

**THE ECONOMY WHY
JOB GROWTH MAY
STAY SLUGGISH**

**MARKETING
YAO MING IS THE NEW
GLOBAL STAR**

**TECH THE MAN WHO
COULD HAVE BEEN
BILL GATES**

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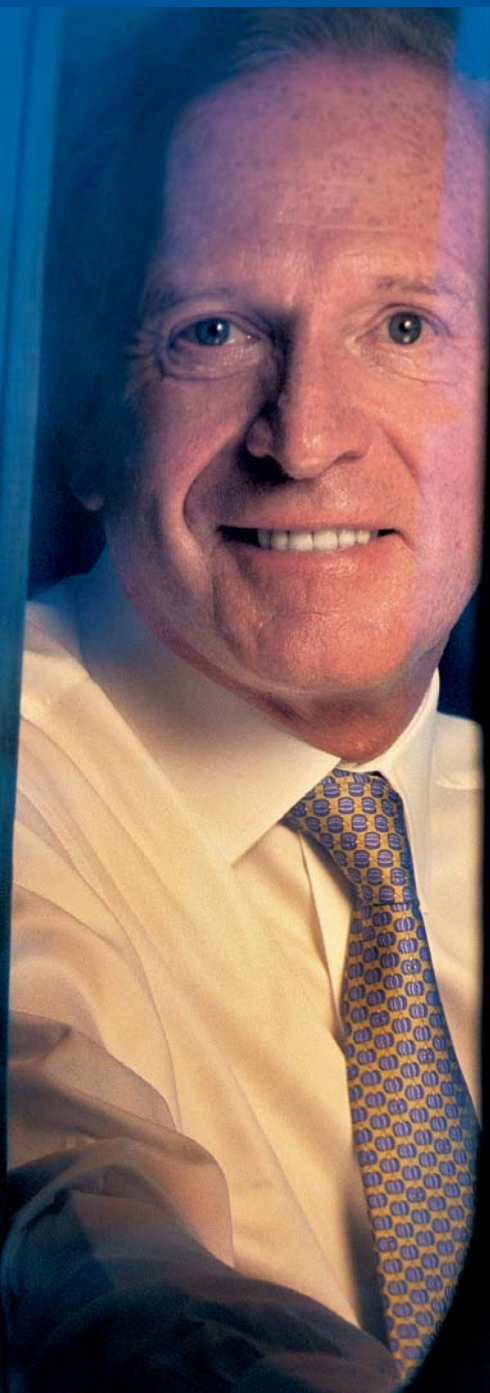
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THE UNSUNG CEO

United Technologies'
George David runs a
\$31 billion company
that outguns GE in
shareholder return.
Who is he—and
how does he do it?

BY DIANE BRADY

David inside
a Sikorsky
Marine One
prototype



GREGORY HEISLER

MANAGEMENT



THE UN

A large Sikorsky helicopter is parked on a wet tarmac at dusk. The helicopter is silhouetted against a dark blue sky with some light clouds. The wet pavement reflects the helicopter and the sky. In the background, there is a large, light-colored hangar building.

"IT'S WIN OR DROP DEAD" The boss checks out Sikorsky's contender for the new Marine One Presidential chopper

PHOTOGRAPH BY GREGORY HEISLER

United Technologies' CEO George David runs a \$31 billion company that outguns GE in shareholder return. Who is he—and how does he do it?

BY DIANE BRADY

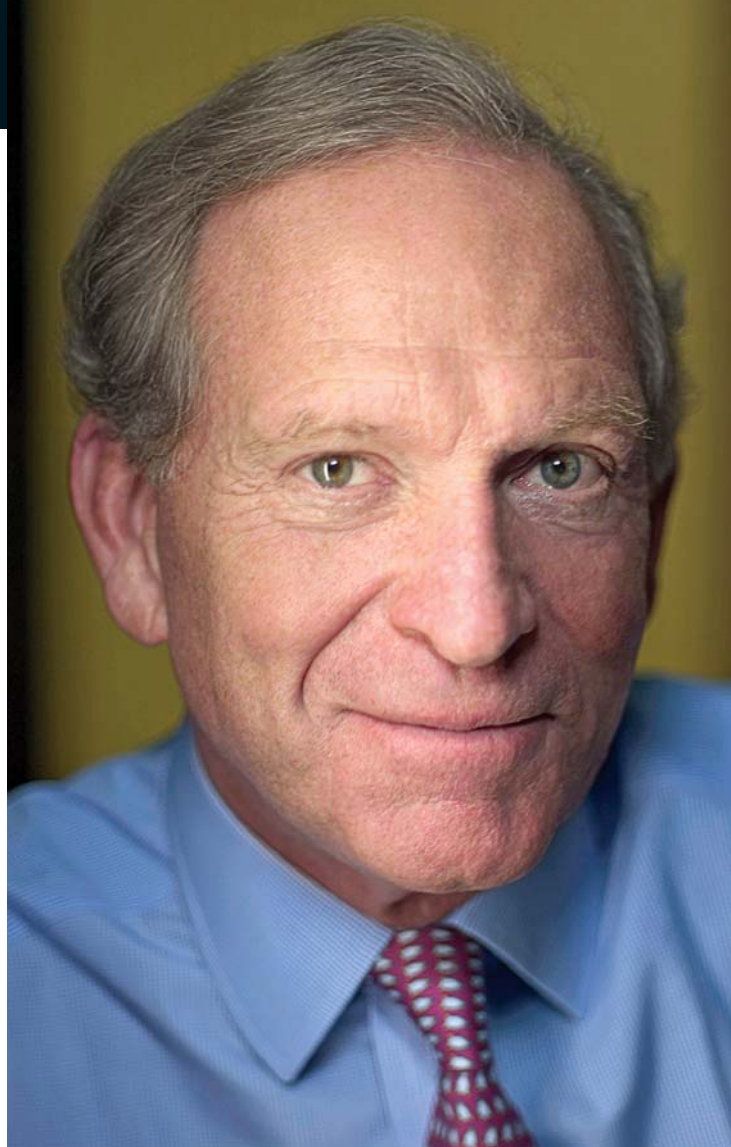
SUNGCEO

EVEN TO HIS CLOSEST friends, George David of United Technologies Corp. comes off as a study in contrasts. He will speak passionately about the problem of the country's growing income gap between rich and poor before a crowd of factory workers at UTC's Carrier air conditioner plant in Collierville, Tenn.—though he himself took home a pay packet worth \$70 million last year. When one man raises his hand to ask bluntly about local jobs,

David launches into a monologue about relative labor values in a global economy. Before anyone can write off their leader as heartless, David's eyes tear up while recalling Yuzuru Ito, the late quality guru who helped him formulate his guiding principles of leadership. Then again, while touring the plant, he has barely a glance for the crowd of beaming employees—many of whom have never met him or anyone else from headquarters before. Perhaps the raised eyebrows of one line worker as the boss swings by his station says it all: Who is this guy?

Getting a handle on George David isn't easy. An ardent student of both history and management, he has the air of an academic and talks like some modern-day Plato in a production plant. But David, 62, is more than just a head-in-the-clouds theorist. He has transformed his old-line industrial conglomerate into a \$31 billion powerhouse of productivity with relentless attention to detail. He has taken what are essentially commodity products such as elevators and air conditioners and, thanks to constant innovation and superior technology, turned them into high-margin businesses that dominate from Boston to Beijing. He pontificates on abstruse historical and macroeconomic issues one minute and obsesses over a tiny improvement in the farthest corner of the UTC empire the next. And while he can terminate thousands of workers at a stroke in the name of efficiency, he also has crafted one of the most progressive employee education programs

In a decade, David has more than quadrupled earnings



in the world—even extending benefits to laid-off workers.

Together, these disparate impulses have yielded big results. In David's decade at the helm, in fact, this philosopher king of manufacturing has more than quadrupled earnings per share and outperformed even the mythic General Electric Co. in returns to investors. UTC's total returns have risen about 600% in the past 10 years, vs. roughly 400% for GE. Operating margins have expanded from 6% to 14%. From a steady 3% profit growth when he became chief executive in 1994, UTC today more often delivers double-digit earnings. In the first six months of this year, net income grew 25%, to \$1.4 billion, while sales increased 26%, to \$18.3 billion, in part because of tax settlements and the \$1 billion acquisition last year of building-security giant Chubb PLC. But strip all that out, and underlying growth was still 9% in the first half. Unglamorous though it might be, Hartford-based UTC has been among the top five performers in the 30 companies that make up the Dow Jones industrial average for the past three years. Yet David has won little fame for his achievements, unlike former GE chief Jack Welch or even former Honeywell International Inc. CEO Lawrence A. Bossidy, who says with a laugh: "Maybe he's just humbler than us."

David has racked up these results despite his penchant for controversial investments that don't directly benefit the bottom line, at least not within any normal time horizon. His

SCHOLAR CEO
David has given UTC workers the wherewithal to study

Employee Scholar Program costs a cool \$60 million a year, and workers don't even have to tie their studies to the job. Anything goes, from medieval poetry to medical training, with UTC picking up the tab, including the cost of books and time off. David also likes to move early—very early—to fund new technologies, such as fuel cells. Such efforts drain millions from the bottom line each year. Yet David believes these initiatives are the seed corn that will grow into businesses that can sustain the company long after he has left office. Ari Bousbib, who heads up UTC's Otis Elevator Co. unit, argues that such investments are better suited to venture-capital companies than manufacturing conglomerates, but, he says, "George looks at a 20- to 50-year time frame."

Proud to lead a conglomerate

DAVID ALSO HAS EMBRACED a corporate structure that many had written off, the industrial conglomerate. UTC's widely varied corporate offspring include Hamilton Sundstrand aerospace systems, Sikorsky helicopters, and the recently acquired Chubb. These units derive little of their identity from UTC. While being called the head of a conglomerate may drive GE's Jeffrey R. Immelt crazy (he prefers "multi-business growth company"), it makes George David proud. In his view, "balance works." His company is just as diverse when it comes to geography. UTC's operations span the globe, with some 2,000 offices outside the U.S.

What ties it all together is that each of UTC's businesses involve basic manufacturing—operations that are susceptible to quality improvements, efficiency improvements, and technological improvements. The ability to continually wring out incremental gains in those areas—David calls them "process disciplines"—is UTC's greatest strength.

When asked how much new technology has contributed to the productivity revolution at UTC, David puts his thumb and index finger together in a circle and says, "zero." He adds that

HEAVY METAL

How UTC's major units stack up against the competition

Otis Elevator Co. Grade: A+	Flight Systems GRADE: A-	Carrier GRADE: B+	Pratt & Whitney GRADE: B-	Chubb GRADE: C
Revenues \$7.9 billion	Revenues \$5.7 billion	Revenues \$9.2 billion	Revenues \$7.5 billion	Revenues \$1.1 billion
Operating Profits \$1.4 billion	Operating Profits \$785 million	Operating Profits \$911 million	Operating Profits \$1.1 billion	Operating Profits \$55 million
With thousands of sites and 79% of sales outside the U.S., the world's largest elevator and escalator company gives its parent an incredible global reach. And its record of constant innovation and smart acquisitions keeps competitors at bay.	The maker of Sikorsky helicopters and Hamilton Sundstrand aerospace systems is at the top of its game. But competition looms, including a big fight to hold on to the contract to make and maintain Marine One, the Presidential helicopter.	Once the most dysfunctional unit at UTC, the massive air conditioning, ventilating, and heating systems division has become an evangelist of David's productivity push. Still, those plant closures produce a lot of pain for the workers.	Its engines continue to power the world's top fighter jets. Recent losses of big commercial engine orders, though, mean that Pratt & Whitney could become a smaller piece of the UTC pie.	If you're already selling elevators and air conditioners to customers worldwide, it makes sense to throw in fire detection and security systems. But David has to whip this acquisition into shape.

Financial data is for 2003 Data: United Technologies Corp., BusinessWeek

MANAGEMENT

technology has been critical to product innovation and improved communications, but the bulk of gains in the plant comes from better processes, not better machines. Says David: "It's mostly a mindset."

That focus on process is one reason the company shuns financing and other businesses to which those skills don't apply, as well as businesses that simply have no pricing power. The focus on continuous improvement allows UTC to extract gains, even when times are tough. Marvels Steve DeFrancis of investor Mellon Private Wealth Management Group: "They went through the whole downturn without missing a beat."

As the patrician leader steps into his second decade in charge, the challenge is how to make the beat go on. He has no plans to leave the job for at least several more years (though he says the board reviews succession plans at every meeting), and he has set lofty goals for the rest of his tenure. Foremost among them is to push UTC's operating margins as high as 20%. It's a high bar, but David insists that UTC has a long way to run in boosting productivity. For one thing, few plants have yet to fully streamline, says Tesfaye Aklilu, vice-president of quality and manufacturing. "We are in the early stages of our lean journey." Acquisitions will also help. Take Chubb. Not only do its security and fire-alarm systems fit nicely with a company that sells elevators, heating, and air conditioning, but its 5% margins give UTC room to improve. And David says a constant influx of new technology from UTC's labs will increase the efficiency of products and manufacturing techniques.

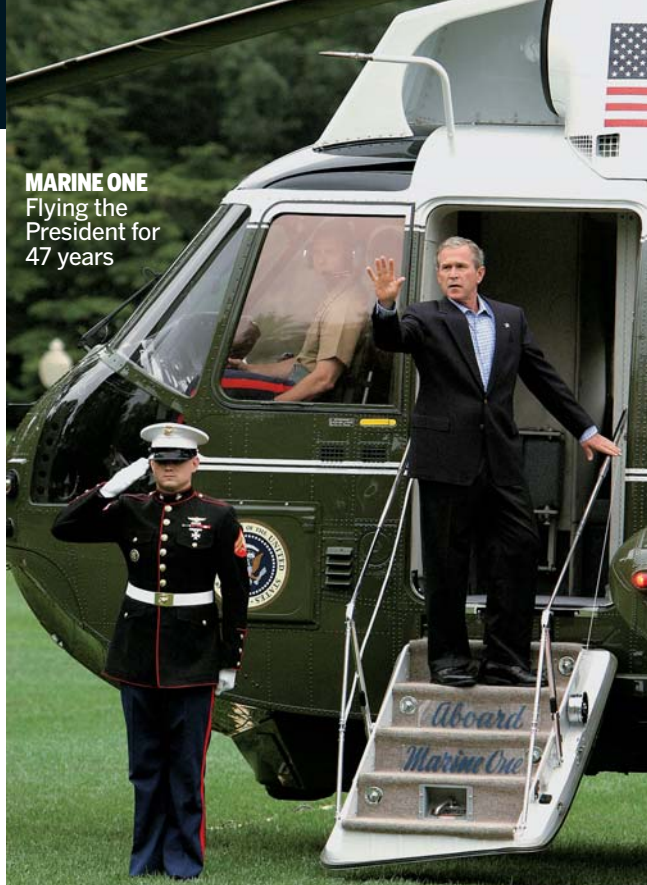
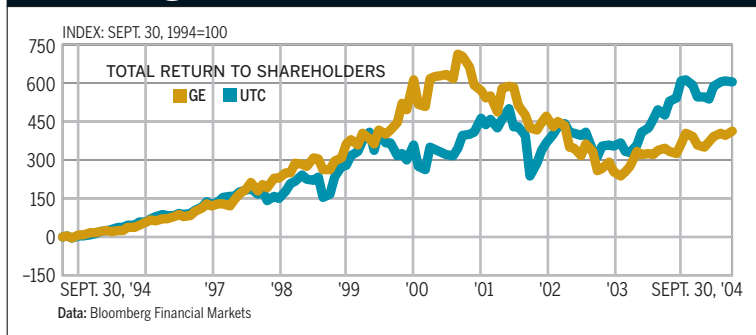
Don't forget about divestitures

NO REVOLUTION LASTS forever, and U.S. executives are starting to wonder whether the productivity boom has run its course. There are many who fear that the unrelenting focus on slashing costs and making fewer people do more has extracted a toll on innovation. David doesn't buy that, noting that UTC spends more than \$2.5 billion a year on research and development, spawning more than 350 patents a year since 1990 and industry-altering products such as Gen2 elevators, which operate without steel cables, or fuel cells that convert waste heat to air conditioning.

David says he'll continue to look for both acquisitions and divestitures as a way to drive growth. Such moves have helped triple UTC's book value over the past decade. What he gets rid of is just as important as what he buys. He says that dumping UT

A TALE OF TWO RIVALS

UTC outguns GE in shareholder returns



MARINE ONE
Flying the President for 47 years

Automotive on Lear Corp. for \$2.3 billion in May, 1999, was "the happiest day of my life." The reason: Auto makers put such a squeeze on suppliers that it was impossible to make decent margins. A few weeks later, UTC picked up aerospace and industrial systems giant Sundstrand Corp. for \$4.3 billion, merging it with existing operations to become Hamilton Sundstrand. That unit has been a home run, winning almost every major system it could bid on in Boeing Co.'s 7E7, with orders totaling \$6 billion. In 2000, David was within a hair of acquiring Honeywell International for about \$40 billion in stock before GE's Jack Welch jumped in to grab it—though Welch later lost it when the European Union's competition commissioner Mario Monti nixed the deal. David also has beefed up Carrier Corp. and Otis with a series of smaller acquisitions that give them a stronger presence in key markets, as well as reach into new technologies.

Still, life hasn't been easy lately in David's Republic. In a world that is fast converting even sophisticated technologies into ho-hum commodities, UTC's unrelenting push to improve quality is a matter of survival. Alarm systems and air conditioners don't exactly have high barriers to entry. China and Russia are becoming competitors as well as customers. High domestic wages and greater efficiencies have resulted in 52 plant closings since 1996—and it's far from done. UTC plans to cut an additional 2,800 from its 203,000-strong global workforce and cut manufacturing space by 6.3 million square feet through next year. That's on top of 36,000 employees who have lost their jobs since 1999.

Then there is the protracted hand-wringing over UTC's two aerospace operations. David admits to being thrown off guard last February by the U.S. Army's cancellation of the \$39 billion Comanche helicopter program with Sikorsky and partner Boeing. Black Hawk orders should fill the gap but, even so, some 700 jobs could be lost. Sikorsky is also locked in a fierce battle against Europe's Agusta-Westland to hold on to its contract to make the Presidential helicopters, known as

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Marine One. There's more than prestige at stake. With all the after-market support and sophisticated technology on the 27 or so helicopters that would be ordered, David says "you almost can't put a value on it."

But he is so confident of the lightweight state-of-the-art machine UTC has put forward, the VH-92, that he refuses to contemplate the possibility of losing the contract. He half-jokes that he'll step out of a plane if it happens—after the head of Sikorsky steps out first. "It's win or drop dead," glowers David over a can of Diet Coke and chocolate truffles in the company's corporate jet. "We've flown the President for 47 years!"

An illustrious history, however, hardly guarantees success. Witness the shrinking heft of engine maker Pratt & Whitney, which makes up almost a quarter of UTC's sales and slightly more of its operating profits. Pratt has already lost the coveted bid to outfit Boeing's planned 7E7 Dreamliner airplane, which went to General Electric and Rolls-Royce in April. And it's not just the Boeing contract. The once dominant jet-engine unit has seen rivals grab the bulk of new commercial business in recent years. That worries some analysts as Pratt's shrinking installed base of large engines will mean lower service and spare parts sales in years to come. The problem? In large part, an unwillingness on David's part to give in on price.

Basically, he's willing to cede some commercial business to focus on lucrative defense contracts—even if it means shrinking the business. Pratt President Louis R. Chênevert says that if he were doing the Boeing bid all over again he wouldn't change anything because, in the end, the deal had to be good for shareholders as well as the customer. Still, it's not all bad news. Pratt is the undisputed leader in military engines and is pushing for more sales in the regional jet market. And Korean Air's recent \$500 million order for Pratt engines on its 777 and 747 planes shows the company isn't dead in the widebody market.

As business ebbs and flows, it's workers who often pay a dreadful price. But David doesn't lose any sleep over workers caught in the realities of a global economy. He is achingly blunt about the need for employees to control their destinies in everything from health care to job security. But, perhaps more than any other leader in Corporate America today, he is also deeply committed to giving them the tools to do this. His eight-year-old Employee Scholar Program gives workers up to three paid hours off a week to study and pays up front for the entire cost of books, tuition, and fees for any education program—except,



CARRIER PLANT
A quality push is paying off in Tyler, Tex.

perhaps, the kind found on matchbook covers or pricey pilot training. The program covers every employee, from the veteran elevator technician in Zimbabwe to a fresh-scrubbed office assistant in Tyler, Tex., with some education benefits even extending to laid-off workers. And, for each degree earned, employees get up to \$10,000 in UTC stock or options.

That commitment has helped a relatively low-profile company draw some of the best in business. What's more, once workers bag the degree, and take home the stock, they tend to stay. Retention among employee scholars is about 20% higher than for regular U.S. workers (UTC doesn't track international rates). Though it's hard to measure, execs also believe that the program has reduced overall turnover by several percentage points—a boon to the bottom line. The program is so generous that it has some benefits experts shaking their heads. "It's doing justice to the world but it's not doing justice to UTC," says E. Faith Ivery, president of consultant Educational Advisory Services. She argues that UTC isn't giving its workers an incentive to spend money wisely and doesn't adequately track the returns. David responds that an educated worker is a better worker.

The cerebral approach

STILL, NOBODY DISPUTES the buzz it generates within UTC. Lance Bartosz, a 30-year-old engineering manager at Hamilton Sundstrand, joined the company after learning about the program from a friend. So far, he has completed an MBA and is now getting a master's degree in engineering. "This made me feel a stronger allegiance to UTC." Ditto for Felice Gray-Kemp, tax manager of Sikorsky's finance unit, who recently got her master of law degree and is contemplating an MBA: "Without knowing me, they were willing to invest in me." Given that roughly 15% of

THE UTC WAY

Here are some key tenets of George David's Japanese-style quality system

Educate

Teach line workers common-sense techniques to identify quality problems—and give them the authority to work on the solutions.

Organize

Reconfigure factory floor to make it cleaner, simpler, and more intuitive. Nothing is random; everything has a designated place.

Analyze

Rigorously study the root cause of every defect and complaint. Then, even if it means stopping production, fix the problem once and for all.

Track

Map out every process, make people own it, and reward constant improvements. For every action, ask why and how it could be done better.

Lead

Convert top management into disciples of the process and make proselytizing part of their job. Nonbelievers can head for the exits.

the company's U.S. workforce is enrolled in the program, it would be hard to know them all.

Such initiatives typify David's quirky and somewhat cerebral approach to running a modern-day conglomerate. Although he seems to have a hard time connecting with the common man—a back slap from David probably means you have food lodged in your throat—he fervently believes that everyone should have the chance to try to better themselves.

"America is all about opportunity," says David, whose Horatio Alger instincts stretch back to his days growing up in Pennsylvania where his father, Charles David, was one of America's first Rhodes Scholars in 1908 and served as a professor at Bryn Mawr College. He was 57 and a well-established historian when his second son, George, was born in 1942. "Without an education, my father would have been a farmer like his father," he says. That's clearly a disturbing thought for a man who points to the 19th century scholar Sir Richard Francis Burton as his boyhood hero.

Farming, after all, was never to be the fate of George David. After studying physical sciences at Harvard University—an experience that left him feeling largely unmoved because, he says, he was too immature to handle the permissive, impersonal atmosphere—he married his high school sweetheart, Barbara, and pursued an MBA at the University of Virginia's Darden School of Business Administration. "It was like a light switch went on," says David, who graduated first in his class. He became a management consultant at Boston Consulting Group before going to work for client Otis Elevator as executive assistant to its erudite French-born leader, Hubert Faure, in 1975. As Faure recalls, "he was very remarkable in his analytical mind but, like a lot of bright young men, he was also brash and over-confident."

David says at Darden, "it was like a light switch went on"

the skills to stay employable—even if they can't guarantee them a job for life.

Instead of being fired when Otis sold out, David was sent to manage the company's operations in then-hyperinflationary South America. He quickly developed a reputation for financial discipline (i.e. cost-cutting), a fixation on details, and intensely demanding leadership. As Carrier President Geraud Darnis explains, "George has always had a way of instilling a sense of humility. He always asks a question you can't answer... and leaves you with a big silence."

Finding his quality guru

DAVID HONED HIS TASTE for world travel, running both Otis' Latin American and Japanese operations in Sao Paulo and Tokyo before becoming Otis president in 1986. Six years later, he became president and chief operating officer of UTC—an elevator guy in a company where aerospace reigned supreme. He soon learned to navigate the old boys' club and grasp the minutiae of UTC's sophisticated aerospace products. He also closed plants and laid off more than 20,000 workers in his first year. By 1994, he was chief executive and, three years later, added the title of chairman.

One of his first tasks as president was to persuade a diminutive 64-year-old Matsushita Electric Industrial Co. retiree named Yuzuru Ito to move to a Hartford suburb to work on improving the productivity of UTC's businesses. David first encountered Ito in 1989, after he was brought in by the unit's Japanese joint venture partner, Matsushita Industrial, to try and figure out why Otis' fancy new Elevonic 401 elevators were such clunkers. Their callback rates—the number of times per year a building owner has to call mechanics for service—were as high as 40 per unit a year, vs. an average of 0.5 for rival Mitsubishi Electric. When Otis dispatched a team of U.S. engineers to get the machines working, their Japanese partners hauled them into the boardroom to analyze the cause of the problem—even as some elevators were shut down and literally burning. Later, with Ito in charge, the work they did changed the fundamental design of the elevator line worldwide.

David leaned on Ito, first as a consultant and then as a full-time adviser, to make the techniques he used to analyze the elevators adaptable and accessible to every person in the plant. The program evolved and became known as ACE, or

GEORGE DAVID

An intellectual with an eye for detail

BORN Apr. 7, 1942, Bryn Mawr, PA.

UPBRINGING Father, Charles, was a history professor and one of America's first Rhodes Scholars; mother Marion was a library administrator with two graduate degrees.

EDUCATION Harvard BA, 1965; University of Virginia MBA, 1967.

POSITION Chairman and CEO,

United Technologies Corp.

HEROES 19th Century adventurer/scholar Sir Richard Francis Burton, Winston Churchill, and Franklin Delano Roosevelt

INDULGENCES Mogul type toys include a championship yacht. His boat, the *Idler*, sailed in the U.S. Admiral Cup's team. (David and crew, left.) He collects modern art and owns a cattle ranch in Argentina as well as 20,000 acres of other land.

HOBBIES Sailing, mountain climbing, helicopter skiing; once piloted an F-15 Eagle fighter.

BOOK LIST Eclectic readings include *American Caesar* by William Manchester, *Trading Up* by Sex and the City scribe Candace Bushnell, and *The Devil Wears Prada* by Lauren Weisberger.

FAMILY Divorced with three children; remarried in 2002 to Countess Marie Douglas, a former investment banker and descendant of Grand Duke Ludwig I of Baden.



Achieving Competitive Excellence. Instead of the complex formulas and training schedules involved with, say, Six Sigma—where the process of becoming a master black belt can generate more sweat and angst than pursuing an actual master's degree—“ACE pilots” are production line workers who learn the quality process in a matter of days. They learn to pinpoint problems ranging from fundamental design flaws such as misplaced bolts to a co-worker's fatigue from staying up with a newborn all night.

One recent result: more logical placement of elevator parts—using special boxes instead of loose bags—that trims \$300 off the cost of each elevator and will lead to \$26.4 million in savings worldwide this year. More important, the factory floor was re-configured so that the production process was compact—requiring fewer steps, less reaching, and easier access to parts—as well as more intuitive. There are even taped outlines on floors and surfaces, much like the outlines of bodies at crime sites, to show exactly where each widget should go. This is the “5-S” strategy—sort, straighten, standardize, sustain, and shine.

Putting philosophy to work

THANKS TO QUALITY-IMPROVEMENT techniques borrowed from the Japanese, David was off and running in his drive to achieve maximum efficiency. By consolidating thousands of suppliers and streamlining the purchasing process, he trimmed almost \$1 billion in annual costs for general procurement—everything from pens to airline tickets—in the first few years. To keep the ball rolling, in 2001 David put each unit president in charge of streamlining the supply chain for a particular area such as office supplies or travel. But cost-cutting is just one part of the equation. With ACE, says Kent L. Brittan, supply management vice-president, “we can come to market three times faster, with one-third the inventory, and at least 20% less cost.”

David was careful to extend the teachings all the way down through the organization. In 1998, he launched an “Ito University” where anyone—not just a bunch of bright young management wannabes—can analyze and share UTC case studies in quality. Lecturers are as likely to be accomplished production line workers as ambitious suit-clad execs. And ACE bulletin boards, documenting every inch of accomplishment on a particular site, became staples in UTC plants.

Of course, a revolution always looks especially vivid to those who are leading it. Down in the trenches, there have been more than a few glitches. Take Carrier's plant in Tyler, Tex. Almost three years ago, David made a visit—because, as he puts it in a true spirit of *noblesse oblige*, “my advisers thought it would be good to go out and comfort our people after September 11.” What he encountered was a cluttered and somewhat dingy operation almost choking on its own dust. With the exception of a possible takeout menu or two,

David isn't a celebrity CEO but he has been richly rewarded

there were few signs of Japanese-inspired innovation in evidence.

Forget about comforting the stricken. David was livid. When he discovered that senior management at the operation—and their superiors back at headquarters—had essentially pooh-pooed ACE in favor of just churning out more air conditioners and heating units, he fired the plant managers. Heck, he even sent the head of Carrier packing, though he prefers to couch

that as an amicable parting. In a visit more than two years later, it was clear that the message was starting to sink in. Dusty air and chaotic interiors were vanishing in favor of compact U-shaped assembly lines and brightly lit open spaces. “I could see,” David later joked.

A typical result: Square-footage reductions in one area of 50% and 71% more production with 8% fewer employees than on the previous regular conveyor line. David Dickey, the plant's buoyant general manager, also pointed to an almost 20% rise in sales and profits over the past two years. Add to that a dramatic reduction in lost work days, as well as fewer customer complaints and more product innovation. But if Dickey was expecting a high-five from the boss, he didn't get it. After poring through documents and prowling through the plant, the chairman did concede that there had been progress—though he added that the level of product failures in the field was still far too high.

That intense focus on the inside of his company may be part of the reason why David has retained such a low profile. He may not be a celebrity CEO, but he has been richly rewarded for his record in leading UTC. The stock options he got upon being named chief executive gave him an unusually high \$70 million-plus payday last year, thanks to the rise in the stock over his tenure. He's more accustomed to payouts in the single-digit millions, though he did net \$16.8 million this summer when he sold more shares nearing expiration.

Such riches might cause embarrassment to average mortals but not to UTC's philosopher king. The impression that he gives while munching on goat cheese salad in the corporate jet isn't so much one of entitlement as much as a firm belief that material excess is a fitting reward for those who toil among Corporate America's ruling elite. Yes, he has the \$25 million townhouse in Manhattan and the yacht that competed in the Admiral's Cup. He also divorced his wife of three decades back in 1997. Five years later, he married Countess Marie Douglas, then 30 and a descendant of Grand Duke Ludwig I of Baden. They met when she was an asset manager at Lazard LLC, investing in UTC stock. Together, they share a love of art and have become fixtures on the charity circuit.

What David craves most, perhaps, is to believe that he is making a real difference. Even if creating the planet's most educated workforce or its most successful conglomerate prove to be elusive goals for a man mired in the realities of modern manufacturing, David will continue to try his best. It's what he believes every leader who wants to make history is destined to do. ■



CHARITY CIRCUIT
David and wife, Marie, at a fund-raiser