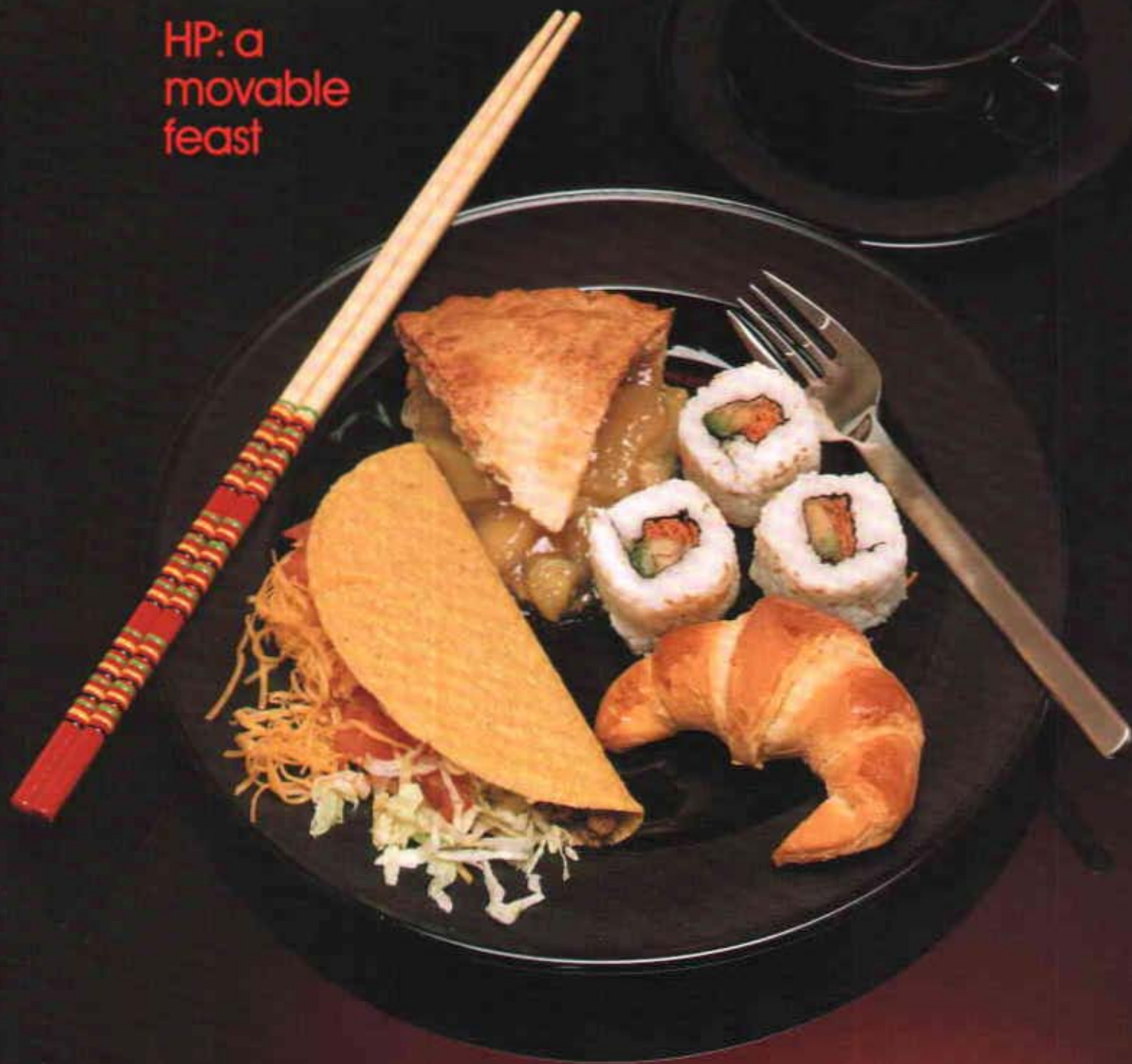


For the people of Hewlett-Packard

January-February 1992

# MEASURE

HP: a  
movable  
feast





page 12



page 20



On the cover: HP's cultural makeup comes in many flavors. For a "taste" of how best to conduct business around the world, see the story on page 23. Cover photo by Douglas Peck

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## MEASURE

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Hewlett-Packard Company is an international manufacturer of measurement and computation products and systems recognized for excellence in quality and support. The company's products and services are used in industry, business, engineering, science, medicine and education in approximately 100 countries. HP employs 89,000 people worldwide and had revenue of \$14.5 billion in its 1991 fiscal year.



Measure magazine is printed on recycled paper.





Quarterly conference calls with securities analysts can be unnerving experiences for HP financial experts George Newman and Bob Wayman (first photo), Jim Murrin and Joe Zaelit (second) and a gathering of employees who provide backup information.

# Taking stock in HP

*By Michael Scofield*

**Stock-market prices can have all the stability of a roller coaster. How well you communicate with Wall Street's crystal-ball gazers can make all the difference.**

On November 19, 1991, HP's Chief Financial Officer Bob Wayman, Treasurer George Newman and Treasury Manager Joe Zaelit sat at Corporate offices with headphones donned. It was 8 a.m. in Palo Alto, California, and they were about to talk to 130 securities analysts from around the United States about the fourth-quarter financial results HP had publicly released two hours earlier. By the time they'd finished, the HP officials had spent 30 minutes on presentations and an intense hour on questions and answers.

The reason for the quarterly conference call with securities analysts is simple—to help these highly influential people understand HP's financial results.

What are the sessions like?

"In a 60-minute question-and-answer period any of 130 analysts could ask questions about any of HP's 12,000 products, or sensitive questions about HP's financial performance, and our job is to answer the questions as quickly and knowledgeably as possible," George explains.

Adds Joe, "It can be an unnerving experience at times."

George's earnings-day routine is the same: He always stops by HP's Corporate Communications department at 6 a.m. Pacific Coast time—30 minutes in advance of the 9:30 a.m. Eastern Standard Time opening of the New York Stock Exchange—to see that the quarterly earnings press release has been posted on



HP's electronic bulletin board.

At the same time, Investor Communications Manager Steve Beitler ensures that faxes with the same data have been sent to HP offices in Europe and Tokyo, and to Business Wire, which distributes financial information to United States and international wire services and publications.

That particular November morning, Bob, George, Joe and Steve reported that, due to special charges for voluntary-severance and related programs, HP's net earnings for the fourth quarter were down 38 percent from the fourth quarter of fiscal '90.

By the end of the day on the 19th, HP's stock price rose 12.5 cents on the New York Stock Exchange.

Why hadn't it fallen instead?

"Because," says George, "disregarding the special charges, our per-share earnings for this quarter would have been an increase over last year. While analysts expected slightly higher earnings in the fourth quarter, they recognized that our operating results were pretty good compared to most high-tech companies.

"When financial results are favorable, the stock price usually rises. When the results aren't, the price usually drops.

"In the long run, stock value reflects a company's health and potential. Most analysts feel that our lack of long-term

***"HP is one of the healthiest, big high-tech companies around."***

debt, product diversification and astute R&D makes HP one of the healthiest, big high-tech companies around. Short term, it's a different story. Market conditions, emotions and a host of other factors can influence the market."

## The stock that (almost) never sleeps

Here are the exchanges on which HP stock is listed. When the New York Stock Exchange opens at 9:30 a.m., it's 2:30 p.m. that afternoon in London, 3:30 p.m. in Paris, Frankfurt and Zurich, 6:30 a.m. in San Francisco and 11:30 p.m. in Tokyo. When New York stops trading at 1 p.m., Tokyo won't open for two hours—at 9 a.m. the next day.

With 251 million shares of stock outstanding in the United States and overseas—representing \$12.5 billion at \$50 per share—HP is a major stock-market presence. On a typical day, investors will buy or sell about 700,000 of those shares—550,000 through the New York Stock Exchange, 50,000 each through the London, England, and Frankfurt, Germany, exchanges and about 10,000 each through the Pacific Coast, Paris, France, Zurich, Switzerland, and Tokyo, Japan, exchanges.

Although the number of shares traded outside the United States is relatively small, being listed internationally is important for HP's business.

Franco Mariotti, senior vice president and director of HP's Europe/Middle East/Africa Operations, says, "Listings in Europe give us stronger local presence. That means more investors, more press coverage, and greater attention and commitment to the economies of these key European countries.

"There is no doubt that since our listings in 1989 we've developed our links with financial institutions, and shown higher-than-average sales growth for computer systems in the financial and banking markets."

Adds Yokogawa-Hewlett-Packard

President and G.M. Kenzo Sasaoka, "Having HP listed on the Tokyo exchange helps our salespeople open doors."

While 1988 saw HP's first listing in Tokyo, and its first listing in Europe a year later, the stock has traded on the New York Stock Exchange since 1961. It's New York that sets the standard for prices worldwide.

Of HP stock outstanding, HP employees own about 6 percent. Non-HP individuals own about 18 percent. Co-founders Bill Hewlett and Dave Packard and their foundations own approximately 26 percent.

But firms that manage investment portfolios, such as stock mutual funds, pension funds, bank trust departments and insurance companies, constitute HP's largest owners. They own 50 percent of HP shares.

Usually lumped under the term "institutions," firms that manage investments

***...senior officers should spend their time managing HP's business.***

represent 85 percent of the daily buying and selling of all stocks listed on the New York Stock Exchange.

Although some company CEOs routinely communicate directly with securities analysts, HP's philosophy is that senior officers should spend their time managing HP's business. George and Joe are the ones who deal extensively with analysts.

Says George, "We can't avoid some price ups and downs; if you've had a disappointing quarter it *will* negatively impact your stock price. The company has always been conservative when





THE STOCK MARKET/RANDY DUCHAINE

Investors buy 700,000 shares of HP stock each day on the London, Frankfurt, Paris, Tokyo and New York (above) exchanges.

talking with the financial community. The strongest tools Joe and I have in building confidence among analysts are to get the same information out fast, treat every one of them the same and be responsive to their requests."

The quarterly conference calls are only one way HP communicates directly with analysts. The company hosts more than 200 analysts at a 2½-hour breakfast meeting in New York in May, and holds a similar non-breakfast session for 150 analysts at Corporate Offices in Palo Alto in December. After presentations, HP President and CEO John Young and other officers answer questions.

Individual analysts are welcome to phone or visit with George or Joe throughout the year. And they need only a computer and modem to retrieve the published information that Corporate Communications releases on the HP 3000 electronic bulletin board.

As a result of all this attention, three years ago the Financial Analysts Federation awarded HP first place for excellence in corporate reporting.

More importantly, most of the 50 or so analysts who look at HP "under a microscope," as George puts it, are positive about HP. For example, following the December 1991 securities analysts meeting in Palo Alto, analysts issued these recommendations to their clients:

- (Buy) "HP's meeting further convinced us that the company is the class of the computer industry and the stock should be a long-term winner."—Steve Milunovich, Solomon Brothers
- (Upgrade from "hold" recommendation to "buy") "The strong product portfolio should help HP weather the current economic storm relatively well as compared with the other major hardware vendors."—Timothy McCollum, Dean Witter Equity Research
- (Will perform similar to the market) "Hewlett-Packard's revenue growth and earnings are increasingly sourced from higher risk segments that ultimately should increase earnings volatility and depress the company's multiple (ratio of stock price to earnings per share)." — Barry Willman, Bernstein Research

■ (Aggressive buy) "We believe HP is the healthiest large cap stock under our coverage." — John Jones, Montgomery Securities

Why—using the same financial data—did analysts differ so widely in their recommendations?

"Like most of us, analysts see the same facts in different ways," George explains. "They're paid to predict future earnings accurately. We don't give any specific guidance, but we'll tell them if their assumptions are way out of line, based on our targets.

"Generally, if we fall short of our own targets, we'll fall short of the analysts' expectations."

Today's professional crystal-ball gazers look at all information at hand and predict a company's performance by two ratios: Earnings per share (EPS) represents net income divided by the number of shares of stock outstanding. The price/earnings (P/E) ratio gives the price of one share of stock divided by net earnings per share.

The higher the ratios, the more faith









NASA

HP test equipment plays a vital role in testing the space shuttle before flight and a mechanical arm that can deploy and retrieve satellites.

HP test equipment performs a battery of hardware tests before the space shuttle Discovery blasts off from the John F. Kennedy Space Center in Florida.

# We have liftoff

*By Tom Ulrich*

After four days in space, Discovery sounded its approach to Runway 17, an ancient lake bed in the high desert of California.

Gliding out of the west in a powerless descent, STS-26 marked the final leg of its 1.68-million-mile journey with a double sonic boom that rippled through the stratosphere and the enormous knot of spectators gathered on the desert floor.

Every head turned skyward as the

shuttle swooped over the east end of Rogers Dry Lake. Every heart quickened as the Discovery fell silently to Earth and rolled to a stop—three seconds after NASA scheduled it to land.

Standing beneath the shuttle, Richard Truly, associate administrator for space flight, noted that the nose wheels of the Discovery rested squarely on the runway center line. "I don't think you can get much better than that," the former



astronaut said.

"It's a great ending to a new beginning," Steve Hammond radioed to shuttle astronauts from Mission Control.

NASA has inspired sweeping changes to shuttle design since Sharon Christa McAuliffe flew aboard the Challenger on January 28, 1986. Morton Thiokol made the most obvious changes to the flawed solid-rocket booster whose leak triggered the shuttle explosion. Other contractors have made hundreds of subtle changes to the wiring, main engine, wings, steering and landing gear of the orbiter itself.

The space agency has sought to reduce risk by thoroughly testing shuttle hardware before it takes flight. Consistent with that idea, Hewlett-Packard's Integrated Systems Division (ISD, formerly the Advanced Manufacturing Systems Operation) built a pair of test stations based on the HP ATS 2000 Automatic Test System to electronically inspect the newly designed main engine controller of the shuttle.

Moments before liftoff, the pilot fires the main engines. Controllers manufactured by Honeywell's Space Systems

***Automatic test equipment (can provide) the same data today, tomorrow...***

Group signal the valves located on the bullet-shaped external fuel tank to release enough liquid hydrogen and oxygen to create 375,000 pounds (170,000 kilograms) of thrust.

Eight-and-a-half minutes later, three variable-thrust, liquid-propellant rocket engines and two solid rocket boosters have lofted the 210,000-pound (95,000-

kilogram) spacecraft into a 16,500-mile-per-hour (26,500-kilometer-per-hour) orbit some 200 miles (320 kilometers) above Cape Kennedy.

Engineers at Honeywell's Space Systems Group factory in Clearwater, Florida, simulate prelaunch checkout, firing sequence, main-stage operation and shutdown sequence for the shuttle's three main engines, using a Honeywell engine controller and HP test equipment. In flight, the controller queries data sensors 50 times per second to obtain peak engine performance while operating the shuttle within safe limits during launch and ascent.

***"Any way we can eliminate test-equipment or operator error has enormous payback."***

HP 9000 Series 360 computers on the production floor and in the test lab execute programs that replicate instructions that on-board computers relay to the main engine controller during the four stages of launch and ascent. Test-station instruments such as the HP 3245A waveform generator simulate values that the engine controller gathers during ascent. And an HP 54501A digital scope reads the values and passes them back to the Series 360 so that Honeywell engineers can interpret results.

Honeywell and other NASA contractors can't depend on technicians to set, read or record a voltage, only to have them make an error transposing a number. Automatic test equipment can repeat a measurement, giving them the same data today, tomorrow, next week or next month.

"We have to investigate every failure as though it were a controller failure," says Robert Donehoo, project engineer for the Space Systems Group. "If an operator or the test equipment fails, we investigate it until we determine the cause.

"In a man-rated space program," Robert continues, "each test failure costs us an average of eight man-days to resolve. Any way we can eliminate test-equipment or operator error has enormous payback."

Payback occurred months before the test stations arrived at Honeywell. Early delivery of a test-development station which runs ISD's ATS 2000 software permitted Honeywell engineers to write test programs that link the Series 360 to HP and Honeywell instruments several months ahead of schedule.

"As a result," says Marco Legoas, systems engineer for Honeywell Avionics Division, "the test stations came on-line in December 1991—four-and-a-half months ahead of schedule."

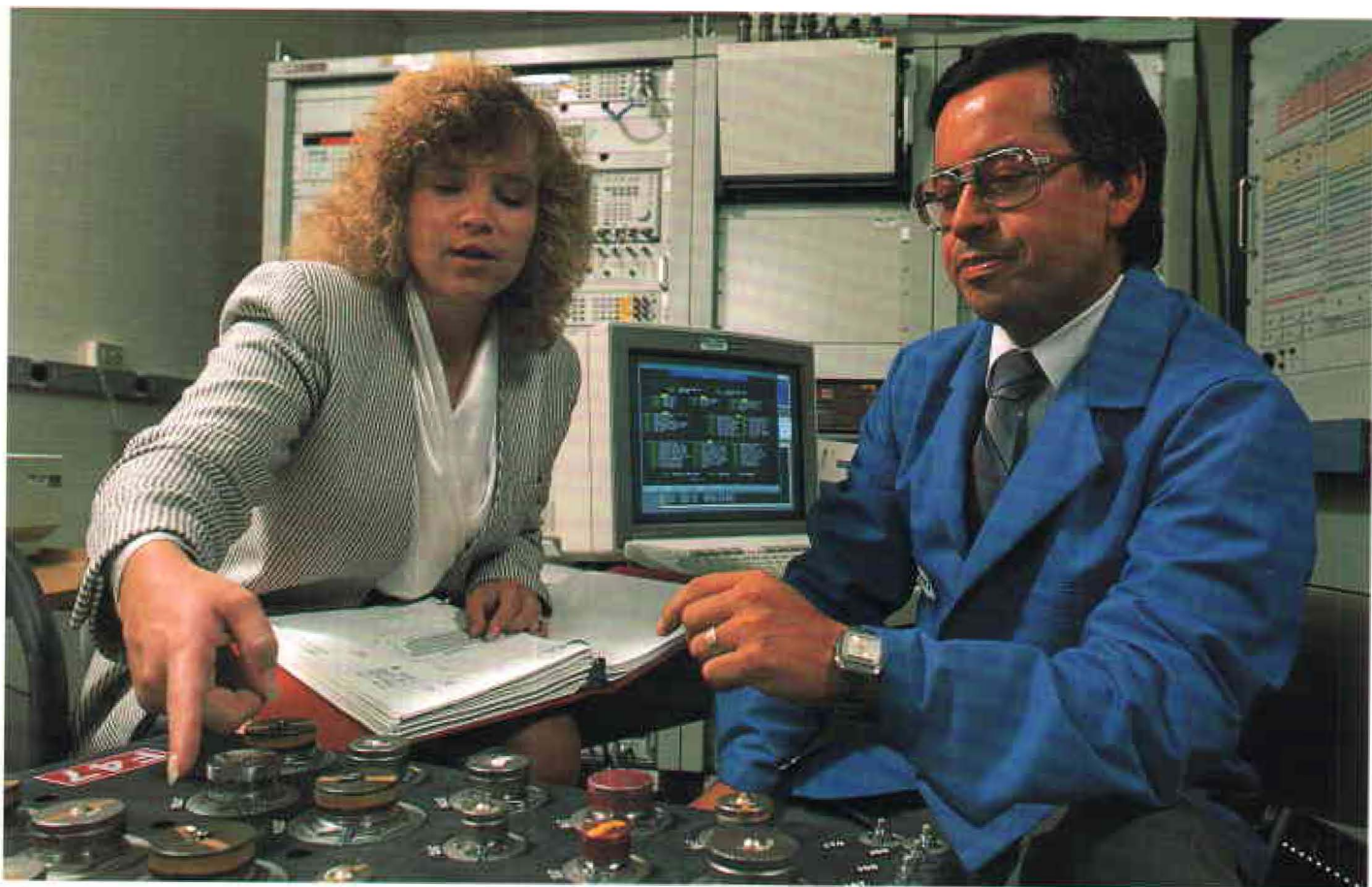
Future astronauts had much to cheer about the day Discovery electrified the

***Spar is creating a roving space robot.***

440,000 spectators gathered near runway 17 at Edwards Air Force Base in California. Hours before the STS-26 landed, Canadarm—a mechanical arm with a 15-meter reach—extended beyond the cargo bay of the shuttle and lofted its tracking relay satellite into space.

Space agencies around the world now recognize Canada as the cradle for





ED MALLEY/GAMMA LIAISON

HP sales rep Brenda Harp and Marco Legoas, Honeywell systems engineer, discuss HP's role in simulated prelaunch shuttle testing.

advanced robotic research. It's another part of the space program in which HP plays a role.

Spar Aerospace (Mississauga, Ontario) developed Canadarm as part of the Canadian Space Agency's contribution to the shuttle program. Payload specialists use the arm to push a satellite away from the cargo bay and place it in orbit. They can use it to recover a failing satellite as well.

Canadarm is a three-jointed mechanical arm that can deploy or retrieve payloads as large as four, 18-wheel trucks, or service a satellite the size of a subcompact automobile.

Spar Aerospace tests Canadarm at its development center in Montreal, Quebec, and its integration facility in Mississauga, Ontario. At both locations, engineers must move all or part of the arm as if it were attached to the space shuttle. In Montreal, engineers test the IC boards that control each joint. In Mississauga, they test the arm itself.

Both locations operate Hewlett-Packard test stations in combination

with their own test equipment. Each station is made up of a rack of instruments and a controller. The instrument rack contains an HP 16500A logic analyzer, an HP 3235 switch controller and three power supplies. The controller rack includes an HP 1000 series A400 computer, an HP 3478A multimeter, an HP 3314A function generator and an HP 486 Vectra personal computer with a 14-inch color display.

All the board tests at the development lab are automated. An operator loads the program, connects the computer and some part of the arm, and runs the test. If the computer detects a fault before the end of the test, an error message appears on the screen.

Montreal added its own high-speed boards to the test system. These boards create electronic signatures for parts of the arm they do not have but need to include in their tests to emulate the application accurately.

Mississauga has produced five robotic arms since it built the first one

for \$100 million (Canadian) in 1978. In the coming months, engineers there expect to build many more.

In October 1991, NASA broke ground for the largest construction project at Kennedy Space Center since the Apollo moon program. The three-story, hangar-like building will contain 63,000 feet (5,850 square meters) of floor space for assembling and testing parts of the space station.

Scheduled for completion in early 1994, the project will employ some 1,000 NASA and contract employees at the factory.

Spar Aerospace—along with Honeywell, Boeing, McDonnell Douglas and GE—will build key elements of the Freedom Space Station.

For its part, Spar is creating a roving space robot called the Mobile Servicing System (Rover). The shuttle will transport Rover to a platform about 310 miles (500 kilometers) above the Earth where it will assemble and maintain the space station. Rover will move equipment and



supplies around the platform; release and capture satellites; support astronauts servicing instruments attached to the outside of the space station; and tether the space shuttle to Freedom while it loads and unloads the shuttle cargo bay.

The mainstay of the Mobile Servicing System is a mechanical arm about the size of Canadarm but three times as strong. It will help dock an incoming shuttle. And it will free itself from a movable base, and crawl hand-over-hand across space-station trusses to service hard-to-reach equipment.

Another robot called the Special Purpose Dexterous Manipulator (Dexter) will handle delicate work such as maintaining electrical circuits and fuel lines. Dexter will have two arms that are two meters long. It can work alone or as a companion to the big arm by connecting with it end-to-end.

NASA has scheduled shuttle flights to assemble the Freedom Space Station to

***"With this program, Canada has become the leader in space robotics."***

begin mid-1996. The space agency estimates that construction will require 20 flights and three years to complete.

In addition to the Mobile Servicing System and the Special Purpose Dexterous Manipulator, Spar will place its Space-to-Ground Communication Tracking Antenna on the platform. The space station will maintain communica-



The HP-tested Canadarm, developed by Canada's Spar Aerospace, can deploy or retrieve satellites as large as four 18-wheel trucks in space.

tion with Earth via the antenna and the NASA satellite that Discovery lofted into space on October 2, 1988.

The Mobile Servicing System, the Special Purpose Dexterous Manipulator and the Space-to-Ground Communication Tracking Antenna will rely on HP automatic test equipment during research and development. The equipment will look and operate much like the test system Spar engineers created for Canadarm.

"From the beginning, electrical test has been a key ingredient to the flawless performance of Canadarm in space," says Garry Lindberg, vice president of research and applications for the Canadian Space Agency. "With this program, Canada has become the leader in space robotics. And we intend to maintain that reputation for excellence in the years to come."

Chuck Yeager started the United States' ascent toward outer space near Rogers Dry Lake on October 14, 1947, by

breaking the sound barrier in the X-1, an experimental aircraft. Man and machine continued their climb toward the heavens when Discovery, a ship with wings—not a space capsule—crossed the sound barrier over Edwards Air Force Base 41 years later.

With the help of a newly designed main engine and robots such as Canadarm, astronauts and engineers aboard this space-faring cargo ship will build a gateway to the universe—but not without the quality and reliability that an automatic test system ensures. ■

*(Tom Ulrich writes for the Integrated Systems Division in Sunnyvale, California.—Editor)*



## Environmental update

To *Measure* readers: In the July-August 1991 issue we reported that HP had reduced its use of chlorofluorocarbons (CFCs) by more than 46 percent in the past 18 months.

The Corporate Environmental Health and Safety department has announced that, as of the end of the third quarter of fiscal 1991, HP has reduced CFC use by 67 percent.

HP has a companywide goal to eliminate all uses of CFCs in manufacturing by the end of 1994.—*Editor*

## Not a panacea

The (September-October 1991) article announcing HP's new performance grading system was informative and a good explanation of how our company continues to change.

It is surprising, however, to see that some managers' attitudes toward "management" has not changed. Ian Ross mentioned that the "action needed" category means managers "have to play the full management role." I have two reactions to that comment:

1) Don't managers who have an effective organization "play the full management role"? None of my colleagues fall into the "action needed" category, but our manager plays the full management role—and we love it!

2) In my past positions as a production section manager and personnel liaison, there seems to be one strong correlation between "action needed" personnel and the management under which they report. But for real individ-

ual problems, "the manager" that does a good job of ...

a) knowing the type of personnel their positions require;

b) hiring capable people for those positions;

c) orienting and training their new employees;

d) providing an environment where the individual can achieve group and personal goals (empowerment = responsibility and authority).

... does not have many employees that would fall into that "action needed" category.

Finally, the issue of being "very good," etc. versus (a rating of) 1, 2, 3 or 4 still ends with fair and equitable assessment of employees and their performance. This is not an easy task. Don't try to make us believe that a numeric system, alone, is a panacea. The article does not argue that it is. My hope is that the implementers don't try to position this strategy change in that manner.

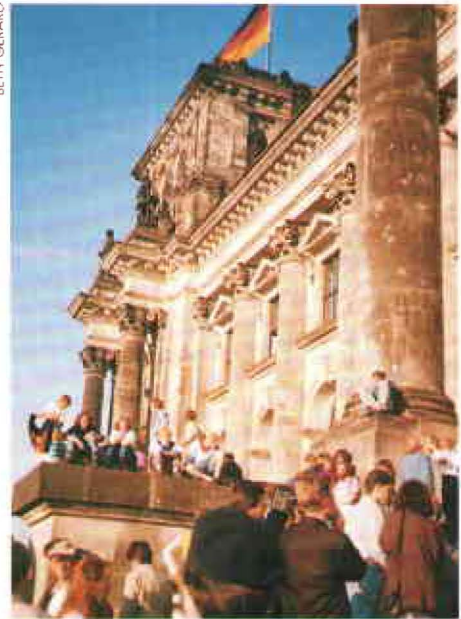
JERRY KRYGIER  
Greeley, Colorado

## Please send mail

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

Address HP Desk letters to Jay Coleman; by company mail to Jay Coleman, Building 20/BR, Palo Alto. Via regular postal service the address is *Measure*, P.O. Box 10301, Palo Alto, CA 94304-1181 USA. Please limit your letter to about 150 words, sign your name and give your location. We reserve the right to edit letters.

BETTY GERARD



Flags were flying and excitement was high at the Reichstag in Berlin on Reunification Day in October 1990.

## An error in the air

The article "The two Germanys unite" describes very well the current situation here. However, it begins unfortunately with a mistake: the text below the picture of the Reichstag (parliament) in Berlin is incorrect.

The caption reads, "Replacing the flag of the former East Germany, the flag of a united Germany flies atop the Reichstag (parliament) in Berlin..."

There was never a flag of the former East Germany atop the Reichstag, because this building is located in (what was) West Berlin. You can see it from East Berlin, because the Berlin Wall once ran just next to it.

RADEK LINHART  
Böblingen, Germany



Telecom '91 may have been an eye-popping, glitzy show, but it also was an important showcase for HP's telecommunications business.



Hewlett-Packard's three-story pavilion at Telecom '91 in Geneva, Switzerland, provided ample room for demonstrations, meetings and high-level discussions with customers.

# That's "show" business

By M. Daniel Rosen

GENEVA, Switzerland—The sky is azure this October afternoon. The Alps are clearly visible in the distance. Inside Geneva's massive Palexpo convention center, a skyline of phantasmagoric pavilions looms six stories high. An array of stands and exhibits spreads for nearly a million square feet.

It is the day before the opening of the Sixth World Telecommunications Exhibition—Telecom '91, as it's called—the nine-day, billion-dollar, quadrennial celebration of the fastest-growing

technology industry in the world.

The air is a clattering of hammers and power saws. Workers on forklifts careen through the corridors. At a table in the VIP visitors' lounge of the Hewlett-Packard pavilion, Franco Mariotti and Adrian Tamone talk about last-minute details. Franco is senior vice president and director of HP's Europe/Middle East/Africa Operations. Adrian is HP's project director for Telecom '91.

Why is HP here at this show?  
"We're one of the telecom industry's



most important suppliers of computer systems and test-and-measurement equipment," Franco says. "Last year, 25 HP divisions sold about \$500 million worth of equipment and services to the world's telecom suppliers.

"This is the biggest telecommunications-industry event in the world. Being here is a key to our future in global telecom."

Demand for more sophisticated, end-to-end telecommunications services—for more quality, more value in those services—is growing and growing rapidly. Modern telecommunications networks are spreading around the world. According to the U.S. Department of Commerce, the worldwide value of those networks was about \$390 billion in 1987, and was expected to reach more

**"Being here is a key to our future in global telecom."**

than \$600 billion by the end of 1991. As one observer put it, "Telecommunications is the new infrastructure of the global marketplace."

Traffic on those networks is growing. In 1983, for example, AT&T handled about 2.5 billion minutes of international transmissions. By the end of 1987, that amount had nearly doubled. And according to the most reliable projections, the total will soar to 8.5 billion minutes this year—an increase of 340 percent in less than a decade's time.

Adrian sweeps his hand toward the floor-to-ceiling windows. "Take a look around at the other pavilions and stands," he says. "All the world's important phone companies are here. All the



Filippo Pandolfi (center), vice president of the European Commission, spent two hours in the HP pavilion, including talks with HP's Franco Mariotti and John Young.

industry's premier suppliers are here. Our major customers are here. Our major competitors are here. It's important that we show our strengths here."

The Hewlett-Packard pavilion is as large as a London town house. It is three levels high, covers 4,500 square feet and glitters with mirrored walls. There are 60 HP people to staff it—sales and marketing reps, applications and product specialists, technicians, uniformed hostesses and support personnel.

Emile van Reepinghen of HP Belgium is the pavilion manager; he's responsible for day-to-day operations. Emile tells the hostesses at the ground-floor registration desk that more than 300,000 people will visit the show. About 10,000 of them will come to the HP pavilion.

Marius Cojanu, strategic marketing manager of HP's European Network Marketing Center, adds that in addition to the hundreds of thousands of professional attendees, many of the visitors are members of the public. "Parents take their children. Schoolteachers bring their classes. Telecommunications is the new technological frontier," he says. "This show is a glimpse into the future. People are fascinated by it."

The ground-level floor in HP's pavilion is geared to the average person's inter-

ests, Emile notes. "We show them a multimedia production, guide them around our displays and do our best to make them welcome."

It's calm inside the convention center the first morning of the show. All that can be readied has been readied. All that can be done has been done. The reporters are off to a press conference. The visitors are yet to come. At 2 p.m., United Nations Secretary General Javier Pérez de Cuéllar presides at the opening ceremony, and Telecom '91 begins.

The HP pavilion instantly leaps alive. The ground-level area is so crowded that an HP sales person from Norway holds an impromptu meeting on the passage-corridor in front. Karl Meulema and

**"Telecommunications is the new technological frontier."**

Ton Geelen, sales people from HP Netherlands, greet walk-in visitors.

"We never ask an open question, such as 'Can I help you?'," Karl says. "That calls for a 'yes' or 'no.' We always ask 'Is there something you're interested in particularly?'—something that will start a conversation."

The live demonstrations on the second floor are geared to those serious prospects. They operate without interruption throughout the length of the seven-day show.

Each serious visitor is looking for something different. Telephone company people want to see the HP test-and-measurement equipment they can incorporate into their networks. Systems



# "Show"

integrators want to know how HP's measurement and computational products and applications can be customized for their clients. And executives from large corporations need to find out how HP can help them get better access to information.

HP offers more than 90 instruments and systems specifically suited to installing and maintaining telecommunications networks, plus 400 test-equipment products. The company's telecommunications strategy is clear-cut: HP's combined expertise in measurement and computation exceeds nearly all vendors. HP can:

- Provide advanced tools to design, install and test telecommunications networks.
- Furnish the computing power necessary to add services that customers want.
- Integrate measurement and computation to help build network-management solutions.

At a station near the circular staircase, Robin Sharp from the Queensferry

## *When one part fails, a crisis can develop in minutes.*

(Scotland) Telecom Division demonstrates the HP 75000 Series 90 modular SONET/SDH analyzer—a test system for R&D, manufacturing and conformance testing. Not far away, Marc Powell from the Test and Measurement market-



HP executives conducted more than 650 meetings with customers in the VIP lounge during Telecom '91.



Maggie Boerner, who organized the VIP program, checks the daily meeting schedule with hostess Denise Weber.

ing center in Amstelveen, Netherlands, demonstrates the HP 4980A network advisor — a protocol analyzer for local-area networks (LANs) used by private network managers.

A crowd gathers around the live 3-loop-model demo, a prototype network-management system HP developed for the University of Geneva in close cooperation with HP Labs in Bristol, England. It's an example of open-systems management in action across a large, multivendor, multi-LAN configuration.

More than 2,000 computer users at the University of Geneva depend on

their network as much as they do on their telephones. When one part fails, a crisis can develop in minutes. Operators and engineers need adequate tools to identify, diagnose and fix problems. More important, they need tools to help

## *Akio Morita, co-founder and chairman of Sony, has come for a visit.*

predict and remedy problems before they develop.

Suddenly, there's a commotion on the demo floor. A white-haired Japanese businessman is passing from station to station. He watches and listens with obvious interest. Frequently, he stops to ask questions. It is Akio Morita, co-founder and chairman of Sony, who has come from his own pavilion for an unexpected visit.

The next morning, a throng appears at the ground-level entrance to the pavilion. Franz Geiger, general manager for HP Austria, says that he expects about 30 specially invited guests. "If the group is small, they meet on our third-level, VIP floor," Franz explains. "If the meeting is too big, they meet over at HP's European headquarters—five minutes away from the exhibition."

André Meyer, general manager for HP's Grenoble (France) Networks Division, is with a group at a table near the windows. Lew Platt, executive vice



president, and Franz Nawratil, HP vice president and worldwide sales and marketing manager for the Computer Systems Organization, are sipping coffee nearby, waiting for their next appointments.

The door to a meeting room opens and HP President and CEO John Young steps out for a break. "John Young is not here to sightsee," says Adrian Tamone. "He's as much a working sales person as anyone else on our team. He has an important press conference scheduled, he's speaking at a major discussion forum and he's booked solid for top-level meetings during his stay in Geneva.

"Traditionally, in the test-and-measurement market," Adrian continues, "we've felt comfortable talking to the people 'at the bench'—the technical people, the engineers, the middle managers. But the telecommunications industry is different. We have to reinforce our contacts with top decision-

***"They need a lot of advice, and they look to people like us for counsel."***

makers. People like John are here to help us."

Marius Cojanu walks over. Marius was born in Romania. He taught computer science at the technical institute in Bucharest before he emigrated to the west. "I just met with the heads of the Romanian government's information-technology commission," he says. "They



MICHEL BLANC

The week-long Telecom '91 is the biggest telecommunications-industry event in the world, drawing major telephone and communications companies, suppliers and customers.

set policies and standards for telecommunications spending.

"Romania has an awful lot of catching up to do. The commissioners want to improve the current level of service but they also need to build for the future. The issues are very complex. They need a lot of advice, and they look to people like us for counsel."

How does HP measure results from its presence at Telecom '91?

"By the people who came to visit us and why they came to visit," Marius says. "We also measure success by how well we delivered our messages: Do we see a positive shift in customer preference for HP? Do people see that we can help them manage their networks? And how far did we go toward sales?"

"Some of the measurements take time to evaluate. At the end of the day,

all sales are the result of a long process of dialogue. Our job was to move the process forward or to get it started in the first place. We were here to meet new people and to reinforce our story with the people we know.

"I think we did a pretty good job." ■

*(This is the first Measure article by M. Daniel Rosen, a New York, New York-based free-lance writer.—Editor)*



# A taste of the future

IRVINE, California—Helicopters at the Tustin Marine Corps Air Station pierce the crisp, chilly air and head skyward on maneuvers on this late November morning in Southern California.

Fifty yards away across heavily traveled Barranca Parkway—about a mile from corporate headquarters—one of the busiest of Taco Bell's 3,200 restaurants is open for business.

And like their high-flying military neighbors, business at Taco Bell is taking off.

In one of the world's most fiercely competitive industries, Taco Bell is teaching its competitors a few lessons in innovation.

In the late 1980s, Taco Bell Corporation, a subsidiary of PepsiCo, Inc., conducted an extensive survey and found that customers wanted more food at lower prices. Controlling costs and increasing perceived customer value led to an unavoidable conclusion: the need to automate more processes.

The first step in automating Taco Bell's restaurants was to test several personal computers—hardware that could withstand the successful chain's demanding environment of high temperatures, high humidity and airborne dust.

The solution was a network of HP Vectra personal computers (PCs), software and printers.

Today, with more than 18 months' experience, the relationship is paying significant dividends.

"It's a great system," says Frank Campani, manager of the Barranca Parkway Taco Bell. "Now in 15 minutes I can complete paperwork that used to take two hours."

More than 2,000 HP Vectra PCs in Taco Bell-owned restaurants automate back-office functions such as employee scheduling, inventory control, management reporting, payroll and electronic-mail communication.

Managers, for example, can determine how many tortillas are in stock and how many they need to order. Taco Bell's marketing department can monitor sales by individual restaurant to see what items customers in various parts of the country buy most.

Taco Bell is testing the system with one of its franchises and hopes to make it available in the future.

"The HP equipment and service has exceeded all of our expectations," says Merlin Piltz, Taco Bell's vice president for restaurant data automation. "It has given us a tremendous ability to control costs, provide accurate and timely data for management and save our managers about 15 hours per week in administrative time.

"That means the managers have more time to spend with employees and customers."

It also means that Taco Bell can offer an extensive menu of burritos, tacos, MexiMelts and other south-of-the-border items for less than \$1 each.

Offering more value to customers has meant higher sales, too. In 1990, for example, sales grew by 18 percent to \$2.4 billion, with operating profit rising 37 percent to \$150 million.

So, with help from HP, Taco Bell is giving its customers a taste for the future. And they're eating it up. ■

—Jay Coleman

TACO BELL PHOTO



above

A network of Hewlett-Packard personal computers, software and printers has helped Taco Bell Corporation offer more value to customers and reap higher sales, including a 37 percent rise in operating profit in 1990.





right

HP Vectra PCs give more than 2,000 Taco Bell restaurant managers up-to-date inventory information, which speeds orders and deliveries.



TACO BELL PHOTOS



FRANK DANKER

above

Fresh ingredients, low prices and fast service are the keys to Taco Bell's dramatic growth in the past few years.



# Taco Bell

right

Frank Comani (standing), who manages one of the highest-grossing Taco Bells, says the HP equipment has reduced paperwork from two hours to 15 minutes per day.

below

Irvine, California-based Taco Bell, a subsidiary of PepsiCo, Inc., has more than 3,200 company- and independently owned restaurants in the United States.



FRANK BAKER

TACO BELL



FRANK BAKER

right

Mr. Taco makes a special appearance during an early morning Los Angeles, California, radio promotion, which also featured two Laker Girls from the Los Angeles Lakers basketball team.







TACO BELL PHOTO



FRANK BRUNER

**above**

When customers make a "run for the border," Taco Bell is waiting with an extensive menu of Mexican-food items for less than \$1 each.

**above**

Merlin Piltz, Taco Bell's V.P. for restaurant data automation, looks over the HP equipment-installation schedule with HP sales rep Katie Trippet.

**left**

HP gear has proven it can withstand Taco Bell's demanding environment of high temperatures, high humidity and airborne dust.





PHOTOS BY MARK BOGACZ

Ex-Coloradans Dan and Sally Blount take a break in the ECMO cafeteria. Behind them is the "wall of fame" with 1991 milestones.

# Turning up the heat

in New Hampshire:

The small Exeter Computer Manufacturing Operation is an "execution phenomenon" when it comes to getting the job done.

By Betty Gerard

EXETER, New Hampshire—When Dan and Sally Blount transferred from an HP site in Colorado to the Exeter Computer Manufacturing Operation (ECMO) in New Hampshire in 1990, it felt at first like going to a different company.

The 500-person plant, located in a scenic wooded area in New Hampshire, was still making the transition to becoming part of a large global company. It had been a production facility of Apollo Computer, which Hewlett-Packard acquired in 1989.

The Blounts and two dozen other HP people—from Colorado, California, Idaho, Massachusetts and Germany—had responded to a call in 1990 to join ECMO. The operation's charter had changed, and people with new skills were needed in such areas as logistics, materials and engineering.

The HP old-timers also could help the plant become quickly integrated into HP. They knew its jargon, organization and ways of doing business, and could network with friends around the company.

The deliberate cross-pollination worked well.

"The HP people provided us with insights into the company that it would have taken us years to get otherwise," says Operations Manager John Kenny.

The transition also was made easier by the positive attitude of folks at the Exeter operation. "Fairly early on, ECMO decided, 'We're now HP,' and wanted to show the rest of the company what it could do," Kenny says.

Six people also came from Scotland, where a former Apollo plant in Livingston was closed after the acquisition, bringing their useful knowledge of the European scene.



In a charter switch, ECMO had taken over workstation final assembly, test, integration and distribution for the Americas and the Far East. In turn, its former printed-circuit-board production moved to the Colorado Computer Manufacturing Operation (CCMO), another of the seven entities which make up Computer Manufacturing (CM). The Blounts moved from Fort Collins to Exeter along with the new charter. Dan manages product engineering for ECMO and Sally is in planning.

ECMO targeted quality as an arena in which to show its stuff. In June 1990, the Quality Council—the operations manager and staff—set tough new goals of attaining ISO 9002 certification (an internationally accepted quality standard) and making a high score on HP's own Quality Maturity System (QMS) rating during the coming year.

The new ECMO recruits found an energetic environment that carried over from the old Apollo days, when urgency was part of survival. As part of a small company with a less elaborate planning

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*"I've found fantastic teamwork here... a real spark and excitement."*

and decision-making process, Exeter folks were self-reliant and made decisions quickly.

Characteristically, ECMO set itself a demanding goal in going after ISO 9002 certification. (The ISO 9000 standard has four categories. ISO 9002 is for facilities with manufacturing and distribution.) The one-year timetable was possible only because ECMO already had effective procedures, says Jim Kelly,



**Geraldine and John Inglis, who moved to Exeter, New Hampshire, from Scotland, stroll near a restored 1770s textile mill.**

site quality and process-engineering manager. "If you don't have the basics in place, you can't do it in a year."

Just about everyone on site was already involved in continuous process improvement. Workmanship problems go to "cell" teams of people on each production line. Other quality teams and processes already had been established. TLA, for example, is a much-admired distribution and logistics-management system that provides instantaneous, on-line reporting.

To build on this foundation, the Quality Council created teams to further improve four key processes. Marcy Alstott heads new product introduction; Dan Blount, quality improvement; Tom Welch, front-end (forecast to procurement); Jerry Joyce, back-end (order management, production, distribution).

With the focus on quality improvement already in place, there was a smooth transition to HP's Total Quality Control (TQC) practices. Both Dan Blount and Jerry Joyce, also from

CCMO, were surprised how quickly such techniques as storyboards for problem-solving spread quickly throughout the plant.

ECMO came through its first QMS review with flying colors, bettering the HP-wide average in all but one category.

The passion with which ECMO takes on a challenge has impressed the newcomers.

Sally Blount has found the Exeter group "an execution phenomenon." She says folks aren't fazed if they have to crank out three months' production in the last two weeks of the quarter—a sharp upturn known locally as "the hockey stick." They proved it in October 1991 when long-delayed chips became available and a large backlog of workstation orders was filled smoothly.

"It makes us proud to be part of this organization," Sally says.

Ex-Coloradan Marianne Stevens, an order-processing manager, echoes the sentiment. "I've found fantastic teamwork here," she says, "along with a real spark and excitement." The local attitude is, "We're going to be the best at what we do."

Adds Andreas Schwedhelm, an engineering manager who transferred from

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*ECMO targeted quality as an arena in which to show its stuff.*

the Böblingen (Germany) Manufacturing Operation in 1990, "I stopped saying, 'This is good and this is bad,' comparing the two operations. They're great here at turning up the heat and getting things done."

Marcy Alstott, a transfer from the Networked Computer Manufacturing



Operation in California, is fully aware that new-product introductions are now far more complex for ECMO as it deals with multiple manufacturing sites, multiple labs and marketing located all over the world. Communicating well is a must.

Sometimes people are saying the same things in different ways, she has found. "It's a matter of style: West Coast niceness vs. the more direct, get-to-the-point East Coast manner."

Jim Kelly brought in John Inglis—who had led Apollo's Livingston, Scotland, plant to a successful first-pass ISO 9002 certification—to serve as program manager for ECMO's certification thrust. By 1993, ISO 9000 registration will be required to sell into the lucrative European market.

## *"You've really met the challenge of coming into the company..."*

Leaving Scotland meant that John's wife, Geraldine, an operating-room nurse for 12 years, couldn't work as a nurse in New Hampshire until passing state board exams for certification. In the meantime, she volunteered in OR at the local hospital two days a week.

John knew firsthand what British Standards Institute (BSI) auditors would be looking for. BSI is the leading certification institution for ISO 9000, with 200 auditors who travel worldwide.

In preparation, John first made sure ECMO had its own updated quality manual, supported by written procedures in all areas.

For eight months he met with employees in small groups to point out



During ECMO's ISO 9002 assessment, Peter Corbett of the BSI team talked with many employees, including test operator Pat Reardon. Debi Murphy (right) was an observer.

what the BSI audit team might ask during interviews. The audit team would split up, with each member tracking work flow through the plant. People in each area would be asked to prove they knew and understood the correct procedures for doing their job.

In production, for instance, the opening questions might be, "How do you know what to build? How are configuration sheets determined? How is factory training handled and do records exist? What happens when tests indicate a product failure?"

Backing up John's efforts were Debi Murphy, Jim Maranto and Paul Renfrew, who took lead-assessor training. They did a dry-run audit before the BSI team arrived to find any gaps, accompanied auditors during the actual assessment, and will train other ECMO people in the self-audit technique. (Receiving ISO 9000 certification brings with it repeated audits every six months.)

The sitewide commitment paid off when BSI auditors granted ECMO certi-

fication after a three-day visit in which they criss-crossed all areas of the plant talking with employees. Champion interview subject was Ken Schaaff, warehouse and receiving dock supervisor, who was visited five times on audit trails.

ECMO is now the only HP entity in the Americas and the Far East with the right to fly the coveted ISO 9000 Registered Firm flag.

At a November 6, 1991, award ceremony, all employees crowded into the cafeteria to receive congratulations from Executive Vice President Lew Platt. ECMO is "definitely one of the high spots in HP," he told them.

"You've really met the challenge of coming into the company... and made an incredible contribution." ■





DOUGLAS PECK

# Culturally speaking

**The ways of the world can be intimidating and mysterious, but understanding them is one of the most satisfying aspects of working for a multinational company.**

*By Jean Burke Hoppe*

HP employees have been traveling internationally almost since the company opened its doors for business. Managers at HP Intercontinental Operations, many of whom spend as much as 50 percent of their time on the road, jokingly call it "Management by Flying Around."

The world may well be a global village, linked by telecommunications and electronics, but cultures and values run deep. An insult, even unintentional, can cost more than bruised feelings. Being prepared will help you avoid that.

In Thailand, for example, it's offensive to pat people, even children, on the head. In the Arab world, exposing the soles of your feet is insulting, as is asking after someone's family. In the United States, you'll put someone off if you stand too close to them while talking.

In a company as diverse as HP, something as simple as a name can land you in deep water before any business

exchange has a chance to sink or swim. In China and other parts of Asia, for example, the surname is given first, but it doesn't hurt to ask. Many HP employees in China have "Westernized" their names for business purposes.

It's proper to call a Thai by his given name (with a "Mr.") and a Japanese employee by his or her surname (attaching the polite suffix *-san* within the company is an appreciated touch). In Latin America, many people use a double surname with maternal and paternal family names, and it is the father's name which comes first and is appropriate to use—except in Brazil, where the mother's name comes first.

Employees facing their first international business trip would be well advised to do their homework about the country in a sincere effort to be a good



guest, say HP's seasoned travelers. It helps to learn a few key phrases in the local language, and to know some of the politics and history of the country, how to dress, whether to be on time or a little bit late, and whether to bow upon greeting or shake hands.

Sensitivity, a positive attitude and an open mind are very much part of the HP formula of success on the road.

Intercon's Director of Personnel Polly Johnson, who spent 40 percent of 1991 on the road, says that while Intercon doesn't offer formal training to prepare people for international travel, new employees who will travel a lot receive informal coaching from managers and from Intercon's many FSEs (foreign-service employees).

"The most useful thing for me, apart from my own reading and research," she says, "has been to talk with people who are from the country or who have traveled there extensively. My best advice for people embarking on their first international trip would be: 'Treat it as a wonderful adventure. Go with an open mind. Be flexible. Remember you're a guest in the country and be sensitive to the values and customs there.'"



Polly thinks international business travel within the HP world is easier than independent travel because the network

is already in place. "HP offices around the world are very accustomed to dealing with international visitors and are always so gracious and understanding. I often worry if we're quite as gracious hosting visitors to the U.S."

John Toppel, Computer Systems sales manager for Africa and the Mid-East in Geneva, has conducted HP business on every continent and has lived and



worked for HP in the United States, Hong Kong, Australia, Mexico and Switzerland.

It's with humility that he remembers walking into his office in Guadalajara, Mexico, one morning and asking engineer Roberto Martinez, who was putting on a sweater, "*¿Eres flojo?*" ("Are you ugly?") when what he was really trying to get at was "*¿Tienes frio?*" ("Are you cold?"). All was forgiven after the initial embarrassment because the important thing was that John was making an earnest effort to learn and use the local language. It was with much hilarity, John says, that the employees roasted him at his last coffee-pot talk as general manager with speeches mimicking his *gringo* Spanish accent.

"Americans especially need to appreciate more what the rest of the world has to offer," John says. "We tend to be insular, so unaware of the rest of the

world. I think business travelers have to be really sensitive to the issues people have outside of the United States. You find that people all over the world know a lot more about the U.S. than we know about their countries. One of the most important things is to go with an open mind as to what's out there."

Much has been said and written about the profound differences between doing business in Japan and the U.S. and the efforts both sides have made to understand the other.

Kiyomi Hutchings, a consultant who works as a U.S.-Japan liaison, has helped prepare a number of people at HP Labs and divisions for successful business dealings between the two countries. She gives the following advice for business success in Japan:

- Don't insist on yes-no, black and white answers. Japanese people do not always say what they're thinking, especially if it's negative. They don't want to disturb the harmony so they'll try to say negative things indirectly. They will smile, change the subject, go silent or say they'll get back to you. This can be very frustrating to people who expect more direct and immediate answers.



PHOTOS BY DOUGLAS PECK



- Put an effort into the personal relationship because real trust often comes from that. The Japanese businessperson will be trying to envision working with you in the long term. They'll want you to be wise, sophisticated, nice, open-minded, flexible, patient, honest, hard-working and persistent. If you're invited out on the town after working hours for dinner or to a karaoke bar, go.
- Be extremely well prepared for meetings and presentations.
- Maintain contact after your visit by sending an occasional card.

Kiyomi thinks that after nearly 30 years of being part of HP, YHP is more "Americanized" than other Japanese companies. "The HP way is very much a part of YHP."



Similarly, Bernard de Valence, Intercon's director of Finance and Administration, finds HP is much the same company around the world. "The cultures, climates and business environments change, but in terms of day-to-day business, I'm not sure that things are all that different."

Bernard is French and started with HP in Grenoble in 1978. Before accepting his current assignment with Intercon in 1989, he held management



Polly Johnson, Intercon personnel director, and Lee Ting, G.M. of the Northeast Asia Region, compare notes on multicultural communications during a hallway chat in Hong Kong.

positions in the Bay Area and Boston (where he says he picked up his accent), as well as France. He's on the road about 40 percent of the time.

"The key word is respect. If you get there and respect people who work there and the culture, you will succeed and grow. If you impose your views, if you're pushy, you won't get very far. The differences that do exist can be very subtle. You will make mistakes but you can be humble about it and stay accessible."

"What works best for me," Bernard says, "is if I roll up my sleeves and work alongside people in whatever country I'm visiting. Even after all my travels, I'm still learning. I realize more every day the real value of the HP way philosophy of creating the right environment with clear expectations, and then watching people do their best."

"You may learn to give challenges differently to an Australian or a Japanese team, but you always get good results.

If my travels have changed me, it's that I've become more respectful of HP employees everywhere."

Bernard's advice to the neophyte traveler: "Take time. Don't rush. Don't panic. Take care of yourself—avoid alcohol on the plane and make time to exercise. Travel is stressful so take measures to reduce stress. Wander around beyond your immediate trip objective in order to understand how the organization works. Ask people questions about their business. They have a lot to teach you." ■

*(Jean Burke Hoppe is a San Francisco, California-based freelance writer and a former Measure editor.—Editor)*





DOUGLAS PECK

## Worldly ways

Here's a primer on the ways of the world in some of the countries in which HP operates. These are generalizations, of course, and intended only as a small aid to understanding the wonderful diversity of a part of HP's world.

### Brazil

Brazil is very different and proudly independent from the rest of South America. Portuguese, not Spanish, is the language. Brazil is a very free and relaxed country—people are warm and friendly, and not very formal. Conduct business in person when possible and maintain contact afterwards. Be expressive in your speech. Don't rush your business or get directly down to business. Make presentations with flair: data with salsa.

### People's Republic of China

The family name is mentioned first, so Lin Wu is Mr. Lin. Introductions are formal. Go to business meetings thoroughly prepared and bring a team of experts if necessary; the Chinese expect you to know every detail about your own (and competitors') products, markets and organizations. Don't try to rush things; anticipate the bureaucratic machinery. Tipping is officially discouraged. If invited to a banquet, the host may seat and serve you; do not serve yourself. Eat sparingly because there are many courses.

### India

Religion has a strong influence on social and business relationships in India. First names are used only among very close friends. India is a

paternalistic society and decisions are made at the top. Several visits may be necessary to accomplish your goals. The correct permits and paperwork for business transactions are essential. Don't neglect formalities and social rituals. Don't behave impulsively—self-control is valued. Devout Hindus do not eat beef; Moslems do not eat pork, ham or bacon, nor do they drink alcohol. Many people do not eat meat, fish or eggs.

### Italy

You can get right down to business after a few minutes of general conversation. Be well prepared for your presentation—you must have a solid knowledge of your products, local applications and track record elsewhere. Except in Milan, business entertaining is not popular. Don't talk business at a social event; stick to family, sports, international events. Don't joke at a purely business meeting.

### Korea

Korean business is characterized by youthful entrepreneurial spirit, Confucian principles and Japanese management practices. Great respect is paid to age and position. Courtesy is important; modesty is the rule. Always preserve face and harmony. The family name comes first so Lee Song-Hyon is Mr. Lee. Travel with plenty of business cards. Acknowledging the country's tremendous growth the past two decades will be appreciated. Never criticize, openly disagree or behave abruptly with Koreans. Entertainment plays a major role in business.

### Mexico

Personal relationships are essential to business. Always be warm and personable in approach and take time to establish rapport. A knowledge of Mexican culture will impress. Always maintain dignity, courtesy and diplomacy. Don't rush; don't push. Don't injure an individual's pride or dignity. Even an honest "no" to a request may be taken as rude. Never arrive early when invited to someone's home.

### Switzerland

Swiss business practices are similar to those in the United States, although people generally are more formal. Business proceeds in an orderly, planned fashion. People have tight schedules, so always be punctual and do not waste time chatting. You are expected to know your industry well. Formalities matter: try to be conservatively dressed, well-mannered and reserved. Don't approach business casually. Avoid surprises and spontaneity. Errors will reflect badly on your attention to detail.

*(This information is excerpted with permission from "Going International, How to Make Friends and Deal Effectively in the Global Marketplace" by Lennie Copeland and Lewis Griggs. Copeland Griggs Productions also produced the four-part video series, "Going International," which is part of the preparation FSEs receive before heading out on assignment.)*



## HP's president and CEO summarizes the company's Hoshin—breakthrough—objectives for 1992.

I'd like to use this issue of *Measure* to communicate the highlights of the 1992 CEO Hoshin so that you know what the company's doing to improve its performance, strengthen our ability to compete and position ourselves to succeed in the future. Over the course of the year, you'll be kept posted on progress in this magazine and other internal communications. The Hoshin addresses issues of real importance to HP, and so this discussion also represents the "strategic issues" I've announced in the past.

In fiscal year '91 we moved ahead on the two key goals we'd set for ourselves in the CEO Hoshin—improved operating performance and process improvement. We have much to be proud of. But the situation analysis in this year's Hoshin states what we all know well: The competitive environment is getting tougher all the time, and we urgently need to follow through on the improvements we began last year.

The FY92 Hoshin therefore calls for a continuation of what we started in '91. Let me describe our goals and why they're important.

### 1 Profit improvement

HP's profit margins are the best single measure of the value of our products and services as measured by customers. And, as the article on HP stock in this issue of *Measure* reminds us, continuous earnings growth is what makes a stock increase in value—a key measure



HP President and CEO John Young (left) meets with Akio Morita, co-founder and chairman of the Sony Corporation, in the HP pavilion during Telecom '91 (see story on page 12).

of what we provide for our shareholders.

In 1988, HP's operating-profit margin was 11.0 percent. It's been below that in recent years—8.7 percent in '90 and 8.3 in '91, or 9.2 percent without the special fourth-quarter charges we reported.

Our goal for fiscal '92 is to get our operating-profit margin back to its historical levels, and each business unit and corporate function has committed to a plan to help make it happen. We're not relying on double-digit revenue growth to achieve our goal, but we are relying on very, very slow growth in operating expenses.

### 2 Process improvement

As the competitive environment gets ever more challenging, we have to continually renew our basic business activities. We have identified five companywide processes as the most important targets for improvement. Each process has been assigned to a Management Council committee that is chartered with identifying an improve-

ment plan, goals and metrics by mid-'92.

And while committees and corporate functions have been assigned responsibility for process improvements, most of the ideas, energy and commitment come from those people in the operating entities who are faced directly with these problems. This is all very much work-in-process, so let me give you a preview of what's underway.

### ■ Product-generation process

We need to strengthen our ability to bring to market the right product at the right time—that is, within the time-frame that represents the window of opportunity in the market. Doing this well is key to achieving the volume sales that allow us to reap the financial rewards from our sizable R&D investments. We're concentrating our attention on hardware and software development, with the Operations Committee guiding the activities of Bill Kay's Product Processes organization.



## ■ People leadership and practices

We want HP to be the work place of choice for both current and prospective employees. HP people should have a clear understanding of what their business entity is trying to accomplish, the flexibility and authority to pursue those goals, and the sense that their contributions are recognized and valued. We also are reaffirming the fundamental truth that managers are responsible for managing people.

Progress is being monitored by the improvement in scores on the HP Employee Survey ("mini" Open Line) which now is required at each entity. The Personnel Committee has the lead on this issue, working with Pete Peterson and his people. Here the focus is on the day-to-day managers to understand and improve in this key area.

## ■ Total-quality management

We remain convinced that using TQC—total quality control—as the way we manage our basic business processes will help us maximize our performance. There's been commendable progress in TQC—especially in the manufacturing and support areas—but we've yet to fully institutionalize this practice.

Some businesses have fallen behind their hardware-quality goals. We're monitoring our progress by looking for improvement in the scores on Quality Maturity System (QMS) reviews that HP entities are undergoing. However, we don't want to focus on the score so much as the self-evaluation and learning that the reviews foster. The Planning and Quality Committee is leading this issue.

## ■ Information-systems model and process

HP's basic business purpose is to provide customers with the information products that enable them to improve the effectiveness of their people and organizations. Our interest in enhancing our information systems, then, has two roots—improving our own competitive position and providing a credible example of the kinds of benefits customers can hope to reap from their information investments.

We have three improvement goals: 1) create a closer coupling between our information systems and business strategies; 2) make the systems more cost-effective; and 3) dramatically reduce the amount of time required to implement a new application. The Information Systems committee of the Management Council is overseeing this activity, and Lloyd Taylor and his people have a good plan that they're currently implementing.

## ■ Order fulfillment and delivery

Our goal here is to improve our ability to deliver to customers the exact products and configurations they ordered, at the exact time they were told to expect them—and do so cost-effectively. If we can do it better than anyone else, we have a source of competitive differentiation. If we can do it more cost-effectively, we have the opportunity to save HP hundreds of millions of dollars.

Order fulfillment and delivery is a complicated process that spans both field and factory organizations and includes multiple divisions for systems orders. The Sales and Marketing Committee has been asked to recommend how we can maximize our effectiveness.

## ■ Taking the next step

Let me close with some personal observations. One of the biggest challenges I face as CEO is finding the delicate balance between praise and prodding—between recognizing the very real progress we've made and dramatizing the urgency of doing even more. The CEO Hoshin falls in that latter category—a reminder of how far we have to go.

Let me also say that I'm extremely proud of our progress. The new organization is working well. People have taken to heart the challenge of improving our performance. And when I survey the industry, I see a lot of wreckage out there—companies that have become stuck in "the same old way" and have fallen off the pace.

What gives me the greatest personal pride is the fact that we at HP don't bask in the pleasure of self-congratulation. Instead, we constantly commit to taking that next step. It's that determination that separates winners from losers.

When we're in the middle of wrestling with a challenge, it's natural to keep our eyes focused on the end goal. And since we can't look in two directions at once, we often lose sight of how far we've already come. I want us all to remember how much we've accomplished as we move ahead in the coming months. Let's balance a relentless pursuit of excellence with the confidence that, in so many ways, we're already a winner.

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Lawrence Lam



Kent Scialabba



Dean Gregersen

PHOTOS BY FERNANDO PADILLA

## Model employees

Who would pay \$180 (U.S.) for a 1992 calendar?

Gale DuLude, software applications specialist at the Finance and Remarketing Division (FRD), and 15 of her co-workers did—and they say it's worth every penny. Even better, because the calendar was auctioned off at FRD's United Way auction, HP matched the donation.

This particular calendar derives its value from its contents: photos of FRD's "Men of IT" (information technology) in distinctive settings, ranging from Chris Couture (wearing San Francisco 49er shorts while barbecuing in his back yard) to Lawrence Lam (leaning insolently on his Porsche in a grassy field).

"I wouldn't exactly call it cheesecake photography,"

laughs Fernando Padilla, who both shot the photos and also appears as Mr. February. He asked each month's model to choose his own location and provide his own props. "The idea was to let each man's personality come through."

A touch of their philosophy, too. Kent Scialabba, looking natural in cowboy gear while relaxing against a ranch-style fence, offers this homespun homily: "Life's a little harder when they catch you leaning backwards in your three-point stance."

Fernando estimates the 15 men of IT spent well over \$300 rushing to put the calendar together in time for the auction. It's a one-of-a-kind project, done just for the auction.

"That's why the 16 women of IT decided to support our guys by bidding for the calendar," Gale says. "We did exceed our monetary limit but...they're worth it!"

—Joanne Engelhardt

## Seeing spots

SINGAPORE—If it worked for Greyhound, why not HP?

The folks in HP's Singapore sales group liked the HP LaserJet printer advertising campaign which featured Dalmatian dogs so much that they've "rolled out" a fleet of 10 public buses painted to resemble the polka-dot pooches.

The buses, which ply some of the busiest routes in the heart of Singapore, including the financial and

business districts, have been running since July.

Yellow signs on the side of the buses carry the bold slogan, "HP LaserJet printers knock the spots off other printers."

*Business Times*, Singapore's daily business newspaper, printed a photo of the bus, and HP gained further recognition when it loaned the buses for National Day festivities.



Dalmatian buses in Singapore are a howling success.



## Quoteworthy

“We are well-positioned for the most exciting parts of the electronics business for the '90s.” Within the huge \$700 billion electronics market, “there are lots of things that are going to be very exciting, with very high growth rates.

“You’re going to see lots of products that are tailored to the way people work, instead of a bunch of general-purpose boxes and a lot of wires. It’s going to be an exciting transformation, and we are in an excellent position to lead in that change.”

*John Young, HP president & CEO, keynote address, Autofact trade show, November 1991*

“...we’re very close to the Information Age. Information technology is rapidly becoming as commonplace as the other pervasive technologies of our society—the automobile, electricity or the telephone, to name a few.”

*Franz Nawratil, V.P. & worldwide sales and marketing manager, Computer Systems Organization, Conference Board, October 1991*

“We’re doing the right things, we’re working on the right problems and we’re getting the right results. That’s why HP kind of sticks out from the pack this year (1991) as having our act together.

“We’re in a great position—with the terrific products we have—to continue to be a leader in what’s going to be a very, very competitive business. That should be good news to every HP employee.”

*John Young, HP president & CEO, HP VideoMagazine December 1991*

“Pristine white shipping cartons may attract more attention to our products than brown boxes, but we’re willing to give that up for the benefits of environmentally safer packaging. We hope other companies consider taking this step.”

*Dean Morton, HP chief operating officer, HP news release November 1991*

## BOTTOM LINE

For the fourth quarter of fiscal year 1991, ended October 31, Hewlett-Packard reported a 7 percent increase in net revenue and a 7 percent growth in orders. Net earnings for the quarter declined 38 percent, reflecting special charges of approximately 40 cents per share. (Included in the latter were costs of voluntary severance programs under which 3,300 people decided to leave the company and/or retire.) Excluding the adjustment for these charges, net earnings grew approximately 12 percent.

Net revenue for the fourth quarter totaled \$3.8 billion (compared with \$3.6 billion in the year-ago quarter), while net earnings totaled \$125 million or 50 cents per share on approximately 252 million shares of common stock outstanding (down from the FY90 fourth quarter's \$202 million or 83 cents per share on some 244 million shares).

Orders for the fourth quarter totaled \$3.7 billion (compared with \$3.5 billion in the year-ago quarter).

Looking at results for all of FY91: HP's net revenue rose 10 percent to \$14.5 billion; orders were up 9 per-

cent to \$14.7 billion; and net earnings increased 2 percent to \$755 million.

## NAME CHANGES

At Yokogawa-Hewlett-Packard, the former YHP Hachioji Division has been renamed the Hachioji Semiconductor Test Division, and the YHP Instrument Operation has been elevated to division status and renamed the Kobe Instrument Division.

The Advanced Manufacturing Systems Operation has been elevated to division status and renamed the Integrated Systems Division. **John Weidert** is G.M.

The Disk Mechanisms Division is now the Disk Memory Division.

The new organization created under **Bill Kay** as director, combining Corporate Engineering and elements of the former Corporate Manufacturing, among other activities, has been named HP Product Processes.

The name of the HP 3000 operating system has been changed from MPE/XL to **MPE/iX**, reflecting the fact that the HP 3000 is now compatible with POSIX, the portable operating-system interface.





At the reception for a new book with papers of the late Egon Loebner are his widow Sonya (left) and Ruth Gilombardo of the HPL Research Library.

## Honoring Egon

Egon Loebner of HP Labs—scientist, engineer, inventor—was profiled in the March-April 1989 issue of *Measure*. He was even then combatting the rare form of epithelial cancer which took his life that December.

The deep impression that Egon made on the company and his colleagues is reflected in a new book, *The Selected Papers of Egon Loebner*, published by HP Labs (HPL) as part of its 25th-anniversary-year observance.

Egon's widow, Sonya, and family members joined more than 200 of his co-workers, co-founder Bill Hewlett and Joel Birnbaum, vice president for R&D, on December 18 in Palo Alto for a preview of the 280-page volume.

As Joel pointed out, Egon was a synonym for the curi-

osity and inventiveness which characterize HP Labs. Among the more than 80 far-ranging scientific papers Egon wrote, 23 were chosen for the book by HPL retiree Zvonko Fazarinc to reflect the breadth of Egon's interests and his contributions during 28 years with HP.

Playing key roles in the book project were HPL Research Library staff members Lorene Hall and Ruth Gilombardo, and HPL's Rich Marconi. The Compage Company produced the book; a limited number of copies for HP employees are available free through the library. (Send requests via HPDesk to RESEARCH LIBRARY or by UNIX Mail to RESEARCH \_ LIBRARY, including name and internal mailing address.)

## T&M CHANGES

Within the Test and Measurement Organization, the Measurement Systems Operation has been elevated to division status and renamed the Measurement Software Division under **George Sparks** as G.M.

**Marty Neil** to G.M., Santa Clara Division, **Jim Olson** to G.M., Stanford Park Division, **Bill Tomeo** to G.M., Colorado Telecom Division; **Gil Reeser** to G.M., Queensferry Microwave Division, newly elevated from an operation.

## NEW GROUP IN CPO

A new Personal Information Products Group (PPG) headed by V.P. **Bob Frankenberg** has been formed within the Computer Products Organization. PPG includes all divisions that were formerly part of the Personal Systems Group and the Personal Computer Group.

Assuming worldwide responsibility for PPG's two new product businesses are **Jacques Clay** (connected desktop PCs) and **Duane Zitzner** (mobile/desktop companion products). Clay also becomes general manager of the Grenoble PC Division.

## AVANTEK ACQUIRED

Hewlett-Packard completed an \$82.8 million acquisition of AvanteK Inc. of Santa Clara, California, in November 1991. It has become part of the Components Group.

**Jim Horner** has been named G.M. of a division which merges the former Microwave Semiconductor Division and AvanteK's commercial products. New name: Communications Components Division.

**Paul Sedlewicz** is president of AvanteK Inc., a wholly owned subsidiary of HP focused on components for the defense industry.

## NEW HATS



In the Networked Systems Group, **Randy Meals** has joined HP as G.M., Information Networks Division. **Carol Mills** to operations manager of the newly formed Cooperative Computing Systems Operation which will integrate, test and market client-server systems to selected large accounts worldwide.

**Khaw Kheng Joo** to G.M., Asia Pacific Personal Computer Division. **Jackye Churchill** to G.M., Complementary Products Sunnyvale. **Bob Perich** to G.M., Fort Collins, Colorado, site.



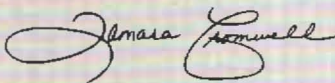
## PARTING SHOT

### Hand in hand

ROSEVILLE, California—  
This is a picture of the hand  
of my husband, Dan Crom-  
well (General Systems  
Laboratories of the Systems  
Technology Division), and  
our newly adopted son,  
Andrew Stephen.

We were pleased to be able  
to take advantage of HP's  
adoption-assistance benefit.

Sincerely,



Tamara Cromwell



### Photo mania

In the September–October  
and November–December  
issues of *Measure* we invited  
HP employees to send per-  
sonal photographs they  
were most proud of for  
possible use on this page.

Well, in the months since,  
we've received more than 75  
possibilities as the "Parting

Shot"—enough to last us  
more than a dozen years.

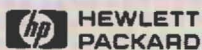
Because of the excep-  
tional response, we've  
decided to devote several  
pages in the March–April  
*Measure* to employee  
photos.

You can still submit  
photos—slides or prints—

for future issues. Please  
include your name, job title,  
entity name and informa-  
tion about the photo.

Send the photo to Jay  
Coleman, *Measure* editor,  
by internal (mailstop 20BR,  
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external (see address  
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