant. Initial production capacity of about 50,000 units a year would increase to 65,000 units after completion of a 1999 expansion.⁹⁵ With building a factory considered a "second step,"⁹⁶ Porsche had explored the possibility of producing its cars with Mercedes at the Vance facility. However, a potential deal collapsed in January 1997 when Mercedes demanded a stake in Porsche and Daimler head Helmut Werner stepped down. "The Mercedes decision put us back in charge of our own destiny," a Porsche manager noted.⁹⁷ Discussions with GM and Chrysler followed, though the latter had indicated that it would only make a deal with BMW.

While Porsche was weighing its options, German companies were pushing ahead to exploit opportunities in the North American market. NAFTA also created a new investment landscape. Direct investment by German companies in the United States reached \$7 billion in 1997—eight times 1992 levels—fueled by a strong American economy, a robust dollar, and the notion that a U.S. foothold was imperative to global competition.⁹⁸ Siemens, the German electronics giant, agreed to buy Westinghouse's non-nuclear power generation business in 1997 for \$1.53 billion; chemical manufacturer Hoechst AG took over American icon Marion Merrell Dow Inc. in 1997 for \$7.26 billion. In March 1998 Bertelsmann AG spent over \$1 billion for Random House, the biggest U.S. book publisher; by April 1998, more Americans (about 230,000) were working for companies at least partially owned by German corporations than by any other foreign nation. Daimler's purchase of Chrysler in May 1998 added another 94,300 to this total.⁹⁹

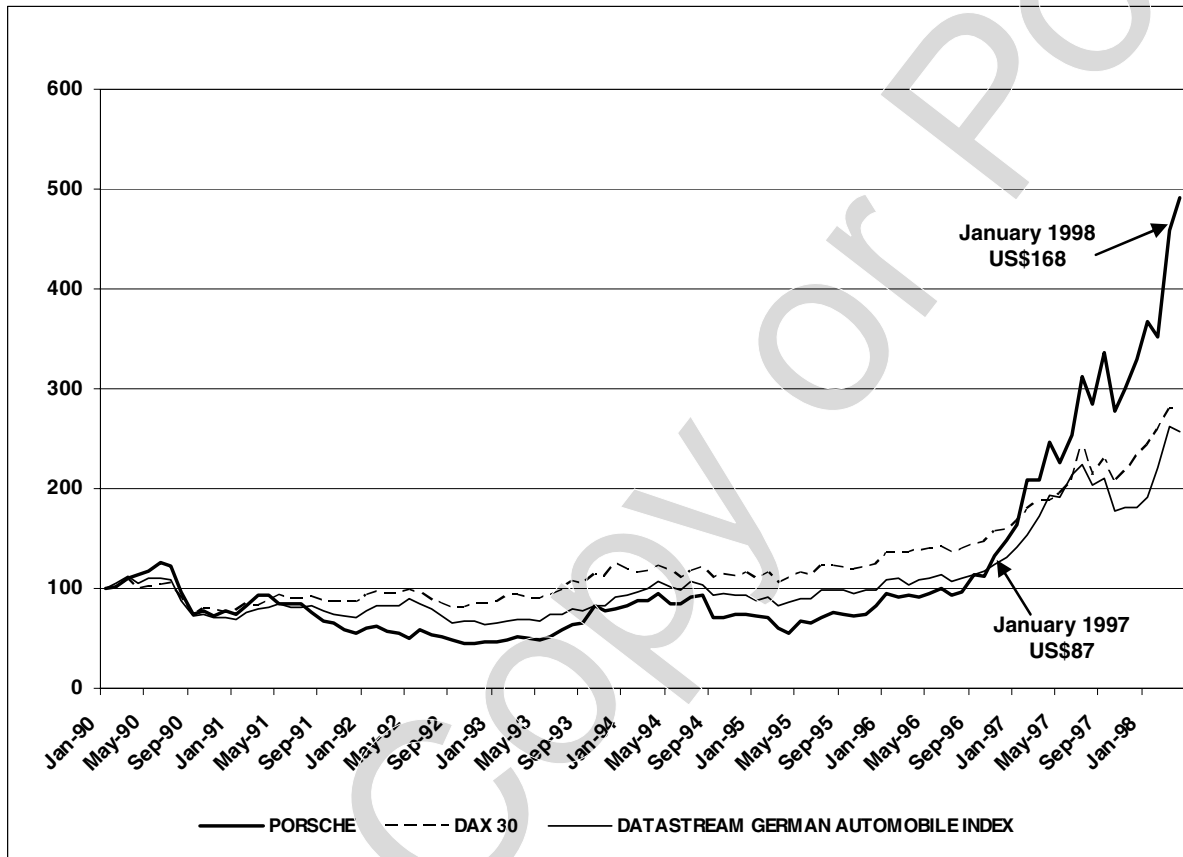
Doing the Seemingly Impossible

In spring 1998, Wiedeking indicated that, while his team did not know where and when to build the controversial SUV, "we know precisely all the labor, land, and building costs around the world. More or less every U.S. state governor has been here to put an offer on the table."¹⁰⁰ "We have to think much harder if we're going to do it ourselves," he continued. "The investment would be much higher."¹⁰¹ While Porsche could self-finance the investment, he explained, "What do we want to spend our money on? You can only spend it once and I don't like too much risk."¹⁰² However, Porsche's website described the company's mission as "combining the doable with the seemingly impossible."¹⁰³

The careful but decisive Wiedeking had surprised observers and investors before, and they expected more of the same in the future. Above all, Porsche had to remain true to the brand:

Porsche is fascination. Porsche not only promises a world of experience, Porsche's products and services guarantee it. This has produced a company culture which is transferred from the employees via the vehicles to the customers. The myth becomes reality. Only then can you feel the power that is unique to Porsche—both active and attractive. The brand thus embodies the epitome of sporty driving and thinking.¹⁰⁴

Exhibit 1 Porsche Relative Stock-Price Performance, January 1990–April 1998



Source: Thomson Financial Datastream.

Exhibit 2 Porsche Group Highlights 1993–1997

		1993–1994	1994–1995	1995–1996	1996–1997	1997–1998
Sales	€million	1,194.2	1,332.9	1,437.7	2,093.3	2,519.4
Domestic	€million	554.1	569.7	527.7	671.9	735.5
Export	€million	640.1	763.2	910.0	1,421.4	1,783.9
Vehicle Sales	Units	18,402	21,124	19,262	32,383	36,686
Domestic Porsche	Units	5,574	6,420	5,873	9,670	9,174
Export Porsche	Units	10,269	11,992	13,346	22,713	27,512
Other Models	Units	2,559	2,712	43	—	—
Vehicle Sales Porsche	Units	15,843	18,412	19,219	32,383	36,686
911	Units	13,010	17,407	19,096	16,507	17,869
928	Units	509	510	104	—	—
944/968	Units	2,324	495	—	—	—
Boxster	Units	—	—	19	15,876	18,817
Cayenne	Units	—	—	—	—	—
Production	Units	19,348	20,791	20,242	32,390	38,007
Porsche total	Units	16,789	18,079	20,242	32,390	38,007
911	Units	13,771	17,293	20,132	16,488	19,120
Carrera GT	Units	—	—	—	—	—
928	Units	633	470	28	—	—
944/968	Units	2,385	316	—	—	—
Boxster	Units	—	—	82	15,902	18,887
Cayenne	Units	—	—	—	—	—
Other Models	Units	2,559	2,712	—	—	—
Employees	At year-end	6,970	6,847	7,107	7,959	8,151
Personnel expenses	€million	343.6	363.7	392.1	464.4	528.2
Balance Sheet						
Total Assets	€million	795.6	836.7	951.4	1,249.7	1,490.9
Shareholders' Equity	€million	218.2	210.5	239.1	298.1	415.8
Fixed Assets	€million	351.4	353.2	482.5	565.3	579.6
Capital Expenditures	€million	63.0	83.9	213.6	234.8	175.8
Depreciation	€million	76.6	55.2	67.7	107.6	157.1
Extended Cash Flow	€million	—	—	—	—	413.1
Net income/loss before taxes	€million	-73.9	5.8	27.9	84.5	165.9
Net income/loss after taxes	€million	-76.8	1.1	24.6	71.3	141.6
Dividends	€million	1.0	1.1	1.8	13.0	21.9

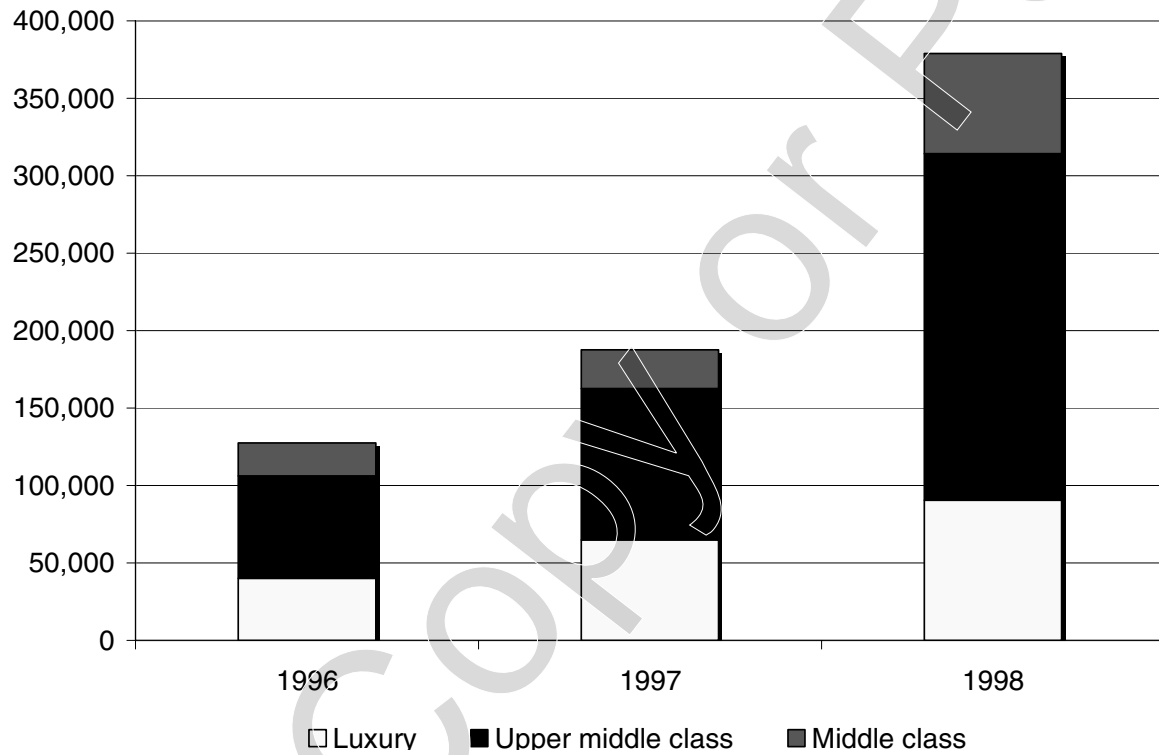
Source: Porsche website, accessed April 29, 2004.

Exhibit 3 Porsche Milestones

- 1875** Ferdinand Porsche born Sept. 3 in Maffersdorf, Austria-Hungary.
- 1909** Ferdinand Anton Ernst ("Ferry") Porsche born Sept. 19, in Wiener Neustadt, Austria.
- 1950** Porsche begins 356 production in Stuttgart-Zuffenhausen.
- 1951** The senior Ferdinand Porsche dies at age 75.
- 1953** Porsche introduces the 550, its first racing-specific car, which meets immediate success.
- 1964** Porsche introduces the 911. The company had produced 78,000 Type 356s in 14 years.
- 1972** Porsche KG becomes a joint stock company (AG). Ferry Porsche, chairman of the supervisory board, precludes all family members, including himself, from direct management roles.
- 1984** A third of Porsche AG's capital is offered to the public in the form of nonvoting preference shares on April 25. On Sept. 19, his 75th birthday, Porsche receives the honorary title of "Professor."
- 1989** Porsche AG presents Ferry Porsche with the birthday present of a two-seat Panamericana roadster, "a boy's car for an 80-year-old man."
- 1990** Butzi Porsche (Ferdinand A.) succeeds Ferry Porsche as chairman of Porsche AG's supervisory board. Butzi began his own firm, Porsche Design, in 1972.
- 1992** Wendelin Wiedeking becomes CEO of Porsche.
- 1996** Launch of the Boxster.
- 1997** Porsche introduces its all-new, liquid-cooled 911 at the Frankfurt Motor Show.
- 1998** The company prepares to celebrate 50 years of building sports cars with the Porsche name. Ferry Porsche, honorary president of the Porsche AG supervisory board since 1990, dies March 27 at the age of 88.

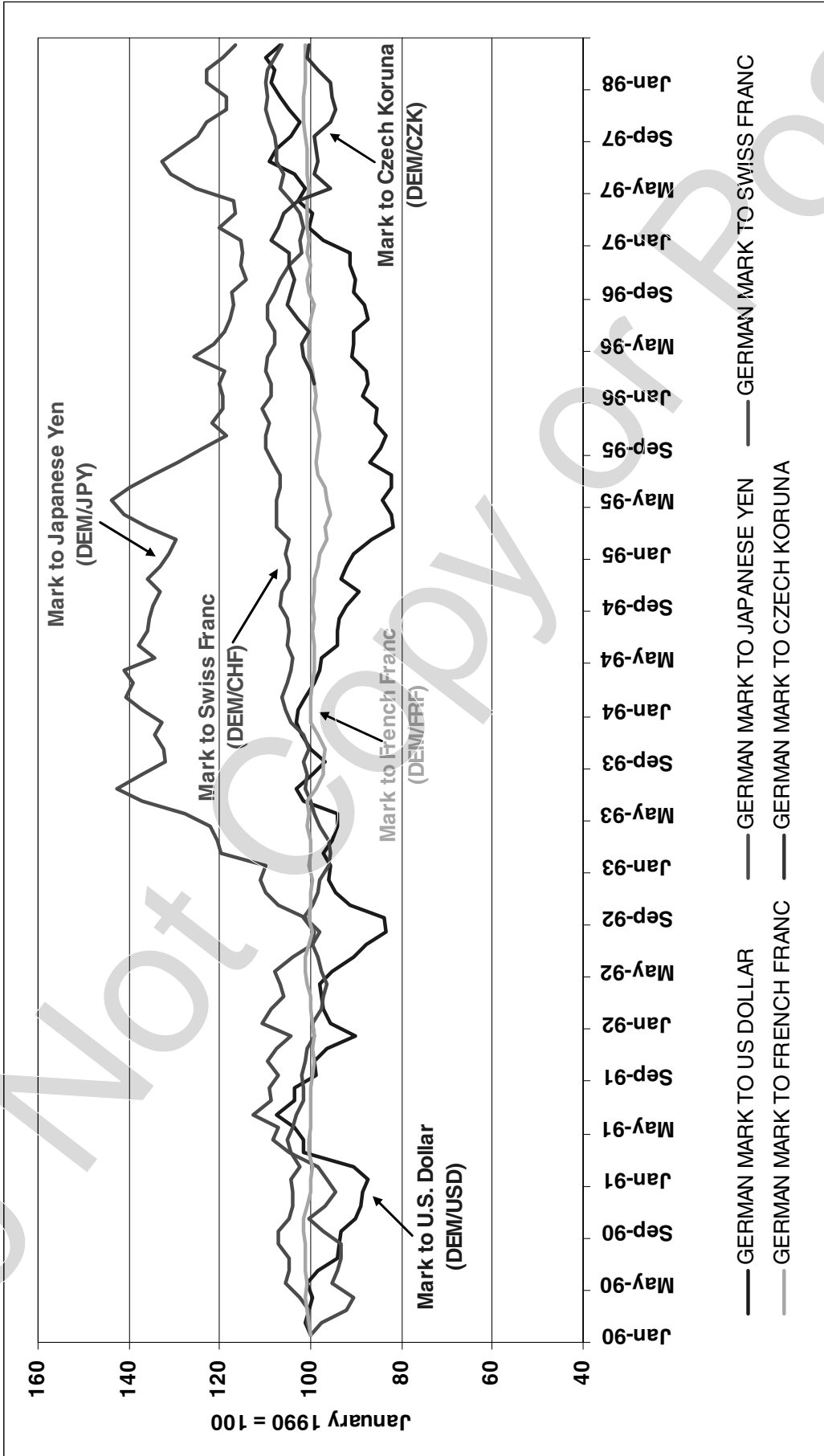
Source: "Porsche Timeline," *AutoWeek*, April 6, 1998.

Exhibit 4 Premium SUV Market Information (1996–1998 forecast) (in units)



Source: Global Insights.

Exhibit 5 Exchange Rate Fluctuations—DM to Major Currencies, 1990–1998



Source: Thomson Financial Datastream.

Exhibit 6a Hourly Compensation Costs in U.S. Dollars for Production Workers All Manufacturing

	1980	1985	1990	1995	2000
United States	9.87	13.01	14.91	17.19	19.76
Japan	5.52	6.34	12.70	23.73	22.27
Korea	0.96	1.23	3.71	7.29	8.19
Finland	8.33	8.25	21.25	24.32	19.45
France	8.94	7.52	15.49	19.38	15.70
Germany	12.21	9.50	21.81	30.26	23.38
Sweden	12.51	9.66	20.93	21.44	20.14
Italy	8.15	7.63	17.45	16.22	14.01
United Kingdom	7.56	6.27	12.70	13.78	16.45
Belgium	13.11	8.97	19.17	27.62	21.59
Netherlands	12.06	8.75	18.06	24.12	19.44
Austria	8.88	7.58	17.75	25.32	19.46
Portugal	2.06	1.53	3.77	5.37	4.75
Spain	5.89	4.66	11.38	12.80	10.78
Czech Republic	NA	NA	NA	2.53	2.83
Hungary	NA	NA	NA	2.69	2.79

Source: U.S. Bureau of Labor Statistics, <ftp://ftp.bls.gov/pub/special.requests/ForeignLabor/industry.txt>.

Note: Data for Germany Prior to 1995 for Former West Germany only. Nineteen ninety-five onward is for Germany (unified).

Exhibit 6b Hourly Compensation Costs in U.S. Dollars for Production Workers Motor Vehicles and Equipment Manufacturing

	1980	1985	1990	1995	2000
United States	15.96	19.71	22.48	26.55	27.99
Japan	6.97	8.09	15.68	29.12	27.77
Korea	1.15	1.62	5.48	10.85	11.75
Finland	NA	NA	NA	25.84	18.78
France	9.98	8.31	16.37	20.04	16.65
Germany	15.03	11.70	26.98	40.83	31.63
Sweden	12.70	10.14	21.13	22.30	21.27
Italy	8.45	8.19	18.29	17.22	15.12
United Kingdom	8.50	7.18	14.93	16.78	19.45
Belgium	14.27	9.87	21.30	30.36	23.46
Netherlands	11.64	8.21	16.29	NA	NA
Austria	NA	NA	NA	26.89	20.82
Portugal	NA	NA	NA	NA	NA
Spain	NA	NA	15.02	16.89	13.72
Czech Republic	NA	NA	NA	NA	3.20

Source: U.S. Bureau of Labor Statistics, <ftp://ftp.bls.gov/pub/special.requests/ForeignLabor/industry.txt>; <ftp://ftp.bls.gov/pub/special.requests/ForeignLabor/ind336naics.txt>.

Note: Data for Germany Prior to 1995 for Former West Germany only. Nineteen ninety-five onward is for Germany (unified).

Exhibit 6c GDP per head (\$ at PPP)

	1980	1985	1990	1995	2000
Austria	10,233.40	14,253.10	19,101.90	23,032.10	28,371.40
Finland	9,274.20	13,526.70	18,102.90	19,258.70	25,868.40
France	10,084.40	14,136.70	18,769.00	21,546.60	26,531.40
Germany	10,914.10	14,994.00	15,870.30	22,062.80	25,558.70
Italy	9,288.30	12,973.20	17,452.10	20,806.90	25,031.10
Japan	8,928.30	12,986.20	18,828.10	22,420.00	25,557.30
Netherlands	10,096.00	13,430.50	18,011.60	21,759.90	27,429.80
South Korea	NA	4,621.60	8,215.30	12,802.40	16,347.00
Sweden	10,307.00	14,526.70	18,740.70	21,324.40	26,887.50
United Kingdom	8,517.90	12,116.50	16,474.80	19,904.50	25,622.80
United States	12,249.50	17,697.50	23,200.10	27,752.60	34,770.20
Portugal	5,303.30	6,967.70	10,798.30	13,842.10	18,270.50
Spain	NA	9,085.40	13,105.30	16,054.80	21,208.90
Czech Republic	NA	NA	NA	11,772.70	13,807.90
Hungary	NA	NA	8,922.30	9,002.00	12,083.50

Source: Economist Intelligence Unit Country Data Database.

Exhibit 6d Hours Actually Worked per Week by Wage Earners in Motor Vehicle Manufacturing Industry

	1975	1980	1985	1990	1995	2000
Austria	33.3	30.5	34.7	33.9	33.8	33.6
Belgium	35.7	34.8	32.1	35.7	39.4	NA
Finland	34.0	32.8	31.0	31.6	39.5	40.3
France	41.6	40.5	39.5	40.3	36.6	36.4
Germany ^a	39.3	40.7	40.2	38.7	35.8	35.1
Italy	NA	NA	NA	NA	40.1	40.4
Japan	39.1	42.7	42.9	43.0	38.6	39.2
Korea	49.1	50.8	52.5	48.4	49.7	46.5
Netherlands ^a	41.1	40.9	40.5	40.1	38.2	37.6
Sweden	NA	NA	NA	NA	32.5	31.4
United Kingdom ^a	NA	NA	41.0	43.7	42.9	42.1
United States ^a	40.4	40.6	42.6	42.0	43.8	43.4
Portugal	41.6	37.8	35.4	NA	38.8	37.0
Spain	NA	NA	35.1	36.0	35.9	34.8
Czech Republic	NA	NA	NA	NA	39.5	41.8
Hungary	40.3	40.5	36.5	35.5	36.4	37.7

Source: International Labor Organization LABORSTA Database, <http://laborsta.ilo.org/>.

^aSeries is Hours per Week Paid to Wage Earners in Motor Vehicle Manufacturing.

Exhibit 8 SUV Sales by Region (actual and forecast)

REGION	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
AFRICA	-	-	-	-	-	-	108,960	122,526	131,645	39,862	32,629	33,214	35,418	40,329
ASIA	222,968	222,692	209,285	201,318	224,047	468,038	1,044,178	930,311	802,585	853,460	870,771	927,113	1,075,526	1,211,453
CENTRAL AMERICA AND CARIBBEAN	-	-	-	-	-	-	1,905	1,672	1,937	1,811	1,354	954	1,280	1,452
EAST EUROPE	-	-	-	-	-	-	117,543	146,086	127,012	129,675	138,157	150,850	142,375	164,572
MIDDLE EAST	-	-	-	-	-	-	53,786	65,862	83,183	74,246	79,328	97,167	116,676	132,105
NORTH AMERICA	929,066	909,577	1,133,137	1,379,806	1,556,075	1,753,404	2,255,726	2,615,633	2,988,725	3,434,365	3,616,924	4,019,735	4,329,701	4,660,994
OTHER	-	-	-	-	-	-	22,209	20,714	16,640	16,472	16,365	14,393	17,373	19,790
SOUTH AMERICA	-	-	-	-	-	-	85,436	121,205	121,741	101,523	104,024	125,456	100,498	117,531
WESTERN EUROPE	272,268	282,712	292,973	302,809	309,044	336,113	341,839	367,080	466,413	591,989	603,289	624,917	702,301	806,093
TOTAL	1,424,302	1,414,981	1,635,395	1,883,933	2,089,166	2,557,555	4,031,582	4,391,089	4,739,881	5,243,403	5,462,841	5,993,799	6,521,148	7,154,319

REGION	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
AFRICA	50,139	50,817	53,009	55,981	55,186	54,547	54,506	58,206	58,604	57,854	59,046	61,543	61,784	63,106	64,174
ASIA	1,235,298	1,415,096	1,568,204	1,797,321	1,976,001	2,047,728	2,128,306	2,254,793	2,352,158	2,465,585	2,582,540	2,700,761	2,808,717	2,960,189	3,081,801
CENTRAL AMERICA AND CARIBBEAN	1,714	1,911	2,336	2,493	2,685	2,263	2,572	2,463	2,267	2,455	2,997	3,259	3,241	3,460	3,687
EAST EUROPE	220,522	262,094	262,047	284,475	296,241	304,658	317,405	325,166	336,930	353,962	373,505	397,577	422,095	445,923	465,426
MIDDLE EAST	135,259	146,121	146,324	157,758	164,281	173,540	192,578	189,283	183,850	180,047	172,971	184,509	193,631	202,134	209,677
NORTH AMERICA	4,862,792	5,035,576	5,189,639	5,519,368	5,616,647	5,780,657	5,820,586	5,818,371	5,740,861	5,645,049	5,749,167	5,977,377	5,952,067	5,877,672	5,844,286
OTHER	20,741	21,183	21,253	19,633	20,615	20,946	21,935	21,742	21,679	21,573	26,870	26,210	26,308	26,652	26,393
SOUTH AMERICA	167,761	177,363	182,982	211,833	229,733	259,277	247,787	267,100	285,939	296,723	299,531	321,795	342,878	329,765	345,196
WESTERN EUROPE	925,777	957,200	1,034,870	1,153,726	1,287,680	1,294,649	1,308,540	1,329,588	1,315,833	1,320,816	1,348,453	1,390,120	1,419,399	1,418,548	1,399,331
TOTAL	7,620,003	8,067,361	8,460,664	9,202,588	9,649,069	9,988,265	10,094,215	10,266,712	10,298,130	10,344,064	10,615,080	11,063,151	11,230,120	11,327,449	11,439,971

Source: Global Insights.

Appendix

The BMW Precedent

In 1995 BMW became the 82nd internationally headquartered company to set up shop in Spartanburg, South Carolina (a town of 250,000 in a state of 3.5 million people). From 1995 onward, the \$400 million factory would make 30,000 BMWs a year, rising to 70,000 by the year 2000—more than BMW had sold in the United States in any year since 1988. BMW's CEO explained that the move aimed to maintain, secure, and build BMW's position in the American luxury-car market, the world's largest.¹⁰⁵ The decision to set up its first plant outside of Germany had been based on a combination of factors: the German plants were clearly going to burst at the seams and BMW was anxious to hedge an appreciating German Mark.

Spartanburg was conveniently located only a couple of hundred miles from a deep-water port and at the crossroads of many key U.S. rail lines and interstate highways. And crucially, Spartanburg was prepared to create an 800-acre contiguous site near the local airport by paying \$40 million to acquire land from more than 100 owners. Indeed, just three months before the decision was due, BMW requested that any prospective site have direct access to an airport big enough to accommodate everything from business jets ferrying company executives to and from Bavaria to jumbo transports loaded with car engines, drive trains, gearboxes and axles airlifted from the factory there. These could then be driven by semi-truck into the factory. The press reported that BMW refused to contemplate a comparable site less than a mile away, for \$20 million less. Shipping costs would drop by up to \$2,500 for each car made and sold in the United States.¹⁰⁶

As part of the deal South Carolina would extend the Greenville-Spartanburg airport's free-trade-zone status to the 900-acre plant site, meaning BMW would not have to pay duties on parts imported from Germany or elsewhere. BMW planned to export half of the plant's output to Japan and Europe. The cars would first be assembled mainly from German parts. As BMW transitioned to parts manufactured locally, it planned to rely heavily on the American units of trusted German suppliers such as Robert Bosch, producer of brakes and other parts. Even after U.S.-made parts reached 50% to 70% by the late 1990s, key components such as engines and axles would still come from Germany.¹⁰⁷

Assuming the UAW failed to organize Spartanburg, BMW figured that initial labor costs would be at least one-third lower than the \$28 an hour, including fringe benefits, that BMW paid at home. Lower wages plus production efficiencies could save BMW \$2,000 to \$3,000 per car, a significant number for cars starting at \$22,000.¹⁰⁸ However, as one BMW insider pointed out: "If the cost structure had been the only consideration, then Spain would have been the obvious choice," or Mexico, countries that could offer lower wages than the \$13–\$18 an hour BMW would pay in the United States.

Key to the decision seemed to have been "the uniformly friendly atmosphere" BMW encountered in the town. A number of suppliers, among them Hewlett-Packard, had already announced intentions to set up nearby factories to supply BMW with a variety of parts, in line with BMW's pledge "to do its best to attract suppliers to South Carolina." German auto manufacturers had always been keen on preserving the reputation of high-quality German engineering. BMW therefore paired German technicians and production experts with a handful of American executives, recruited from a plant Honda had successfully set up in Kentucky in the late 1970s.

Endnotes

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