MEASURE

What scares
Sun, DEC
and IBM?

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SSSSsnakes!

By Rhea Feldman

Why should HP's competitors be scared of snakes? Because the new HP Apollo 9000 Series 700 workstation family—the result of a development effort informally called the "Snakes" program—is coiled to strike in the marketplace, according to industry experts. *Personal Workstation* magazine says the machines "will be the last word in raw performance for a while....The fact is, no one is even coming close."

The press wasn't always so favorable about HP's prospects in the workstation market—an area that many believe is vital to the success of the company's total computer business. "Is HP losing its momentum?" was the question several reports asked throughout 1990. Though HP vaulted to the top spot in workstation market share—following its acquisition of Apollo Computer Inc. in May 1989—the company slipped to the No. 2 position later that year. In January 1991, *Business Week* and *The Wall Street Journal* reported that HP was in danger of sliding into third place.

The cause of HP's woes, according to industry watchers: A technology called reduced-instruction-set computing (RISC) had captured the imagination of many workstation users. By 1990, several of HP's competitors—including Sun Microsystems

Inc., IBM and Digital Equipment Corporation (DEC)—had beaten HP to the marketplace with workstations based on RISC.

HP's late entrance into the RISC workstation battle was ironic on two counts: First, HP pioneered RISC technology in the early '80s with the "Spectrum" program, focusing its efforts on minicomputers instead of smaller workstations. In 1986, HP was the first major company to bring a RISC computer to market. Today, it has the broadest line of RISC computers and ranks No. 1 in RISC market share in terms of revenue, according to analyst Andrew Allison.

The second irony: Even without a RISC machine, HP's workstation business enjoyed some important successes in 1990. Most notably, the company brought the first merged HP/Apollo workstation line to market—the Series 400. In spite of the delayed delivery of its 68040 Motorola chips, the Series 400 won HP several big deals.

Nevertheless, during the last year an increasing number of workstation users bought competitors' RISC machines. Marc Schulman for UBS Securities

"(Denny) gave us focus, so decisions got made quicker than normal."

newsletter wrote, "If we were an executive of (HP), we would be worried."

HP's executives weren't spending their time worrying; they were launching the Snakes program. Its goal: develop a RISC workstation of outrageous performance to reassert

HP's leadership in the marketplace, and deliver the products in record time.

Chief Operating Officer Dean Morton called Snakes "the highest-priority development project in HP's computer organization." He asked Denny Georg of HP's Fort Collins, Colorado, site to head the effort.

Denny's challenge: coordinate, motivate and focus the work of 30-plus functional organizations working on Snakes

Cross-functional teams, including one in Fort Collins, Colorado, made up of (from left) Dan Osecky, Russ Sparks and Ruth Lufes, helped employees develop a "systems view."

across HP—groups that represented different entities, locations and components or pieces of the product, such as the hardware, operating system, compilers and user interface.

As Snakes program manager, Denny was expected to lead and inspire these diverse groups while "belonging" to none of them. "I'm like a man without a country," he quips.

"Denny did something special," says Steve Boettner, whose Computer Languages Operation developed the compilers for the Series 700. "He gave us focus, so decisions got made quicker

than normal. Bringing the pieces of a system together can be a big challenge. That's where you bump up against organizational interfaces. People from different groups may have conflicting priorities."

Helping people develop a "systems view" became a principal goal.

"We needed to get people to focus on the product as a whole—the entire system—rather than just their piece of it—so they do what's best for the system, and not just their component. That means reaching across organizational boundaries," says Denny.

"Scott McNealy (Sun's CEO) actually was an inspiration to us," Denny adds.

"Never let the organization get in the way of opportunity."

At the kickoff of the Snakes effort, Denny asked the group to take to heart a McNealy axiom: Never let the organization get in the way of opportunity.

"Denny put together a process that enabled a number of entities to look beyond their boundaries—perhaps more than they had in the past—and to get a sense of what the whole product was," says Ted Wilson, R&D manager of the Interface Technology Operation. "I think that has a great deal to do with the success we're achieving now."

Why was teamwork across organizations so important? The only way to

Coordination was a key to "Snakes" success, note **Naomi Munekawa** of the Open Systems Software Division and **Danny Lu** of the Apollo Systems Division.

achieve outstanding performance in a complex system like a workstation, Denny asserts, is for each piece to be highly tuned to the other. The hardware, operating system, graphics, compiler, user interface and so on all have to work together in the most efficient way to maximize performance. Consequently, the groups of people who design each of those systems components must work together exceptionally well, too.

To break down organizational barriers, Denny established his program team of functional managers from all areas of the project. Its makeup epitomized the "systems view" Denny hoped to inspire. In addition to the R&D groups responsible for each systems component, the manufacturing function was well represented, as was marketing, spearheaded by the Apollo Systems Division (ASY). A special project to involve HP's value-added business partners reported to the program team.

Members of the field got involved, too, through a task force established by Maureen Conway, ASY quality and productivity manager. It aimed to ensure the workstations would be easy to

> *"We've got a great product. We want to make sure it can get to the customer."*

order. "We've got a great product," Maureen says. "We want to make sure it can get to the customer."

Denny also established a systems team to focus on the details of the

system release, and a performance team which met regularly to discuss performance issues.

"It was exciting to bring together people from different walks of life," says Carl Morgenstern, who headed the performance team. "Our group represented hardware and software R&D, and technical marketing. In the past, the people working on one component of the system might not know whom to call in another lab if they needed their help. Organizational barriers were keeping everyone segregated. The performance team goes slicing through all that stuff. Somehow it's a lot easier to reach out to solve a joint problem if you're part of a team and you know each other. The human contact makes you a lot more responsive to everyone's needs."

"It's amazing," notes Ted Wilson, "how a simple set of process requirements—like meeting regularly in multi-organiza-

tional teams—can have such outstanding consequences to the system."

Some of those consequences, according to Ted, were the results his lab

> *"Together we tuned the entire system so that we exceeded our goal."*

achieved working with other groups on the performance of HP VUE, the graphical user interface of the Series 700.

To boost HP VUE's performance, Ted's lab from ITO and Phil Ebersole's lab from HP's Graphics Technology Divi-

Sssssnakes

sion worked closely with teams whose components affected HP VUE, including hardware designers, graphics engineers and operating systems developers. "Together we tuned the entire system," notes Ted, "so that finally we exceeded our goal."

Measured in terms of X-Windows performance, an industry-standard benchmark, HP VUE on the Series 730 CRX is a whopping three times more powerful than its competition—results Ted describes as "nothing short of astounding. It's a systems-level victory," he says proudly.

The Computer Languages Operation (CLO) experienced a similar victory working on the compilers for the Series 700.

"We thought we were going to easily hit our minimum goal of 40 SPECmarks (an industry-standard benchmark). But early on we got a surprise," says CLO Manager Steve Boettner. "Something didn't work right."

Help came from the group responsible for measuring how the software performs on the hardware, and from operating-system engineers.

"We got over a mind-set hurdle," says Steve. "This was our first significant challenge and we didn't have to go it

> **"There was a time when we were on such a roll it was intoxicating."**

alone. We were part of a broad team with other groups. Everybody responded quickly.

"It just goes to show what you can accomplish when you have a plan,
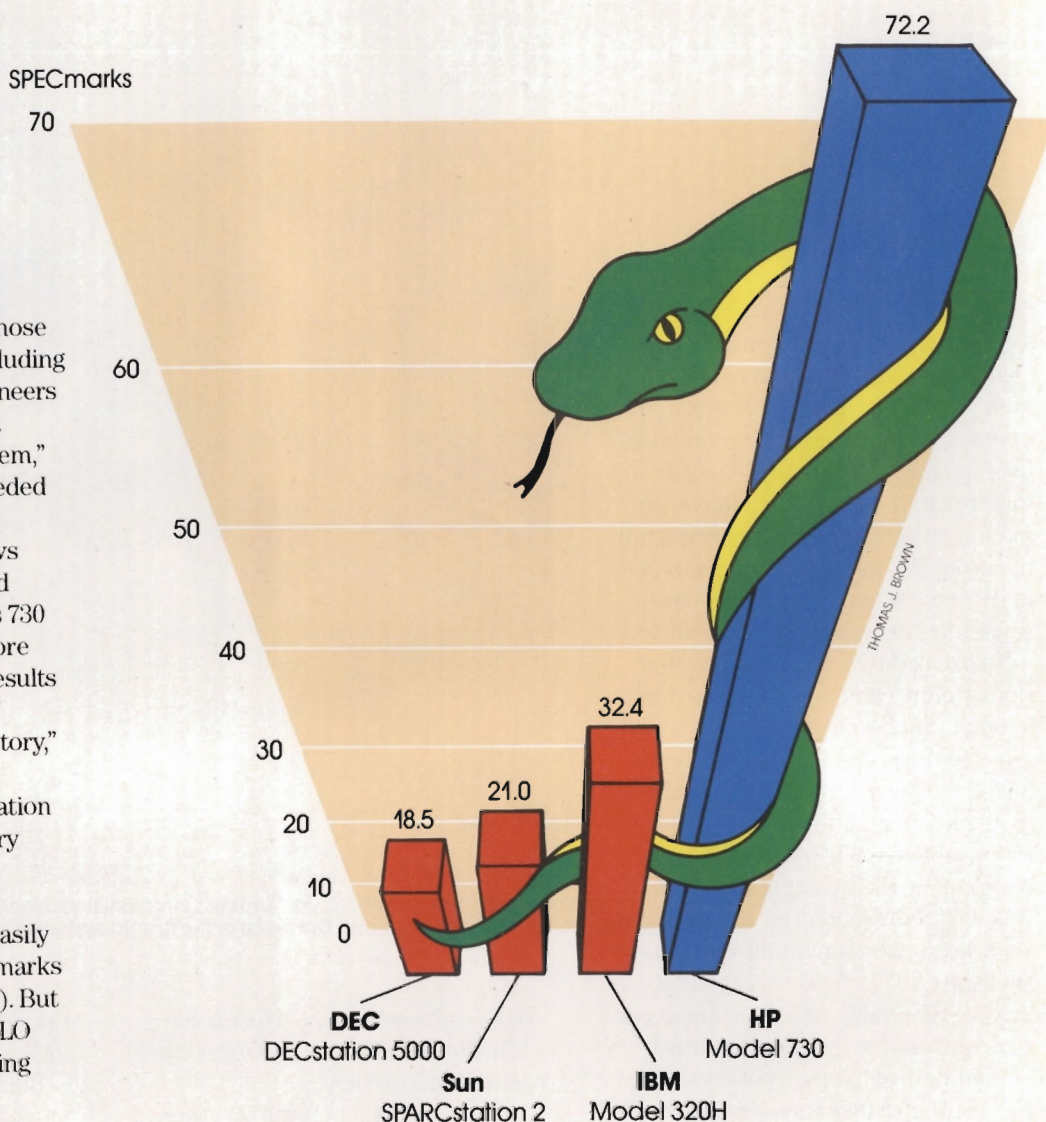
The new Model 730 workstation easily outperforms the competition—more than doubling the nearest challenger in SPECmarks, an industry-standard benchmark.

measure where you are against it and work in multi-functional teams to address surprises."

The result: The Series 700 hits 55 SPECmarks—the best score of any workstation on the market at the time of introduction.

With successes like these throughout the development process, performance of the Series 700 climbed to dizzying heights, and so did the mood of the people working on the project.

"There was a time when we were on such a roll it was intoxicating," says Carl Morgenstern. "It seemed like almost every other day some amazing new number would come in."

"The team spirit was incredible. It was as if each person felt 'There's a little bit of me in this box and it's going to set the world on fire!'"

"A lot of people have delivered more than they thought just by being challenged to do more," says Denny. "To win, a team will do extraordinary things."

"Extraordinary" certainly describes the performance of the Series 700. At the high end of the family, the Model 730 is more than twice as powerful as com-

petitors' machines. It clocks in at 76 million instructions per second (MIPS) and more than 70 combined SPECmarks (see chart)—the highest performance available on the desktop. The Series 700 offers leading price/performance, too.

"I believe Snakes will be an overwhelming sensation," says Carl. "But we can't stop. We're just getting started. We need to continue to understand how customers and applications use our systems, and how those systems perform in networks. That data will help us deliver even faster machines that offer real value to our customers."

Faster machines are what HP will need to stay ahead. Experts predict that, though HP's competitors won't be able to match Series 700 performance for six months or more, eventually they will.

But if the Snakes program is any indication, HP has what it takes to keep its leading edge in workstations sharper than a serpent's tooth. ∎

Editor's note: In April, the Apollo Systems Division and part of the Fort Collins Systems Division became the Workstation Systems Division, and the Graphics Technology Division became the User Interface Technology Division. See page 30.

(Rhea Feldman, a speech writer in HP's executive communications group, last wrote for Measure *in the November-December 1989 issue on "Cooperation: the future of HP computers."—Editor)*

Mike Gallup, manager of the Americas Marketing Center, presents graphic evidence of HP's superiority during demonstrations with Sun, DEC and IBM workstations.

What they're saying about Snakes

"...Hewlett-Packard Co. has the hottest boxes in the workstation industry..."
—*The Boston Globe*

HP will become "the industry's new price/performance leader."
—Vicki Brown, consultant, *PCWeek*

"From a performance and price/performance standpoint, it's going to blow everything away."
—Marc Schulman, analyst, *Investor's Daily*

"Software vendors are very, very excited. I find a large majority of them giving very high priority to...HP..."
—Robert Herwick, analyst, *Investor's Daily*

"The (teaser) ads are also a sign of renewed vigor and confidence throughout the proud and tradition-rich organization...Hewlett-Packard now appears to be bouncing back."
—*New York Times*

"Observers said Sun will not be able to counter HP's moves anytime soon. According to a top Sun engineer, the company will not be able to close the performance gap until late this year or early 1992."
—*PCWeek*

"The new workstations clearly demonstrate Hewlett-Packard's mettle."
—*The Wall Street Journal*

"This is not your grandfather's HP!"
—Chuck Casale, consultant, Aberdeen Group

Hot marketing for a hot box

HP's Mark Tolliver and Donna Griffiths test the new workstation with Doug Reid from Insignia Solutions.

"We need a marketing program just as aggressive as the workstations we're selling," says Bob Weinberger, product marketing manager for the Apollo Systems Division (ASY).

The U.S. advertising campaign for HP's new blazingly fast workstation family—the HP Apollo 9000 Series 700—is a clear example of marketing that, under the leadership of ASY, is uncharacteristically aggressive for HP.

The ads ran anonymously in newspapers: "57 MIPS. Under $12K," said one. And at the bottom it added, "If you guess Sun, you guess wrong."

The fighting tone was based on months of market research, including focus groups with workstation users. According to Laurie Frick, worldwide advertising manager for the Computer Systems Organization (CSO), "Buyers are attracted not just

to the product itself but the aura about whom they're buying from. They're looking for a company that dominates. So the ads aim to convey the image of performance aggressor."

HP marketeers got aggressive, too, when it came to involving the company's value-added business partners (VABs) and the sales force in marketing efforts.

More than 200 VABs made their software available on the Series 700 at introduction, because they had early access to the machines.

The sales force got involved early in marketing plans through monthly meetings between field program managers and factory marketeers.

One result of tight teamwork between field and factory was the outrageous success of the rollout event for more than 900 members of the Americas sales force, held in Las Vegas, Nevada, in March.

"Our goal was to get the field as excited about these new products as we were," says Mike Gallup, manager of the Americas Marketing Center. By all accounts, that's what happened.

"It was simply the most exciting event of its kind I've ever been to," says Area Sales Manager Alan Button.

There were whoops from the audience when Mike opened the

conference by announcing he wanted to "tear up the old and get on with the new," and promptly ripped a report showing Sun Microsystems, Inc.'s No. 1 position in workstation market share.

"When Mary Allard (ASY marketing communications manager) presented the ad campaign," recalls Alan, "people in the audience got so excited they had tears running down their cheeks!"

Vice President Franz Nawratil, CSO Worldwide Sales and Marketing manager, brought the audience to its feet when he told them, "Roll up your sleeves! Give away your coats and ties to the people here from the factory so they can go out on the town. Their job is through. It's now up to you!" ∎

57 MIPS. Under $12K.

(If you guess Sun, you guess wrong.)

An aggressive advertising campaign piqued customer interest in HP's new blazingly fast workstations.

Dick Hackborn:

history of success

By Steve Hoffman

BOISE, Idaho—There's a saying that those who don't learn from history are doomed to repeat it. Dick Hackborn learns.

Even after 31 years with HP, Dick looks far beyond the recent past for wisdom. "I'm fascinated by times of great change," Dick says, "and by the leaders during those times who brought to society some sense of stability out of chaos."

As executive vice president and head of HP's Computer Products Organization, Dick must bring more than stability to the scene. Prior to taking the helm of CPO, Dick led the legendary HP LaserJet printer business to the top of the market.

The people who supported him then and the many more who work with him now look forward to this kind of success for all of the businesses which report to him.

Dick's domain covers far more ground with much greater product-line diversity than he's ever managed. CPO includes HP's laser printing and scanner businesses, ink-jet and plotter product lines, mass storage devices, handheld information products and personal computers, as well as sales and distribution. (See related story on page 30.)

Rather than overwhelming him, this broader field lends itself to Dick's keen perspective. "Businesses, companies, countries—even civilizations—go through various cycles," Dick explains. "Your ability to succeed over the long haul depends on your ability to identify and survive these cycles."

Based on more than 30 years of "amateur reading" of history, Dick points to three key characteristics which he believes are vital for a company or soci-
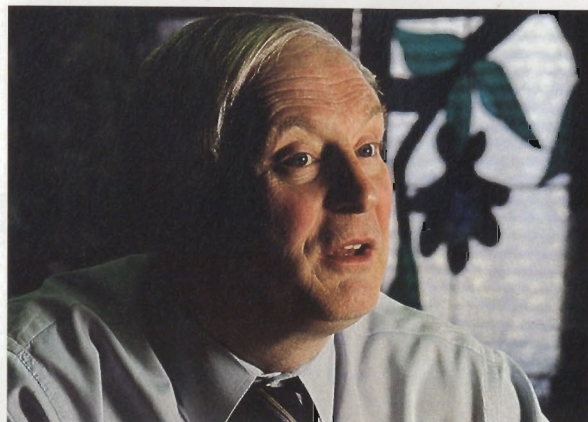
"Understanding key user-need trends and being first to market are critical for success in our business," says Dick Hackborn, head of HP's Computer Products Organization.

ety to weather these unavoidable cycles:

■ **Convictions.** "You need a well-defined, but not rigid, set of convictions," he says. "When Alexander the Great set out to conquer everything from Macedonia to Persia, you can bet his convictions were firm. By the same token, much of his success was due to his ability to adapt to changing circumstances."

■ **Identity.** "Cultures which share a common history or identity can withstand change very well. You see this in China and Japan. As you add diversity, you gain new ideas, but you need to maintain a strong identity within your organization to hold it together."

■ **Stable boundaries.** "Britain is a great example of how natural boundaries lend themselves to long-term stability. Contrast that with sprawling Russia. Or, try to define the boundaries of the high-technology industry!"

To survive the tough times, Dick believes you must meet at least two of these three requirements. Given the rapid growth of high tech throughout the world, boundaries aren't easy to define—let alone maintain. Rather, Dick leads with clear and attainable vision, while creating a focused team.

Dick

Dick's greatest strength, say the people who work with him, is his ability to set strategy. "He's able to see the big picture and understand where it's headed," says Doug Carnahan, general manager of the Printing Systems Group. "Not only can he see what's important for customers into the future, he can also see the details that we'll have to address along the way. Few people can do that like Dick."

His ability to link technology to the market comes through hard work. One key to Dick's brilliance, his peers claim, is his almost fanatical devotion to understanding customers and their needs.

To learn what's on the minds of customers, Dick encourages his team to ask questions and listen. He cites HP's Personal Peripheral Assistance Line in Boise, Idaho, as an example. Calls come in from more than 60,000 users a month, who ask for information and volunteer suggestions for improving HP

> **"(Dick) seems clairvoyant at times" in his ability to anticipate trends.**

products. Dick credits feedback through this service as a driving force behind the development of HP LaserJet printers.

"He seems clairvoyant at times," says Doug Carnahan. Dick's awareness of user needs nurtures his uncanny ability to anticipate market trends and competitors' moves.

Once he pieces together the trends in the market, Dick switches gears into technology mode. He and his team have concluded from their research that something big is about to happen on desktops around the world.

"One hundred years ago, the type-

Dick visits the usability lab at the Disk Mechanisms Division to talk with (from left) Susan Copple, Ron Frazier and Tom O'Brien.

writer forever altered the office desktop by mechanizing formal correspondence," Dick explains. Jump ahead to the 1980s, when the personal computer entered the scene. "The PC hasn't come into its own yet," Dick says. "In the next few years, we're going to see the biggest change on the office desktop since the typewriter."

The near-future outlook for CPO, according to Dick, will be to capitalize on the convergence of desktop office equipment. "Boundaries between office equipment will blur," he says. "PCs, scanning devices, printers, phones and faxes will converge."

The really good news is that he believes HP brings some of the best ingredients available to this office-convergence scenario. Along with the company's leading personal peripherals, HP brings a computer-systems expertise which will be vital to linking the technology.

A recent example of HP's technological wizardry in action is the Corvallis (Oregon) Division, which just intro-

duced the latest in palmtop computing. A handheld device from Corvallis combines HP strengths in calculators and PCs in a size and performance level that meet a wide range of user needs.

While new and developing technologies are exciting, they also beckon greater competitive pressures. Part of this evolution, Dick points out, includes the emergence of standards. "It's trickier to differentiate standards-based products," Dick says, "and that means you must maintain a highly competitive cost structure to stay in business." This, in turn, affects the single most important item on Dick's agenda: profit.

Dick never forgets that HP's No. 1 corporate objective is profit. This is based on the fundamental financial principle of being a self-funded company.

"Successful organizations need profit to fuel their own growth," says Dick. "You can't depend on only a few businesses to support growth across the entire company."

Profit hasn't received the attention it needs in parts of our company's com-

Rick Belluzzo, general manager for the Ink-Jet Products Group, and Dick discuss business while strolling near Lake Harbor.

puter business, he believes. While some product lines may hit a down cycle, he concedes, "the group-level portfolio must be diverse enough to generate enough profit to self-fund its growth."

HP's hardcopy business is an example. "Different product lines were at different cycles, but our investments produced overall results that were exceptional," he says, referring to Greeley's page scanners; ink-jet products out of Vancouver, San Diego and Corvallis; and Boise's desktop and network laser printers.

The same processes were at work in the mass-storage business, where new optical and digital-audio tape (DAT) storage-product families were added to the core disk and tape peripherals. "These divisions managed expertly through various challenges, from declining demand to shifting customer bases and changing technologies."

Profit is a clear report card for Dick. "If your profit is in line," says Rick Belluzzo, general manager for the Ink-Jet Products Group, "you can do what you

want. If you're not meeting your profit goals, you suffer."

Rick is quick to explain that the "suffering" is almost always self-inflicted. "If you find yourself in the bottom of a cycle, there's nothing Dick can say that can make you feel worse than you do already."

To cope with the natural cycles of business, Dick lays out a straightforward formula for pulling out of the red and into the black. "The key is to recognize the down part of the cycle and take action to return to profitability," Dick says. "The worst enemy in a down time is slowness to action."

His approach? First, Dick looks to consolidate operations and streamline the organizations in struggling businesses. The next step is to actively shift investments into the most promising growth areas, as was done in the Corvallis Division. Last, if all else has failed, there is no choice but to quickly phase out of a business which has no profit potential.

"One of Dick's lessons from history,"

recounts Rick, "is that strong cultures don't change without a crisis. To jumpstart a business, it's not uncommon for Dick to create a crisis." He may ask for revenues to double or for delivery dates to be pulled up. This doesn't happen overnight, however. Dick will usually give a division a few years to reach adequate profit levels.

"At HP, when people know they have a problem, they perform beyond all expectation," Dick says.

Dick favors simple metrics—like profit—which tell him how a business is performing. When the bulk of HP's revenues came from instrument revenues, measures such as return-on-sales were good enough to determine performance.

Today's business, he believes, requires somewhat different financial ratios. As products flow through the dealer channel, for instance, it's more important to step back and measure what Dick refers to as "return-on-assets (ROA)." You take your net profit margin and multiply it by the asset turnover ratio, Dick explains. When fewer assets generate strong

revenues with healthy profit margins, the ROA is high and so is the ability to self-fund growth.

Dick believes the key to keeping margins high and assets low is to design simple organizations. His divisions are organized around product lines, with only a handful of people at the top.

Dick strives to foster entrepreneurial working environments, favoring HP's traditional "triad" structure which links R&D, manufacturing and marketing. "The essence of organizational success," he says, "is to have empowered teams which are focused to win."

For these teams to win, however, they must learn to work closely with strategic partners for leverage. "CPO's future depends on how well we can profitably manage our high-volume businesses that sell through third parties," Dick says. In the years ahead, he believes that more and more of HP will have to learn to operate in this kind of environment.

Strategic alliances have their thorns, though. For one, alliances make any

> ## "The worst enemy in a down time is slowness to action."

business more complex and more difficult to manage. In addition, Dick notes, variations in the cost of goods sold may sometimes be beyond HP's control— wiping out progress the company makes internally on expense control.

The benefits, however, clearly outweigh the negatives. "If you look at our relationship with Canon for the HP LaserJet business," Dick says, "you see that by working together, we're bringing new features to market quicker... strengthening both HP's and Canon's

Feedback from 60,000 calls a month led to the development of HP's LaserJet printers, says Dick, who visits with Pete Santos, production section manager.

position." By sharing the tasks (in the LaserJet case, Canon makes the engines while HP designs and manufactures the formatter boards which control the printers) each constituent can focus on meeting world-class proficiency in cost, quality and performance.

Many people at HP recognize Dick Hackborn's wisdom, experience and success in the company. "He's absolutely committed to making HP succeed," says Doug Carnahan. "He'll do what it takes to make that happen."

One thing Dick is reluctant to do, however, is bask in the limelight. Dick Watts, head of CPO's Worldwide Sales and Distribution, jokes that Hackborn has a little bit of the "who is that masked man?" reputation outside of HP.

Even inside HP, Dick has developed a reputation for shunning recognition. When then-Vice President George Bush visited the Boise site in 1986, Dick found something else to occupy his time and asked Doug Carnahan to serve as the vice president's host for the day. "I'm not big on that kind of stuff," says Dick.

Around Boise, Dick's known for his Jeep Cherokee (Dick hasn't used a com-

pany car since 1981) and his penchant for pizza (mushroom and olive is his favorite). Rumors about his office are true. Dick occupies a modest office that shares a parking lot with a shopping mall along Fairview Avenue in west Boise. He's a few miles from the main Boise plant and a stone's throw from a used-car lot on Fairview. There are several reasons for this remote location.

"In 1988, the LaserJet business was taking off, and the main site ran out of space... my staff and I were the easiest ones on the whole plant to move," he explains. Furthermore, Dick felt that three levels of general management on one site were too many. With his role in the Peripherals Group—and now with CPO—he didn't want his office location to imply he was tied exclusively to any one of the businesses he managed.

The office gives him space for quiet time when he's not on the road. It's not uncommon to see Dick in running shoes and sweats, poring over figures and reports at his desk. "I'm one who needs time to reflect on where things are and where they should be going," Dick says. "However busy things get, I'll always set

aside time for this kind of thinking."

People comment that Dick's lack of pretense makes them feel comfortable when they meet with him. This homey, private style may appeal to an HP audience, but it has some drawbacks outside of the company. "There are certain benefits HP gains when our top players get recognition in the industry," says Doug. "Visibility has market value."

Dick acknowledges that his style and visibility will play a larger role in the future. "A lot of this has been born out of my increasingly hectic travel schedule," he explains. He's on the road two-thirds of his time.

"When I'm back in Boise," says Dick, "I also want to leave quality time to be with my family. I realize I'll have to adjust," he says with a chuckle. "I know you can't be totally invisible in this job."

When he considers the great leaders the world has seen during the past several centuries, Dick offers this characterization: "Leaders were people who believed in things. They had a constant

> **"The key is to recognize the down part of the cycle and take action…"**

theme with a clear set of convictions. From there, they had the ability to articulate these beliefs and get people excited over them…they had to get people willing to fight for them."

Dick's beliefs are clear, and he has garnered intense loyalty and respect from the people with whom he works. "Dick is concerned about people," Rick Belluzzo says. "He'll spend hours with you if you need his help. And when you come through for him, he never forgets it."

"When I'm back in Boise, I want to leave quality time to be with my family," says Dick, who takes a breather with Coshi, his dog, and his wife, Sondra.

A lesson in user needs

Dick recalls his first job with the company as one of many great lessons he's learned during 30-plus years with HP. Fresh out of the University of Minnesota with undergraduate degrees in electrical engineering and physics, Dick was asked to join a project team at what's now known as HP Labs.

The project was based on a new product idea of a Norwegian inventor whom Bill Hewlett had brought to HP for a short while. When the inventor went home, the team Dick was on was asked to finish the design.

"One day, Dave Packard stopped by my workbench and asked what I was working on. I told him, and he followed up by asking who would buy this. That concept was new to me. I set out to visit potential customers for this new product. Soon I learned that in its current state, absolutely no one would buy it.

"Bill Craven and I spent another year trying to find a market. After several unsuccessful attempts to sign up a division that would own it, the project was canceled.

"I had spent three years of my life with little to show for it. From that point on, I vowed never to begin a new-product development program without first having a clear understanding of how it was going to solve users' needs."

When you consider Dick's business savvy and technical prowess, his vision and his ability to motivate people, you get the feeling that to be associated with Dick Hackborn is to be part of history in the making. ∎

(This is the first Measure *story by Steve Hoffman, HP Sunnyvale, California, site communications manager. —Editor)*

Hope behind Romania's doors

By Jean Burke Hoppe

A time-honored battle ensues on the Geneva end of the international phone line. Three-year-old Katja is tucked into bed and her mother, Claudia Davis, HP marketing manager for customer support, is trying to talk with *Measure* about Romanian adoptions.

There is a summons from the bedroom for water, another for milk (a new ploy, reports the amused mother), and a call for one more snuggle before Katja finally depletes her store of excuses and settles in for the night.

Katja is a lucky girl to cry out and have her needs so joyfully met. Until last December when Claudia adopted her from the Romanian orphanage where she had lived since birth, Katja did not even speak.

Katja was one of as many as 200,000 forgotten children stowed away in Romania during dictator Nicolae Ceausescu's 24 years of iron rule. The haunting conditions in some of these warehouses for little humans have been well documented by the media since December 1989 when Ceausescu was overthrown and killed.

Many of the orphans were abandoned by families who could not afford to keep them. As the doors to Romania creaked open in 1990, the world found a country lit by a dim bulb, its 23 million people hungry, cold and living in fear of Ceausescu's infamous Securitate.

Striving to pay off a $10 billion debt, Ceausescu had halted imports, exported Romanian food and rationed basic utilities like heat, electricity and water. Even salaried Romanians lived borderline existences.

"I was open to adoption though I wasn't specifically looking for that," Claudia Davis says. "But as soon as I met Katja … I just had a feeling about her and absolutely fell in love with her."

The unwanted children are the result of Ceausescu's quest to increase Romania's population to 30 million by the end of the century. Abortion was illegal for any woman under age 45 who had not yet produced five children. Birth control was virtually unavailable. And Ceausescu's "baby police" tested female workers monthly to detect conception.

Conditions in one of the better orphanages often meant pork fat for the children's breakfast, one or two intermittently heated rooms in the entire building, one low-watt bulb, one bath a week and children who spent their days in smocks—without diapers—in row after row of urine-soaked cribs.

Before the revolution, a typical orphanage worker was responsible for the care of 40 children. Some estimate that up to half of the Romanian orphans under age 4 are infected with the HIV virus which causes AIDS, the result of unscreened blood transfers given to boost nutrition and the use of unsterilized needles.

Claudia Davis chooses to look beyond the harsh conditions. "When

"...as soon as I met Katja... (I) fell in love with her."

the doors opened to Eastern Europe, there was so much hope behind them, so much that is out there if people are willing to open their minds and hearts. And there is so much to be done."

Before she joined HP, Claudia worked with emotionally disturbed children for 10 years as a psychologist and educator

The room was dark when Claudia Davis and Josette Boulmier first entered the Romanian orphanage. Before long, "the children were asking ... if we would take them with us."

in Boston. Her work there brought her in contact with the business community. "They kept bottom-lining me," she says, "so I decided to get an MBA so I could learn to talk 'business-ese.'"

She got interested in HP when John Doyle, HP executive V.P. for business development, talked to one of her classes at Harvard about the HP way and how the company treats its employees. She says she didn't believe it and wrote to him about it.

That letter eventually landed her a manufacturing-training job with HP in California. She started her Geneva assignment in Customer Support the week Katja was born in Romania.

The part of Claudia that missed working with children and the public sector awakened as the stories started to come out of Romania after the revolution. She spoke with Romanian-born Mariana Andreicut, financial-reporting manager for Customer Support, about the situation. She asked Mariana's parents, Maria

and Teodor Andreicut, to investigate the orphanages in their town, Baia Mare, a hilly, forested mining village of about 100,000 people.

Claudia visited the Andreicuts in April 1990 to see how she could help. Sadly, Mariana cannot visit Romania because of her status in Switzerland as a political refugee. But she is devoted to improving the lives of the orphans and says she is very proud of the work her parents are doing to improve conditions and to connect prospective adoptive parents with orphans.

Of her visit, Claudia says, "I was open to adoption though I wasn't specifically looking for that. But as soon as I met Katja—when she was 2 years and 8 months old—I just had a feeling about her and absolutely fell in love with her. The match is amazing."

Claudia visited Romania again in September and came back to Switzerland to start the preliminary paperwork and

procedures for adopting Katja. Most of the paperwork had to be handled by California adoption authorities because Swiss laws did not allow single parents to adopt.

The paperwork was done in two months for the U.S. immigration office while initial paperwork was completed for Romania. Claudia spent the day after Christmas in 12 different Bucharest offices securing the final papers she needed to take Katja home. "It was all done in 24 hours, what people told me would take weeks. It was a miracle."

In their first months together, says Claudia, Katja has blossomed. "Some children living in these conditions develop their own little worlds in order to survive. They go within, become what we call autistic. Others cry out. I think Katja may have been at the brink of deciding which way to go when I first met her. Now, she's such a happy person. She loves to sing. Her laugh just enchants you. She walks right into a room and says 'hello' and if you don't pay attention to her, she'll work on you until you do.

"And as sad as conditions were at the orphanage, she learned things there that aren't all bad. She is very disciplined for

> ## "The faces of these children are always with me now."

a 3-year-old. She puts everything away. She knows how to wait. When she falls, she gets over it very quickly because she never learned to cry for attention. She's very self-sufficient. We're working on learning that feelings are OK, and how to bond with toys and trust people."

Katja gets a ride with her proud grandfather, Tom Davis, during a visit to Mesa, Arizona. As many as 200,000 forgotten children like Katja were stowed away in Romanian orphanages.

Between Claudia's April and September visits, she, Mariana and a group of other HP employees in Geneva formed the Foundation for Romanian Orphans to establish a long-term relationship with two of the orphanages near Mariana's former home in northwest Romania. Robert Herrick serves as president of the foundation's eight-person council, but insists that it is Mariana and Josette Boulmier, HPSA Public Relations representative, who have made it work.

Shortly before Christmas 1990, Marcel Dumalle from HPSA Personnel arranged for a truck to carry about $20,000 worth of supplies donated by HP Geneva employees and friends to Romania. The truck would stop at the Leaganul de Copii Cavnic orphanage—which has 54 children ranging in age from infants to 3 years old—and the Casa de Copii Baia Mare—with 54 children from 3 to 6 years old.

Josette met the truck—filled with clothing, shoes, vitamins, medicine,

bedding, heaters, a washing machine, cleaning supplies, toys and food—at the orphanages and unpacked and inventoried all 110 boxes.

Josette says, "The faces of these children are always with me now. When we arrived at Cavnic, it was about 3:30 p.m., but already dark. We asked to see some of the children and an orphanage worker opened a door into a dormitory-sized room with no light on. You could hear children crying and talking.

"She pulled out Stella, a beautiful, sweet little girl who told us, 'Bonjour,' and sang a little Romanian song for us. My interpreter, a local woman who has been a fantastic help to us, burst into tears. The children were asking her if we would take them with us.

"It's so sad, but I feel full of hope and keep my spirits up. With our means, we can really do something for them."

Josette and foundation council members Irene Hubmann and Louis Guigoz returned with more supplies for the orphanages in March. "Our main goals now," she says, "include some remodel-

ing plans—such as shower and bath facilities—as well as sending some benevolent educators to work with the children for one or two months at a time on deeper educational and emotional levels."

Much of the money to purchase supplies comes from HP employees who either make a one-time donation or who sign up for a fixed amount of money each month. Other funds have come from local Swiss citizens in response to newspaper accounts of the foundation's work.

In addition, says Josette, more than 250 HP employees around the world responded with donations and offers of help after a Corporate Public Relations Newsgram in January described the foundation's work.

Independent of the HP Geneva efforts, a handful of other HP employees opened their hearts to the children's plight by spending thousands of dollars, all of their vacation time and nearly all

Carolyn and Tim Hillstrom, an R&D engineer from the Lake Stevens (Washington) Instrument Division, returned from Romania with 2-month-old Nicholas and 2-year-old Adriana.

More than 250 HP employees responded with donations.

of their emotional fortitude to travel to Romania to adopt a child.

Lake Stevens Instrument Division R&D engineer Tim Hillstrom and his wife, Carolyn, spent nine weeks in Romania last summer trying to untangle the complex adoption web in orphanages near Timisoara, where the Romanian revolution began.

The hardest part, says Tim, was trying to figure out which children were adoptable. "It was an emotional mine field. You had to become attached enough to a child to begin looking for his or her

birth parents. It was like detective work because the information capabilities are so awful.

"Eventually you'd find someone who might know the child's aunt's brother-in-law. It could take days of travel door-to-door only to find out the parents would not release the child for adoption.

"After three weeks, we hadn't found a release for a child and it was the lowest point in our entire lives. We were ready to go home when we got the release of our 2-year-old daughter, Adriana. Two days later, we obtained a release on 2-month-old Nicholas from another orphanage. The paperwork then took five weeks to complete."

When the new Hillstrom family returned home, Adriana could barely walk, and could not jump, run, climb stairs, chew or talk. She had no socialized play skills. She was quite ill with an intestinal parasite. Nicholas, at 2 months, weighed less than 8 pounds. When they held him, he just stared at the ceiling.

It took Nicholas two days to come around, Tim says. "He started filling out immediately, started smiling. It took Adriana a little longer because she was so sick. But after about two weeks she woke up one day a new little girl. She's a social animal now. She loves parties and music. I think she wants to be a movie star. She's putting words and phrases together."

Sales Support engineer Russ Winchester of the San Diego, California, sales office and his wife were motivated to adopt by ABC-TV's *20/20* report.

The Winchesters started the paperwork in November 1990, and Russ left by himself for Romania in January. He returned home with 4-month-old Danica Leighann in February.

He stayed with a family in Bucharest, hired a translator from a hotel and set off to visit five or six orphanages. After two weeks, the process to adopt a little girl was nearly complete when the birth mother changed her mind.

Russ went back to visit orphanage

Hope

No. 4 and was leaving when he ran into a young woman who said she wanted her child to go to America. When he met that child, Danica, he fell immediately in love with her. He was in court to complete the adoption when the emotional roller coaster took off again. A Belgian couple arrived and said they already arranged Danica's adoption with the birth mother.

"The judge wanted us all to come back in two weeks and I told them I couldn't stay that much longer," Russ says. "It was just such a humiliating, wrenching scene."

The Belgian couple invited him to their hotel that evening. "They had decided that my wife and I should adopt Danica since we were unable to have children and they already had two. It was almost unbearably emotional."

After a rocky beginning, complicated by a serious diaper rash and an ear infection, Danica, too, is thriving in her new country and home. "She is just a little doll," says the proud papa. "As sick as she was when we left Bucharest, she

The ABC television show *20/20* prompted Patti and Russ Winchester from San Diego, California, to pursue Romanian adoption. The result was 4-month-old Danica Leighann.

| "We were lucky, but I feel for the kids who are still there."

just slept and played and charmed people on the plane.

"We were lucky, but I feel for the kids who are still there. It just tears you apart. The images will never fade."

When this article was written, Romanian adoptions had been suspended while officials attempted to regulate the overwhelming response from the West for babies. Adoption has become big business for "baby brokers" demanding huge sums for healthy Romanian children.

Despite this suspension, Dave Clark of the Waltham, Massachusetts, site, received word in mid-March, after a series of setbacks and delays, that he could travel to Romania to complete the adoption he'd been working on. At *Measure* press time, Dave and his wife were battling a mass of Romanian red tape to adopt a 2-year-old girl.

These stories have been played out at least a thousand times in the past year. Conditions in many of the orphanages have vastly improved with the outpouring of aid from relief agencies and organizations like the HP Geneva employees' foundation. The Romanian government will refine its adoption procedures, but there still will be thousands of children—some in serious physical or mental condition—in need of a home and a gentle touch.

"The overwhelming number of kids is so sad," says Claudia Davis. "When you're there and you connect with them, you find that they are so eager to be loved, to have attention, to relate with you. There is hope and we can't stop our efforts for the remaining children." ■

HP employees interested in learning more about or contributing to the foundation should contact Rob Senders at the HP Cupertino, California, site (Telnet 447-0068), or Mariana Andreicut, Susan Nye, Josette Boulmier or Robert Herrick in Geneva.—Editor

(Former Measure *editor Jean Burke Hoppe is a San Francisco freelance writer. She says that while researching and writing this article she paused frequently to hug Robert, her 8-month-old son.)*

Environmental update

I really enjoy *Measure* magazine each month and I know this has come up in the past, but I must say I would enjoy it no less if it was printed on recycled paper. I think a survey of employees and other readers would substantiate this.

As I recall, you're working on it, but please, seize the moment! We can make a difference.
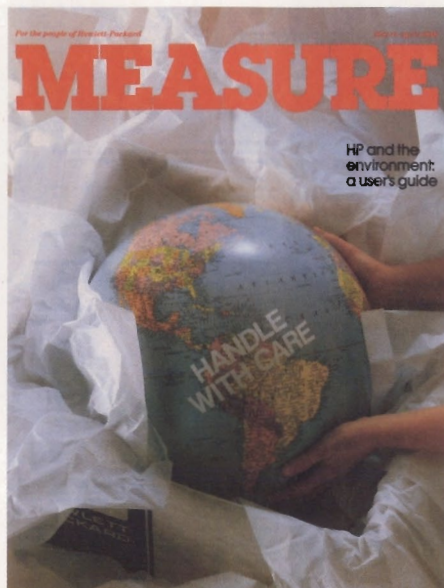
MAE KIRIAZE
Santa Rosa, California

How about an update on the possibility of publishing *Measure* on recycled paper? The March-April 1990 issue featured a section printed on recycled paper. I applaud the *Measure* staff for investigating the alternative.

Concerns at the time included a 10 percent increase in expense as well as "the quality of color reproduction." As a reader, I do not agree that quality is a concern. Taking the environmentally responsible route should take a priority over glossy paper. Have recycled paper costs dropped enough to reconsider the change?

DON GANNON
Roseville, California

Measure's March-April 1990 "environmental" issue stimulated more employee feedback than any other topic in recent history. Most readers said, in effect, "excuses be damned. . .switch to recycled paper now."

Well, that wasn't as easy as it sounds. After a year of research and experimentation, we're happy to announce that beginning with this issue, Measure *now is printed on a paper composed of 50 percent recycled fiber and 20 percent de-inked and post-consumer waste.*

The past year has been a real education for many of us. In addition to our primary concerns of paper quality, price and availability, we've learned a great deal about what truly is— and isn't—"recycled." The key is how much of the paper is made up of post-consumer waste—material that otherwise would have ended up in a landfill.

For an update on HP's companywide environmental efforts during the past year, see the July-August 1991 Measure *. —The Editors*

Pedal-power perks

In the present age of expense control and environment-friendly projects, here is an article from *The Glasgow* (Scotland) *Herald* which combines the two.

It also gives an added third benefit of health and fitness to those who qualify:

"Company bicycles would take the place of company cars as a business perk if the authors of a new report have their way. The National Economic Development Council says British views of the company cars as status symbol are out of touch with practice in the United States and much of Europe. It urges British firms to follow the example of Swiss pharmaceuticals giant Ciba-Geigy, which successfully offered employees new bicycles in place of cars."

DAVID GRANT
South Queensferry, Scotland
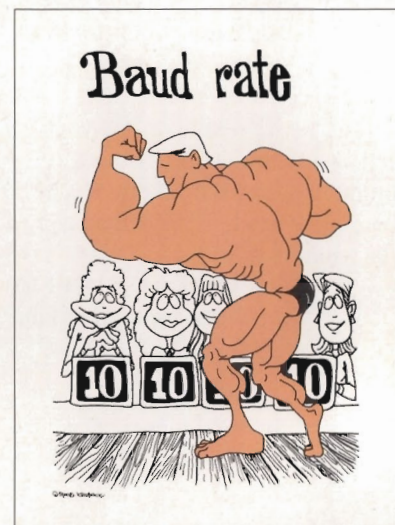
A hand for Rand

I have enjoyed many diverse articles in *Measure* on HP and "HPers." But the March-April 1991 issue brought a smile to my face from what I had thought was the long-lost illustrator/cartoonist from the Loveland (Colorado) Instrument Division.

Congratulations to Rand Kruback! I've enjoyed all of his cartoons.

BILL FRITZ
Rolling Meadows, Illinois

Still managing with style

Your article on Lew Platt's management style in the March-April 1991 issue was of personal interest to me.

I began my career with HP in 1973 in the Waltham Medical Electronics Division. I had the pleasure and honor of working with Lew and seeing him in a variety of roles at the division. What really stood out in your article was Lew's honest, down-to-earth management style. It was very rewarding to see that others see and respect Lew today in much the same way he was respected in Waltham 15 years ago.

Lew is a true HP manager. If anyone can lead us into the '90s as winners in the computer-systems marketplace, he can! I'm glad to see Lew's still managing with his winning style.

DALE CARLSON-DANIELS
Rockville, Maryland
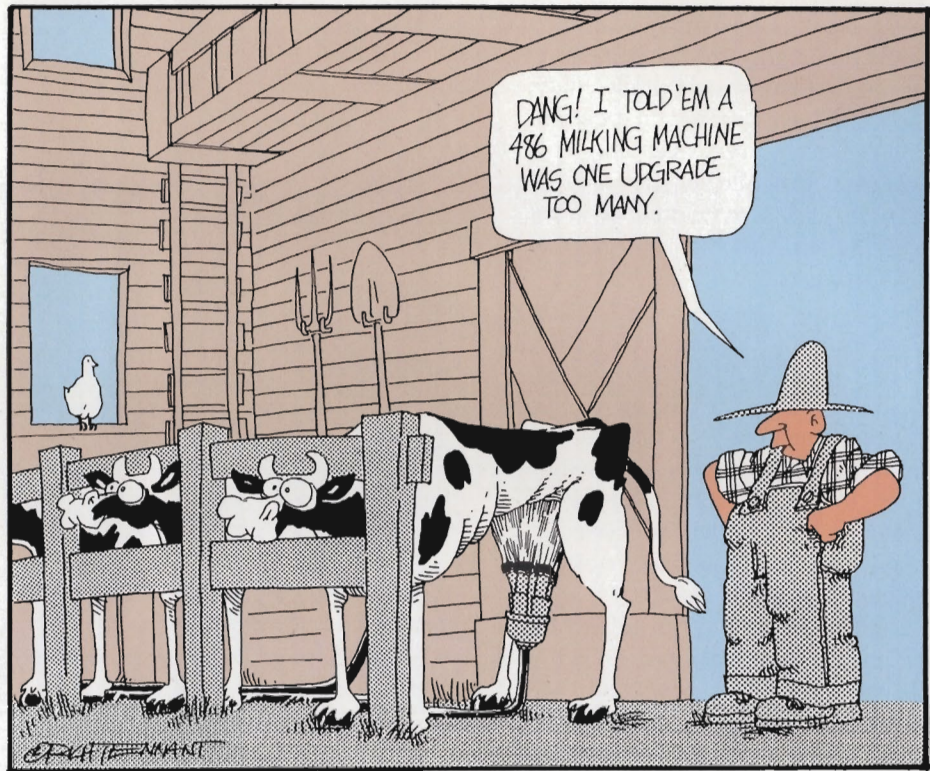
Life imitates art

I just received the March-April issue of *Measure* and I smiled when I saw the Parting Shot article on the back cover, titled "Udderly Amazing."

The cartoon above was published in the *San Jose Mercury-News* last fall. Comparing the cartoon with the *Measure* article, one could conclude that this is a case of life imitating art.

Both your article and the cartoon are especially meaningful to us, as our team developed the hardware subsystems for the new HP Vectra 486/33T personal computer...

TOM LANDGRAF
Sunnyvale, California

Please send mail

Do you have comments about something you've read in *Measure?* Send us your thoughts. If your letter is published, you'll receive a free *Measure* T-shirt (one size fits all).

Address HP Desk letters to Jay Coleman; by company mail to *Measure* editor, Corporate Public Relations, Building 20/BR, Palo Alto. Via regular postal service the address is *Measure*, P.O. Box 10301, Palo Alto, CA 94303-0890 USA. Try to limit your letter to 150 words. We reserve the right to edit letters. Please sign your name and give your location.

A relationship on the grow

ROBERT ISAACS

Once the rental equipment leaves the shipping area (above), ORIX Rentec's highly efficient distribution system ensures delivery to customers in big cities within 24 hours.

TOKYO, Japan—What do high-tech companies do when they need the most advanced equipment available, but don't want to make a massive equipment investment?

If your business is located in Japan, you probably turn to ORIX Rentec—the largest rental company in the world.

With about 65 percent of the total revenue of the eight large high-tech equipment rental companies here, ORIX Rentec is the clear leader.

In fact, the company has 15,000 different types of electronic-measuring instruments, microprocessor-development systems, office-automation equipment, engineering workstations and chemical-analysis machines—some 150,000 items in all.

Yokogawa-Hewlett-Packard (YHP) has been a key business partner of ORIX Rentec since that company was established in 1976. HP personal computers and communications-related instruments such as network and protocol analyzers are among the most popular rental items.

"The rental industry is a growing market," says YHP sales rep Akira Okada. "Once customers use and like the HP equipment they have rented they often buy from HP later."

ORIX Rentec customers have been known to happily accept HP equipment when a competitor's equipment isn't in stock. But many of its customers won't accept the competitors' equipment if the HP model isn't available.

"That demonstrates the high regard rental customers have for HP equipment and its reliability," Akira says.

ORIX Rentec bases its reputation on fast response, precise quality-control systems and a network of 28 sales offices throughout Japan. It can ship equipment within 26 seconds after submitting a shipping order. And its distribution system enables the company to deliver products to customers in big cities within 24 hours.

It's no wonder that when customers throughout Japan need the best rental equipment available, ORIX Rentec delivers. ∎

left

Personal computers and communications-related instruments are among the most popular rental items. ORIX Rentec has been an important customer for Yokogawa-Hewlett-Packard since the rental company was established in 1976.

left

Two employees register newly purchased instruments, systems and other equipment into ORIX Rentec's inventory system. The company rents more than 150,000 items.

above

HP workstations help ORIX Rentec engineers develop software for the company's automated measurement system. ORIX Rentec is the largest of Japan's eight major test-and-measurement and computer rental companies.

right

ORIX Rentec employees in product assurance discuss necessary repairs on returned rental equipment. The company rents 15,000 different types of high-tech equipment.

below

One of the busiest sites in ORIX Rentec's headquarters is the shipping area. Because of the company's highly automated systems, it can ship equipment within 26 seconds after receiving a shipping order.

above

It's nice to take a break from the rigors of being the world's largest rental company. The cafeteria is a popular gathering spot for playing the board game "go."

A driving reign

HP instruments play a pivotal role in steering Nissan racing cars to more checkered flags.

By Jeff Weber

Gran Turisimo Prototype (GTP) race cars are among the most powerful in the world, boasting compact 3-liter turbo-charged engines that produce more than 800 horsepower and propel the sleek vehicles to speeds exceeding 200 miles per hour.

Yet sheer power isn't the only thing that distinguishes these single-passenger GTP racing machines. To be successful in the highly competitive International Motor Sports Association (IMSA) series—a showcase for automotive high technology—cars must negotiate the tight turns of demanding race courses such as Laguna Seca, Watkins Glen and Sears Point.

The chances of a car finishing first are greatly increased when the driver, pit crew and engine perform flawlessly. During the past several years, this kind of perfectly synchronized teamwork has earned Nissan Performance Technology Inc. (NPTI) a reputation as the dominant force in GTP racing. Now Hewlett-Packard is playing a vital role in Nissan's drive to continue seeing more checkered flags than its competitors.

Using instruments made at HP's Signal Analysis Division in Rohnert Park, California, the Nissan team can detect potential problems in the electronic engine-control system that could hinder the engine's efficiency or shut it down entirely.

Like all top-notch GTP teams, Nissan uses electronic engine-control systems to maximize horsepower, throttle response and fuel economy. In fact,

Nissan's drive to the winner's circle has been accelerated by an advanced electronic engine-control processor developed at NPTI—a leader in designing these devices for the racing public.

Serving as Nissan's "racing department" in the Southern California community of Vista, NPTI won the 1988 IMSA championship, the 1989-90 manufacturer's championship, and has guided the Nissan GTP-ZX turbo to the winner's circle an unprecedented eight consecutive times.

Nissan's record is even more impressive considering the fact that it has consistently beaten world-class opposition such as Porsche, Jaguar and Toyota.

NPTI's electronic engine-control systems are similar to the on-board computers in newer passenger vehicles. Like your family car, a race car's engine can be disrupted if something goes wrong with the computer. But because GTP cars have ultra-high-performance engines that can operate at more than 8,000 revolutions per minute (rpm), computer-related troubles on the race course could mean the difference between winning and losing. Or between finishing and dropping out.

"It's critical that the engine-control system performs impeccably," says Brent Dussia, electronics-design manager of the Nissan race team. "One spark-plug misfire can snap a crankshaft and the race is lost."

The Nissan GTP race car's engine-control system governs ignition and

Instruments from HP's Signal Analysis Division can detect potential problems in Nissan race cars' electronic engine-control systems.

fuel-injection timing, the fuel mixture, altitude compensation and the "turbo-boost" pressure. It also collects data on how the car performs during the race.

Ironically, the car's ignition system—which produces an 80,000-volt spark—has the potential to sabotage its own engine-control system. The ignition coil produces electrical noise, known as electromagnetic interference (EMI), that could create havoc in the on-board computer, possibly leading to misfires.

The goal, therefore, is to ensure electromagnetic compatibility (EMC) between the car's ignition system and the computerized engine-control system. In other words, the Nissan team wants to make certain the engine-control system is invulnerable to ignition-coil emissions as well as other sources of EMI such as garage-door openers,
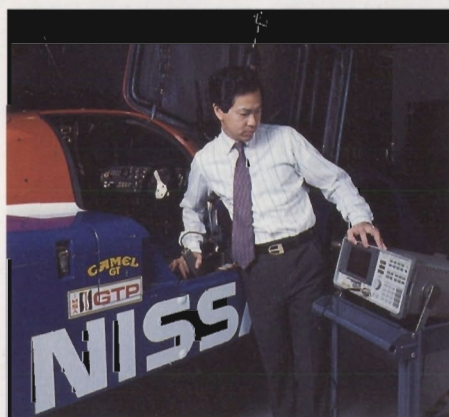
HP engineer Bert Dare uses a probe to test for electromagnetic interference.

mobile communication radios and a growing number of electrical signals bouncing around the atmosphere.

By using the HP 84110A EMC pre-production evaluation system, Nissan can minimize the effects of EMI on its

racing machines. With that assurance, the team can devote full concentration to the myriad of other details involved in professional racing.

"Our jobs are simplified knowing that the engine computer will perform up to specifications under severe race conditions," Brent says. "With HP's help, we can get down to the business of winning races."

The HP 84110A consists of an HP 8591A portable spectrum analyzer and accessories, including a set of close-field probes used to detect EMI hot spots. To help Nissan take full advantage of the HP EMC measurement system's capabilities, Bert Dare and Mark Heerema of the Signal Analysis Division conducted training sessions for NPTI technicians in San Diego. Field engineer

Joe Delia of HP's San Diego sales office provides ongoing support.

This commitment to customer service was one reason Nissan selected HP to provide an EMC solution. Other factors

> ## "Like Nissan, HP has always provided high-performance products."

were equally important. Nissan found the HP system to be powerful, highly reliable and economical. In a sense, HP is Nissan's kind of company.

"Like Nissan, HP has always provided high-performance products," says Bert. "The HP 84110A's impressive measurement capabilities and low cost were important considerations in Nissan's decision to go with HP."

Nissan is just one of many new HP customers in the fast-growing field of EMC testing. The advent of digital electronics has spawned a vast EMC market with customers involved in a variety of businesses, from medical equipment to data processing and instrumentation to professional racing.

There is a common denominator, however: the need to design electromagnetic compatibility into equipment to ensure that it works properly. And if the equipment is used commercially, it must meet increasingly strict EMC standards set by government and industry.

Perfectly synchronized teamwork at Nissan Performance Technology Inc. in Vista, California, helps keep it the dominant force in Gran Turisimo Prototype racing.

HP is aggressively pursuing new EMC business by offering complete-solution systems like the HP 84110A, which enable customers to meet standards quickly and avoid costly redesign and retesting.

If the relationship with Nissan is any indication, perhaps HP can look forward to lapping its competitors and becoming a dominant force of its own in the EMC market. ∎

(Jeff Weber is a senior communications representative for HP's three divisions in Sonoma County, California. He last wrote for Measure *about HP prototype model maker and hologram artist Greg Cherry in the May-June 1988 issue.)*

Chief Operating Officer Dean Morton reports on progress in HP's ongoing Quality Maturity System.

Deena Hood (left) and Colleen Arrhenius from the Disk Mechanisms Division tell Dean Morton about a life-test process which has led to a fifteen-fold improvement in product quality.

I n March, John Doyle and I had a chance to observe a Quality Maturity System (QMS) review at the Disk Mechanisms Division in Boise, Idaho. Since more than 80 such reviews are scheduled for this year—and since we have a company goal of achieving an average score of 3.5 out of 5 on QMS by 1994—I asked for this space in *Measure* to describe the role of QMS in our companywide quality-improvement efforts.

The Quality Maturity System (QMS) is our way of evaluating where we stand in our institutionalization of TQC—the level of maturity reached by our entities. And let me emphasize that TQC isn't an end in itself; it's a means to an end.

Our goal is to be the kind of company whose products and services are so valued by customers as to earn for us both their enduring loyalty and attractive profits. Many of the skills we need to reach

that ideal are firmly embedded in TQC:
- a thoughtful and useful planning process;
- a clear focus on customer needs;
- the ability to see our activities as processes that can be documented and improved;
- a cycle of continuous improvement;
- and the full participation of everyone.

The five elements above are precisely those evaluated during the QMS review, and the Disk Mechanisms Division (DMD) was an ideal site at which to watch a review.

For those of you who don't know DMD's story, the division was shaken by some bad news back in 1984: Its new disk drive, in whose quality DMD took much pride, faced stiff competition from more reliable, competitive products.

DMD (the initials then stood for Disc Memory Division) was forced to rethink some of its basic assumptions, and it undertook a TQC effort whose ultimate result has been that today's disk drives

have a mean-time-between-failures of more than 150,000 hours. That's a fifteen-fold improvement over the 1984 product quality, and it allows DMD to offer a five-year warranty on its disk drives. This represents leading-edge reliability at competitive prices.

The QMS review involved members of the quality community and of DMD's management team. It focused on how the division operates in order to achieve its business goals, not the division's results. That is a different way of looking at how a division functions and how to build on its understanding of processes critical for long-term success.

What was most striking about the review was its open and honest discussion. It was a learning process for those involved—not a "dog-and-pony" show for "those folks at Corporate." (And when the reviewers said "We're from Corporate and we're here to help you," they really meant it!)

The reviewers' comments were very constructive; they identified strengths in each of the five categories

> ## "What was most striking about the review was its open and honest discussion."

scored and areas where the division could improve. Instead of giving a laundry list of items for the division to work on, the reviewers recommended a critical few—a welcome approach to a busy management team that needs to pick its priorities carefully.

The division manager said that his team had learned a lot from the review.
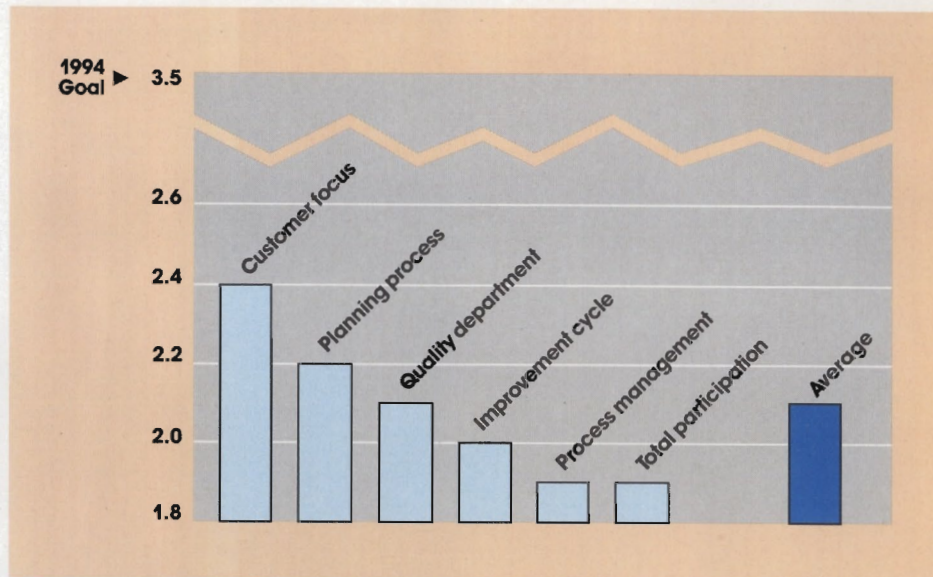
QMS rates the level of TQC maturity from 0 (no knowledge) to 5 (exemplary). Here's where HP currently stands versus the company goal.

In fact, preparing for the review created opportunities for improvements in several key areas.

That's an important point. It's not the QMS review itself or even an entity's score on QMS that's so important. Instead, the emphasis is on what happens both before and after the review—on how entities can move forward in the way they operate.

Today, the company's average score on QMS is 2.1. We've made good progress on TQC in a number of areas, but that's not enough. There's certainly no time to rest. You can be sure that our better competitors aren't easing up. That's why we've embraced QMS as a way to facilitate the transfer of best practices and accelerate our progress on the learning curve.

Continuous improvement—TQC—is a basic vehicle for long-term competitive performance for HP. Many people understand that continuous improvement can be achieved only with a disciplined approach toward our planning

and implementation processes.

And it's important to note that this doesn't mean complicated or ritualistic procedures. In fact, one of the things stressed repeatedly during the review at DMD was the importance of simplification and the value of having consistent, well-linked plans throughout the organization.

HP's 1991 Hoshin plan has a simple objective statement: Improve HP's profitability and restore excellence in all areas. To achieve those goals, we're working hard to make TQC the way we manage ourselves.

By using the Quality Maturity System as a "checkup" on how well we've integrated TQC, we can accelerate our improvement and make HP the kind of living, learning and winning organization we want it to be.

News from around the HP world

Roy Caldwell uses an HP 41C calculator during Desert Storm.

HP Labs' Michael McGuire signs copies of his book on fractals.

Thank you, Hewlett-Packard!

Staff members of the HP Credit Union in Palo Alto, California, received an unexpected response when they sent Valentine's Day cards to U.S. soldiers serving in the Persian Gulf.

Captain Roy Caldwell, a navigator on a KC-135 tanker aircraft, responded with a three-page letter and a photograph with an HP touch.

"Enclosed is a photo of myself at my navigation station," Roy wrote. "Notice what's in my right hand—an HP 41C calculator...an invaluable tool with which I do celestial navigation.

"Thank you, Hewlett-Packard!"

Roy noted that his aircraft refueled a B-52 aircraft "just hours before it crashed off the coast of Diego Garcia early in the war." His crew also saw a Patriot missile destroy a Scud missile during the conflict.

"...I can't help but feel for the people of Kuwait and Iraq who really felt the devastation of this conflict," he wrote.

A fine eye for patterns in nature

What do aspens in Nevada, kelp on California's Big Sur Coast and a tree fern in Australia have in common?

All appear in the new book, *An Eye for Fractals*, published by Addison-Wesley and written by Michael McGuire, a member of the technical staff of HP Labs' Printing Technology department.

It is illustrated with more than 150 black-and-white nature photographs that Michael has taken during travels throughout the western U.S. and Pacific Rim countries.

Fractal geometry only dates back to 1975, shortly after Michael completed his doctorate in physics at the University of Washington and became a serious photographer.

Where more traditional Euclidean geometry involves points, lines and planes, fractal geometry deals with the repetition of elements in nature—however irregular their form.

The word fractal comes from the Latin *fractus*, meaning broken. It is used in computer graphics to synthesize natural-looking landscapes.

For the layman, Michael explains that a fractal is something that doesn't get simpler when you magnify it. Usually the same design element repeats itself at all scales, called "self-similarity."

With his camera, he has found fractals in a lava flow, mountain ranges, rock forms, tree groves, clouds and water—showing nature's wonderful ability to repeat a theme.
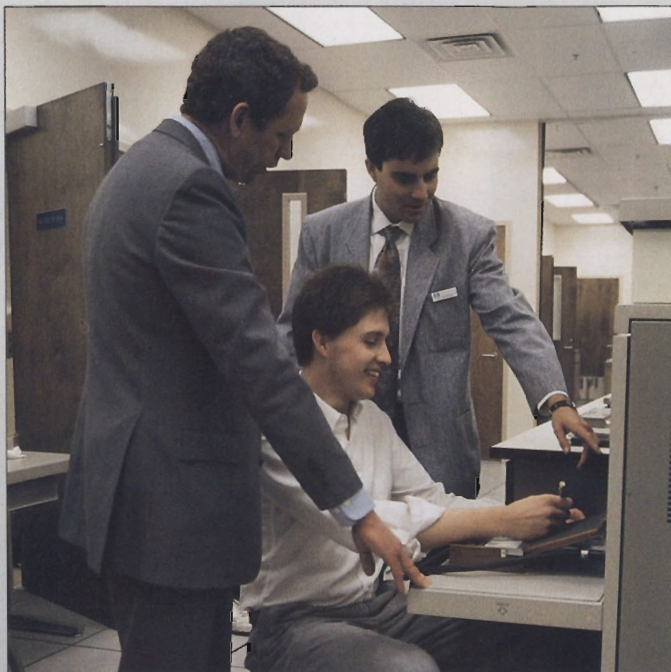
HP's Rolf Dalichow (left) and Bill Wasserman point out equipment features to UCLA graduate student Travis Stewart.

Campus kudos

Recent HP grants to the University of California at Los Angeles (UCLA) and Oregon State University (OSU) have given the two institutions a definite HP look.

A $3.4 million grant to UCLA helped create the Hewlett-Packard Microwave Measurement and Integrated Circuit Design Laboratory in the School of Engineering, while grants totaling nearly $1 million paved the way for the Hewlett-Packard Computing Resource Center at OSU's College of Business.

Rolf Dalichow, R&D section manager for precision resources at HP's Network Measurements Division, calls the UCLA facility "the best-equipped university microwave lab in the world."

The equipment grant allows UCLA to expand its undergraduate and graduate teaching capabilities and enhance its microwave research program.

New computing equipment for OSU, which includes 47 HP Vectra personal computers, converts the main undergraduate lab from all non-HP equipment to all HP gear.

Dean Donald Parker plans to use the new HP-funded center as a key differentiator among other business schools in the region.

BOTTOM LINE

Hewlett-Packard reported an 18 percent increase in net earnings and a 12 percent growth in orders in the first quarter of its 1991 fiscal year ended January 31.

Net earnings totaled $3.4 billion or 83 cents per share on about 247 millions shares of common stock outstanding (compared with $3.1 billion or 72 cents per share in the year-ago quarter).

Orders for the quarter were $3.7 billion (compared with $3.3 billion).

NEW CPO GROUP

V.P. **Bob Frankenberg** has joined the Computer Products Organization (CPO) to provide greater focus for the personal-computation business. He will oversee the existing Personal Computer Group (PCG) under General Manager **Jacques Clay** and head a newly formed Personal Systems Group (PSYG).

PSYG comprises the Corvallis Division and two entities from the former Cooperative Computing Group (CCG) that Frankenberg had headed within the Computer Systems Organization (CSO). They are the Cooperative Object Computing Division and the Roseville Networks Division.

At the same time, PCG has created a full-time group marketing function and folded the former North American PC Division into the California PC Division. **Didier Breton** becomes G.M., Grenoble PC Division.

NEW NSG STRUCTURE

Joining the Networked Systems Group (NSG) within CSO are three former CCG entities: the Colorado Networks Division, the Pinewood Information Systems Division and the Mechanical Design Division (MDD).

Other changes in NSG include merging the former Apollo Systems Division and part of the former Fort Collins Systems Division (FSY) into a new Workstation Systems Division, and formation of a new Measurement Control Systems Division under G.M. **Jim McCabe.** CASE (computer-aided software engineering) will be consolidated into a single division, using the existing name of the Software Engineering Systems Division. The Graphics Technology Division becomes the User Interface Technology Division.

Linda Taite and Ben Holmes, MPG G.M., review artwork.

Celebrating diversity

Medical Products Group (MPG) employees at Andover and Waltham, Massachusetts, are learning more about the diverse cultural makeup of their co-workers through four month-long celebrations.

The first, Black History Month, spanned parts of January and February. Nearly two dozen MPG employees attended a breakfast in honor of the late Dr. Martin Luther King Jr., the slain civil-rights leader and Nobel Prize winner.

Videotapes of his life were played outside the cafeterias at both MPG sites in Massachusetts.

Employees also viewed exhibits of African, African-American and Caribbean art. Items included paintings, photography, sculpture, wall hangings and jewelry from professional and amateur artists.

Future celebrations will focus on women, Hispanics and people who are physically challenged.

MORE CHART CHANGES

The former Logic Systems Division and Colorado Springs Division have been merged into a new division under the latter name. G.M. is **Tom Saponas.**

The Network Printer Operation under G.M. **John Stedman** has been elevated to division status and becomes the Network Printer Division.

In a continuing shift of engineering and management of mature software products from CSO to the Application Support Division (ASD), two former divisions—Manufacturing Productivity Division and Electronic Design Division—have become operations within ASD.

MORE NEW HATS

In CSO's Worldwide Sales and Marketing, V.P. **Bill Richion** becomes manager, Strategic Third Parties, responsible for CSO's largest global resellers. **Manuel Diaz** is named manager for computer sales in the Americas (Canada, U.S., Latin America).

Mike Naggiar to CPO sales manager for Canada and Latin America as part of worldwide field management team.

In the Printing Systems Group, **Steve Simpson** to G.M. of the Boise Printer Division and **Gil Merme** to G.M., Bergamo Hardcopy Operation.

Katsuto Kohtani to manager of corporate operations, YHP. **Mike Blomeyer** to G.M. for the Medical Products Group's Asia Pacific Geographic Business Unit. **Rui da Costa** to G.M., Latin America Region.

USFO REGIONS

In U.S. Field Operations (USFO), G.M.s of the four geographic regions have assumed many responsibilities formerly held by area G.M.s and the latter role has been phased out.

Newly named region G.M.s are **John Regan,** Southern Sales Region, and **Mark Milford,** Eastern Sales Region. **John Salyer** will manage a major USFO admin and support complex to be built in Atlanta, Georgia.

WORTH NOTING

New initiatives in East Central Europe include the opening of HP subsidiaries in Poland and Czechoslovakia and a joint venture with an HP dealer in Hungary.

HP has moved up from 33 to 29 in the Fortune 500 list of largest U.S. industrials.

Dancing to a new tune

SAN JOSE, California— The sound of firecrackers and the smell of Mongolian fire pot delicacies filled the air as a colorful Chinese lion snaked its way through the HP campus.

The occasion was the first of a week of cultural and ethnic diversity activities in March at HP's San Jose site.

A recent survey of half of the site's 1,600 employees revealed that workers here represent 48 countries of origin and 30 native languages.

"Only by being aware of our cultural and ethnic differences can we learn to use these differences to everyone's benefit," noted Kathleen O'Neill, site diversity/affirmative action coordinator.

In addition to Asia/Far East and Oceania day, San Jose employees devoted four lunch periods to recognize North America, Asia/

STACY GEIKEN

A Chinese lion dance kicked off Celebrate Diversity Week at the San Jose (California) site.

Middle East and Africa, Latin America and Europe.

Demonstrations included American Indian, Scottish and Moroccan belly dancing, as well as tortilla making, banjo playing and an international "Jeopardy!" game.

Guest speaker Dr. Homa Bahrami from the Haas School of Business at the University of California at Berkeley described the importance of cultural

diversity as a critical success factor in corporations of the future.

MOVED LATELY? CHANGE OF ADDRESS SHOULD BE REPORTED TO YOUR PERSONNEL DEPARTMENT.
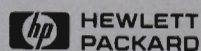
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