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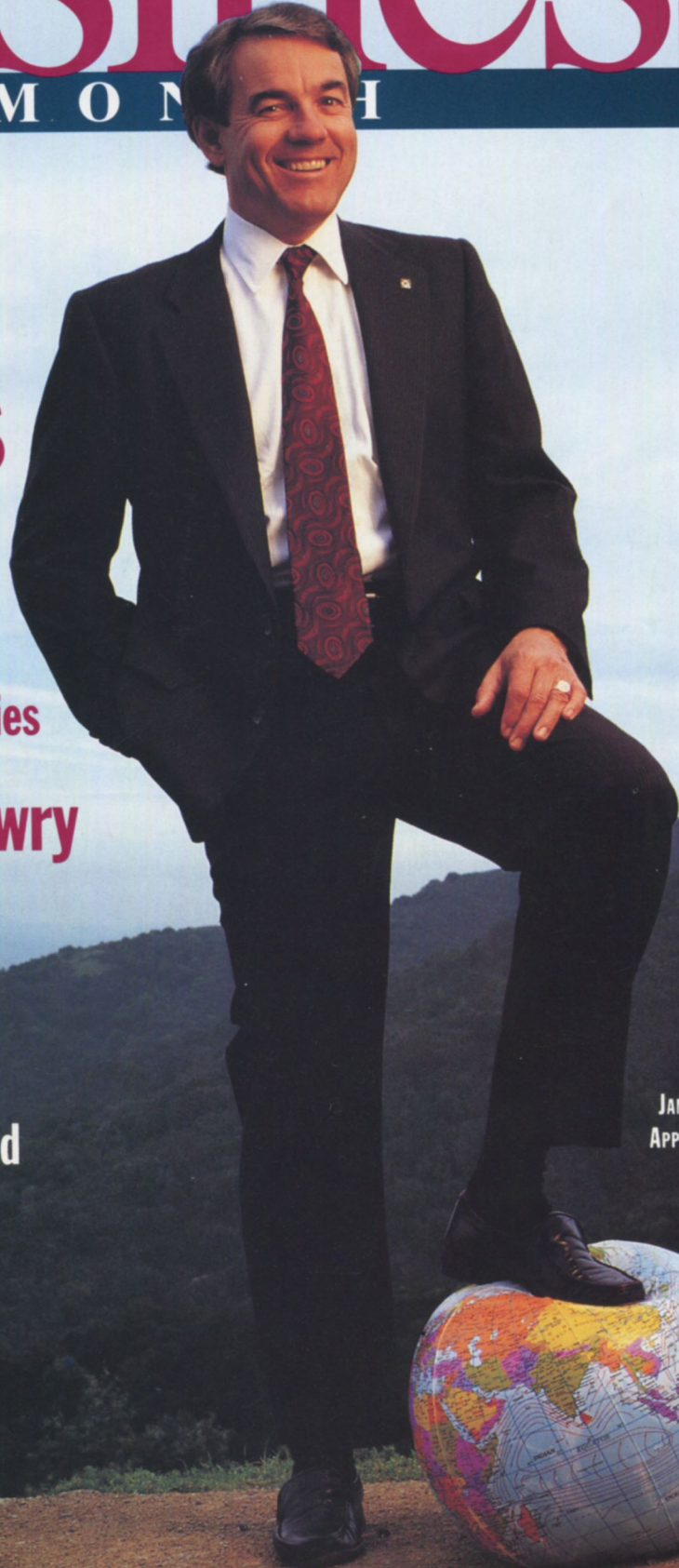
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JAMES MORGAN OF
APPLIED MATERIALS



THE LIFE AND TIMES OF A FAST-GROWTH CEO

For James Morgan, it's simply a matter of vision.

BY JOHN SEDGWICK

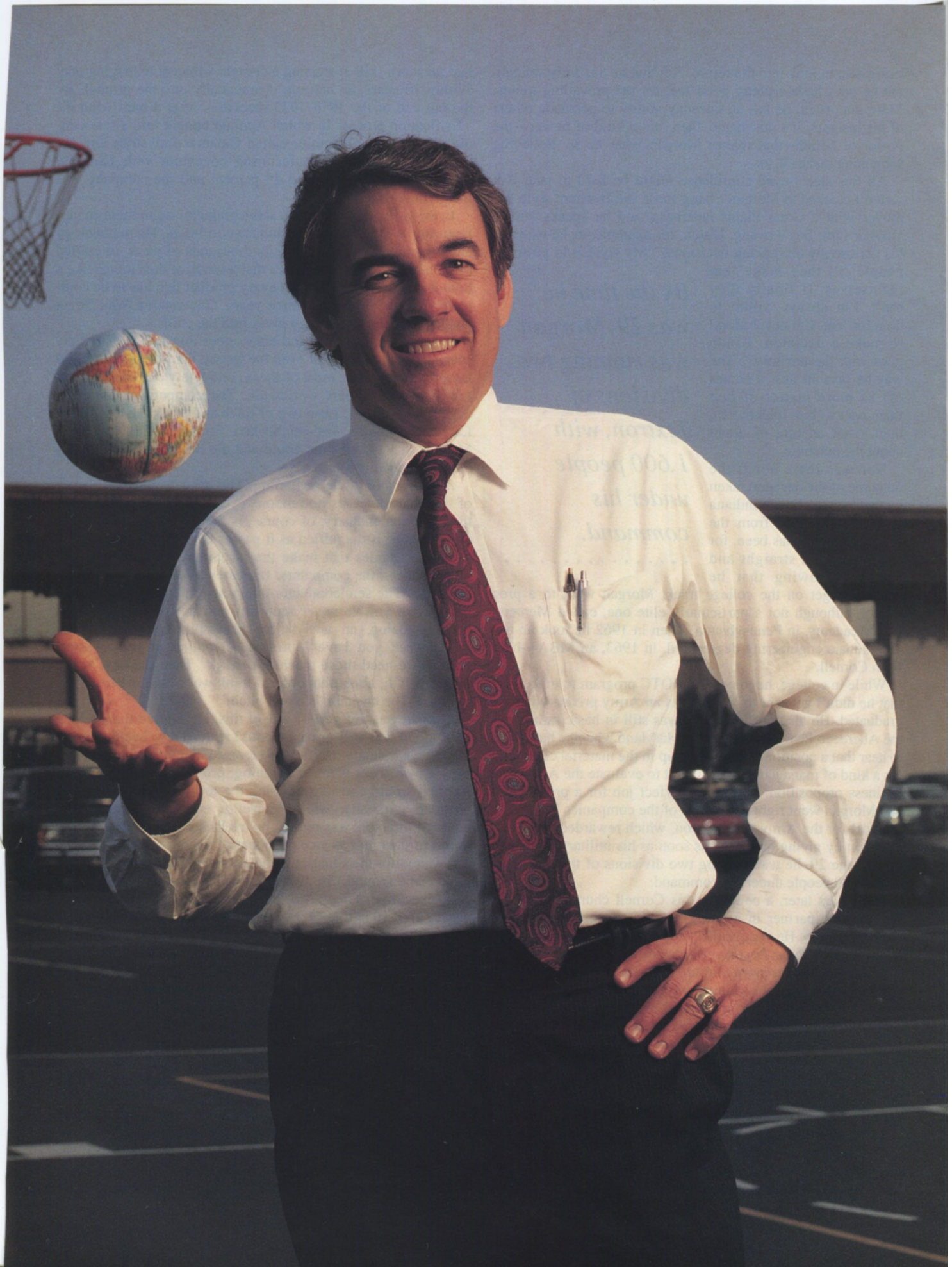
THE FIRST TIME JAMES MORGAN TOOK charge he was 13 years old. He spent that summer supervising the field hands who picked beans and corn for the family's cannery in the tiny farming town of Cayuga, Indiana. He was a surprisingly good boss for someone so young. So good, in fact, that at 16, he moved into the cannery itself as foreman, with considerable power over the company's 350 employees, nearly all of them significantly older than he was. He decided on his life's ambition that year. "I wanted to run something," he recalls. At the time, he had never heard the term chief executive officer.

At 21, he interrupted his studies at Cornell University and returned to Cayuga to take over the entire operation from his father, but he soon realized that a small cannery had no future. Large agribusiness corporations like Green Giant and Del Monte were squeezing out the smaller operations. Family is family, but business is business, so, much to the

dismay of his grandfather, who had founded Morgan Cannery in 1912, he decided to move on. He didn't just want to run something, he wanted to run something big.

Today, the Morgan Cannery is out of business, and James Morgan is the CEO of Applied Materials, a \$500 million semiconductor-equipment manufacturer in Santa Clara, California. It's not a *Fortune* 500 company—yet—but it is one of the fastest growing in America, and Jim Morgan made it so. The same single-mindedness and self-confidence that enabled a 16-year-old boy to supervise a cannery has transformed the once-fledgling Applied into a leader in its industry.

Self-confidence is not a trait one would expect to find in short supply among CEOs, but it is especially critical in running fast-growing companies, which must be able to move quickly to stay alive. Morgan's self-confidence and sense of mission border on the messianic. To his way of thinking, building a company is simply a matter of vision, of



being able to look into the future. Not that he has a crystal ball, but he does have a pretty good feel for the prevailing trends. More important, he has an uncanny ability to persuade others of his insights. It's not magic, then, but a kind of power—the power of belief—that makes Morgan what he is. Believing something makes it so.

All this steely-eyed confidence might be hard to take if it weren't cloaked in Morgan's hang-loose, Midwestern style. He moves with a Great Plains lankiness, and he speaks with a Hoosier farm boy's twang. Listen, for example, as he explains his philosophy on making decisions: "My style is to push my people till they make 'em themselves. If finally they can't, I'm always willin' to do it for 'em. I'm never afraid to make a decision. Kinda goes with the territory." The way he says all this, it comes off as more matter-of-fact than cocky, but underneath, there's not an iota of doubt about the outcome.

Nor was there about the outcome of the decision taken by that teenage boy in Indiana in 1954. The road from the farm to Applied has been, for the most part, straight and narrow. Knowing that he wanted to get on the college track, Morgan went to a prep school, although not a particularly elite one, called Mercersburg Academy, in Pennsylvania. Then in 1962 he took an undergraduate engineering degree and, in 1963, an MBA—both from Cornell.

While in college, he joined the ROTC program to make sure that he didn't get sent to Vietnam as an Army private when he graduated. He also got lucky. He was still in basic training at the Aberdeen Proving Grounds in Maryland when he happened to hear that a position was opening up in the matériel command for a kind of management consultant to evaluate the Army as a business proposition. It was the perfect job for a proto-CEO, and Morgan went right for it. One of the companies he used as a model for the Army was Textron, which rewarded Morgan's attention by giving him a job as soon as his military hitch was up. By age 29, he was running two divisions of the company, with 1,600 people under his command.

Five years later, a couple of his Cornell chums helped set him up as a partner in a San Francisco venture-capital firm called WestVen. He wanted the position because he had the peculiar idea of using it as a springboard into a chief-executive suite. This is not the normal route to the top. As a rule, a new CEO is drawn from the senior-executive ranks within the company. Only failing companies look elsewhere, but even they reserve for themselves the privilege of conducting the search, generally through a committee drawn from the board of directors. Thus, would-be CEOs customarily await their fate like U.S. vice-presidential candidates or old-fashioned Southern belles—they make sure their names are out there, and then they wait for the phone to ring.

Morgan reviewed hundreds of companies while at WestVen and finally narrowed the list to three, one of which was Applied Materials. At first glance, Applied certainly didn't seem like a winner. In all-too-typical Silicon Valley style, it had been founded in 1967 by an entrepreneur, Michael McNeilly, who

had far more skill at starting a company than at managing one. Within 10 years, he had run it practically into the ground. By the tail end of the 1974-1975 recession, after a whirlwind diversification process in which Applied bought into a semiconductor-wafer manufacturer called Galamar Industries and entered into a silicon-manufacturing colomventure with Fairchild Camera, sales had dropped 45 percent and the company was dangerously overextended.

Even in the best of times, semiconductor-equipment manufacturing is a nerve-racking industry to be in. The technology alone is mind-boggling, with its thousands of parts all crafted to such microscopic tolerances that a speck of dust looms like a boulder on the highway. And every product line has to be completely overhauled every three years. One veteran Wall Street analyst says the technology gives him the chills.

In fact, so much time and effort goes into a few, extremely specialized products that even the largest firms ship only a few hundred every year, most of them completely customized, to a few dozen customers worldwide. The competition for those customers is fierce: Lose two or three and that's the ball game. Large, apparently well-established firms such as Fairchild, Mostek, or Perkin-Elmer could and did disappear from the industry practically overnight.

And that's only the beginning. The most frightening aspect of the business is its horrendous cyclicality. At the retail level, the computer industry, of course, is hardly a steady state, but every tremor is magnified as it passes back up the daisy chain to the companies that make the machinery that produces the chips that run the computers. It creates a frightful whiplash at the end. "The semiconductor-equipment industry has ups and downs like you've never seen ups and downs before," says Stephen Balog, an analyst for Shearson, Lehman, Hutton. "One week you have Motorola screaming at you, 'Faster! Faster! We need those machines today!' Then the next week, they say, 'Oh, about that order, I think we'll hold off for a few months.' The business is a real bitch."

Morgan was unfazed by any of this. He figured that so long as Applied was still alive, he could restore it to health. He regarded the industry itself as a welcome challenge, and the company's own woes were, if anything, providential: They meant Applied would consider offering the top job to a 38-year-old outsider. (Actually, while McNeilly endorsed Morgan, the board of directors was put off by his lack of experience. It preferred to start him as vice president of operations. But Morgan just waited for the situation to deteriorate a little more, and Applied came around.) In 1976, Applied's board named Morgan chief executive officer; McNeilly would remain as chairman. It wasn't until 1978 that McNeilly resigned and Morgan was given that title as well.

The new chief wasted little time making sweeping changes. He dumped the sideline ventures and stripped the company back to the basics of semiconductor-equipment manufacturing. "That part was still losin' money," he notes, "but it wasn't losin' as much." Then he went to have a little talk with Applied's major lender, the Bank of America, which was worried about its \$4 million loan to an obviously troubled operation.

It just so happened that the Bank of America had been WestVen's financier and had acted as an informal go-between in securing Morgan the CEO job, so he was confident that the bank—looking to protect its \$4 million—was in effect his partner in the campaign to raise Applied from the dead. He was right; there was little resistance to his suggestion that it might be best for everyone if the bank, instead of calling in its loan, doubled Applied's line of credit.

By the time he was 29, Morgan was running two divisions of Textron, with 1,600 people under his command.

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Speed With Stamina: The Best of the Fastest

TWO HIGH SCHOOL KIDS GROW UP TOGETHER. Really grow. Each hits six feet, nine inches and goes to college on a basketball scholarship. Then their paths diverge. One works on his dribbling and passing and ends up in the pros. The other, getting by solely on his height, becomes a bench warmer.

So it is with corporations. Many pile up impressive sales gains; only an elite few develop into solid, all-around, enduring companies—good enough to make BUSINESS MONTH's list of top-10 growth companies.

How were they picked? By definition, a growth company's sales are rising at a rapid clip. Our 10, then, had to be one of the American companies with the hottest sales growth (page 45). But we were biased in favor of internal sales gains. Acquired growth often brings serious, unexpected problems. So Maxxam Inc., the fastest-growing company based strictly on sales over the last four years, is not among our top 10. It is a recently built conglomerate mix of lumber, aluminum, and real estate that hasn't proved its staying power.

A real growth company also sports rapid profit growth. We factored that in along with a company's return on investment and its debt load. To make the list, a company also had to reach a size that will help it survive when trouble erupts. Finally, we considered a company's competitive position and its momentum.

The last two factors put Microsoft at the top of the list by the slightest of margins over Compaq Computer. Microsoft has become more and more dominant among the independent companies in the computer-software field,

and its sales and profits continue to climb without interruption. Compaq faces severe competition in the personal-computer market—though to be fair, it always has—and its enviable growth record has stalled recently. Another small edge for Microsoft: It has no long-term debt.

It's no surprise that half of the top 10 are in computers. Sun Microsystems (see story page 42) makes workstations; Stratus Computer, "fail tolerant" systems of paired computers; 3Com Corp., local area networks. But three others—Reebok, Home Depot (do-it-yourself building materials), and Costco Wholesale (members-only outlets for consumer goods)—are in far more prosaic businesses. One of the best of the lot, JWP, Inc., simply installs and repairs electrical and mechanical systems for offices.

This is a very selective list. We had to go almost halfway down the table of 100 fastest growers by sales to come up with the 10 best companies overall. Corporations with very impressive numbers didn't make it. Seagate Technology, the disk-drive manufacturer, was one. Its overall growth rates mask the fact that its profits fell to practically nothing in the year ended last June. Genentech was a candidate until it decided to sell a controlling interest to Roche Holding Ltd., in-

dicating an inability to survive on its own. Lewis Galoob Toys was pretty small and basically a one-product outfit in a fickle business.

One company that was hard to leave off the list for sentimental reasons was that great old name, M.A. Hanna (story page 43). But Hanna's resurrection sprang from acquisitions—and rules are rules.

For the record, JWP and Sun Microsystems had by far the best sales growth of our top 10; Home Depot and Compaq Computer had a similar lead in profit growth. Microsoft and Compaq had the best return on their shareholders' investment.

Only history will tell if these 10 companies are as good as we say they are. Nobody on the list has a divine right to success. Some of the winners have piled up potentially troublesome debt burdens: JWP, Sun Microsystems, and International Lease Finance, which buys modern jet planes and leases them to airlines.

Reebok has to keep trying to outleap Michael Jordan. Home Depot and Costco confront tightfisted shoppers. All eyes are on Compaq as it tries to recover from the first serious setback in its short history. Stratus Computer and 3Com have reached something of a critical mass but could still be steamrolled by giant corporations; 3Com right now is trying to regain lost momentum.

But meeting competitive challenges head-on is what made these companies the best.

THE TOP TEN

- 1 Microsoft Corp
- 2 Compaq Computer
- 3 JWP Inc
- 4 Sun Microsystems
- 5 Home Depot
- 6 Reebok International
- 7 Stratus Computer
- 8 Int'l Lease Finance
- 9 3Com Corp
- 10 Costco Wholesale

That done, Morgan announced what was undoubtedly the biggest surprise of all. The company was going to invade Japan. His first foray was a joint venture in 1979, only three years after he had taken over a company on the verge of financial collapse. Six more years, and Applied Materials Japan opened a plant next to Tokyo International Airport. One-third of the initial capital came from the Japanese Development Bank, an agency of the Japanese Government, its first cash loan to an American firm.

In hindsight, of course, this move seems perfectly obvious,

since so many of the customers for Applied's chip-manufacturing equipment are now Japanese. At the time, however, Japan was not at all a major player in the semiconductor industry. Most of the companies that Applied was selling to were American, so it made better sense to stay put. At least, that's what all of the company's domestic competitors were doing. But Morgan could see that the big U.S. electronics companies—IBM and Texas Instruments, for example—were already established in Japan, and he figured it would pay to be the first in his industry to make the move. "I've always believed in being early into

new markets and new products," he says, "because people appreciate you when you're early. Somebody coming late is just another guy trying to make a buck."

That was probably the most testing time for Morgan, but to judge by the results, he came through pretty well. Currently, Applied derives 45 percent of its sales from Japan, almost three times the industry average, and it actually outsells the Japanese in their own country in three out of four product areas. It has moved into Western Europe, Korea, and Taiwan as well. In going global, Morgan managed to leapfrog ahead of the competition into what would be the hottest growth markets. He also achieved the necessary scale for funding the world-class research and development and field service and sales operations that have proved critical to Applied's growth. Globalization, in short, gave him important leverage. "That's the company's genius right there," says Balog.

THINGS WERE BEGINNING TO SETTLE DOWN WHEN THE inevitable recession descended on the industry in 1985. Morgan always saw such slow times as an opportunity to push R&D, and when this one hit, Applied was already trying to develop a machine that could manufacture a more reliable wafer faster. Now the project could move ahead quickly. But there were different schools of thought within the company on the best technology. The marketing chief, Robert Graham, wanted to invest in a system designed to crank out batches of chips 25 at a time. Others thought the future lay in a superfast, one-at-a-time, multiple-chamber system. The batch technology existed; the other was a dream. For a growing company like Applied, there was no room for error. Morgan had to bet the company on one or the other, and emotions on both sides were high. But, as Morgan dryly notes, "I didn't do a poll."

The decision came down to short term versus long term. The batch system was for the present; the multiple-chamber approach was for the future, since it allowed the production of customized recipes for individual wafers, and that appeared to be the emerging need among chip manufacturers. The answer was obvious: Morgan chose the future.

Now the only question was whether his technicians could produce such a thing. Despite the industry recession, he jammed down the accelerator on R&D spending, pushing Applied's expenditures to number four in the whole electronics industry as a percentage of sales. The result was the hot-selling Precision 5000 series, which pioneered the multiple-chamber process. It has been praised by the semiconductor-equipment manufacturers' trade organization, VLSI, as the most successful piece of capital equipment ever produced in the industry.

Graham was keenly disappointed with Morgan's decision. Then in 1986, when he was passed over for company president in favor of Jim Bagley, Graham left to head up a new company called Novellus Systems based on the batch technology he had tried and failed to press on Morgan. Now Novellus is nipping at Applied's heels, occasionally lapping up a major order that

Applied would have liked, but Morgan betrays no resentment over the development. "That was a fair deal," he says in only slightly begrudging tones. "Bob's been a good competitor." He pauses. "Now, if he'd taken the technology from Applied Materials and gone, I'd have a big problem with that. But I don't have a problem with a good competitor."

Maybe so. But there are many analysts who see Novellus more as a worrisome competitor for Applied. "Novellus is very hot right now," Balog says. "It did \$65 million last year. And that is \$65 million that Applied might have had." McNeilly agrees. "I would have tried harder to hold on to Graham," he says. Nevertheless, the decision had to be made, and whatever his reasons, Morgan made it. "It is almost impossible for CEOs to be completely candid," says Arizona State management professor Mark Pastin. "Not to their boards, not to their underlings, not even to their spouses." The CEO cannot express doubts or ask questions freely. If the company is having trouble with a new product, he cannot go to the board and ask what it thinks he should do. Nor can he go to the division head in charge of the product to express any reservations. If he does, résumés will start flying.

Morgan claims that he has not experienced much trouble in this area because he rarely has any doubts about what to do. "I have never thought of asking the board. My job is to tell them what the right thing to do is," he says.

So how does Morgan know what to do? How does he make the kinds of decisions that have made Applied that rare thing, the truly well-managed company? Ask him and he will say that he just does what's right for the company. For a man of such convictions, life is pretty simple.

By the same token, if you ask him why he wants to run a company like Applied, he'll look perplexed for a second and say it's because he always has. Not for the standard trappings of success. He rides coach on commercial airlines rather than cruise in style aboard a company jet, uses the vending machines in the employee cafeteria rather than take his meals in an executive dining room, works out of a small, modestly appointed (one associate called it "Southwest meets the Orient") office in a manufacturing building rather than any more exalted quarters down some mahogany hallway. His salary is set at the 75th percentile of all the companies in his industry, currently about \$350,000 a year, and he receives a bonus if the company reaches certain goals. "That way, you get more, the better you do for the company," he says. Last year's bonus brought his total earnings to over half a million. He plowed most of the money back into company stock.

And while it is conventional for CEOs in more sedate industries to put in a variety of guest appearances on the boards of other corporations, charities, colleges, and cultural groups, Morgan limits himself to those boards where his presence can actually accomplish something rather than merely win him Brownie points for showing up. Because of his near-total identification with the needs and aspirations of Applied, most of his goals are purely business related, but he succumbs to the appeals of an occasional charity. He serves on a board pushing for tort reform in California to reduce the excess lawyering that is one of Morgan's pet peeves about American business. He joined the President's National Advisory Committee on Semiconductors—along with such electronics-industry luminaries as Ian Ross, president of AT&T's Bell Laboratories; Charles Sporck, CEO of National Semiconductor; and Jerry Junkins, chairman of Texas Instruments—to help guide national policy on such major consumer-electronics projects as high-definition television. "That was a 'your country calls' kind of a thing,"

"I have never thought of asking the board of directors what to do. My job is to tell them what the right thing to do is."

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his PR director, Tom Hayes, says almost apologetically. And he serves with Sony Chairman Akio Morita on the Japan-Western Association, designed to foster relationships between Japan and the American West.

Partly, of course, Morgan's low profile is merely the trimmed-down Silicon Valley style. But then, he set out to run something, not rule it. He derives enough satisfaction simply from being in charge. There is also a point to his no-frills style: He wants to reduce the distance between himself and the employees on whom the success of his effort depends. "Too much formality gets in the way of communicating," he says. In large, established companies, one can ascend to the top of some grand tower to take the detached view; in smaller, growing companies, it is essential to stay close to the trenches, to keep abreast—personally—of each day's developments. Morgan often speaks of "porpoising" down into the company to check things out at the lower depths, which means he spends much of his time patrolling the corridors.

And he arranges his schedule around the far-flung time zones of his growing empire—calls to Europe in the morning, calls to Japan at the end of the day. Big as Applied has become, it is important to him to stay close to "the people." He insists on being called Jim by all of his 3,300 employees, and to show that he's no better than they are, he proudly wears a nerdy pin adorned with the letter Q on his lapel to show that he, too, supports the "quality process" he initiated for the company. (Fortunately, he has a sense of humor about his quality mania. At one company get-together, he dressed up as "Quality-man," with a big Q emblazoned on his chest.) In this, his attitude is nearly Japanese, and it flies in the face of the old-style corporate caste system in which the CEO is Louis XIV and the employees are the mob.

Still, one can see some troubles looming as Morgan strains to be involved in every aspect of the business—he even selected the exact shade of blue for the Applied Materials logo. He is usually one of the first ones in the office (thereby obviating any need for a private parking space) and one of the last ones out every day. But there is only so much one man can and should do. As Arizona State's Pastin notes, the best-managed companies are the ones in which the chief executive takes 25 percent of his time to be alone and think. It is hard to see where Morgan is going to get that. At a certain point, some detachment is necessary.

Morgan could step back if he followed his own theory of management. In a perfect world, he says, he would act less like a CEO and his employees more like one. By this he means that he could skip the kingly routine if his employees could learn to operate from the big picture that was once thought to be visible only from the throne in the corner office. His employees should be as attentive to the full range of corporate interests, from

sales to technology to manufacturing, as Morgan is. In short, they should increase their awareness and enlarge their vision to the point where it takes in the whole company's perspective, not just their own.

There are many ways to measure how much of his vision Morgan has accomplished at Applied. Sales, for instance, have risen from a few million when he took over to \$500 million in 1989 (10 percent of the total semiconductor-equipment market), and the company has set its sights on \$1 billion by 1993. He has assembled a leadership team that is the class of the field. But the company's stock price might be the most impressive yardstick (although Morgan thinks the stock should be doing better and spends considerable energy railing about how much, in his words, "it sucks"). Over the last decade, many companies in the semiconductor-equipment industry saw their stock value drop. A half dozen outperformed a passbook-savings account. Only one has beaten the market, and that one is Applied Materials.

Analysts like to cite the different needs of growing companies

and mature companies to explain the essential distinction in the managerial styles of CEOs. The younger the company, the brasher the CEO; the older the company, the more "statesmanlike." As Applied closes in on the *Fortune* 500, Morgan talks more about maintaining the essential order of the company so that it can afford to do the "mavericky" things that growing companies have to do. Nowadays, however, a more important factor in dictating a CEO's style than company age may be the global competition (supplemented in many cases by the threat of a takeover) that is hitting many U.S. companies at every stage in their life cycles. As the electronics industry has found, those pressures

can have a profound meritocratizing effect on the corporate culture, forcing companies to adopt what they call at Applied a "lean, mean, where-the-rubber-meets-the-road operation." Such companies have no room for hollow crowns.

Actually, the way Morgan sees it, if he did his job perfectly at Applied Materials, he would disappear entirely. He would have instilled the CEO perspective in the corporation, and he could simply dissolve into that porpoise-filled sea. But as it is, he has too many plans. He is thinking of pushing the company into Eastern Europe. He has been following the developments there with considerable interest since he went to the Soviet Union in 1988 with the Young Presidents Organization and sat down with one of the state's chief economists. "It was just like Applied when I first got here," he says. "A disaster." And there's another line of products to bring out. And maybe expanded operations in China. Somebody has to be in charge of all that.

John Sedgwick is a free-lance writer whose work appears frequently in GQ and Esquire.

