

For the people of Hewlett-Packard

May-June 1990

MEASURE

Europe 1992:
a time for
flag-waving

THE INSIDE STORIES



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On the cover: Flags flying outside the headquarters building of the European Parliament in Strasbourg, France, symbolize the unity "1992" means for Europe. Turn to page 13 to see what 1992 means to HP.

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MEASURE

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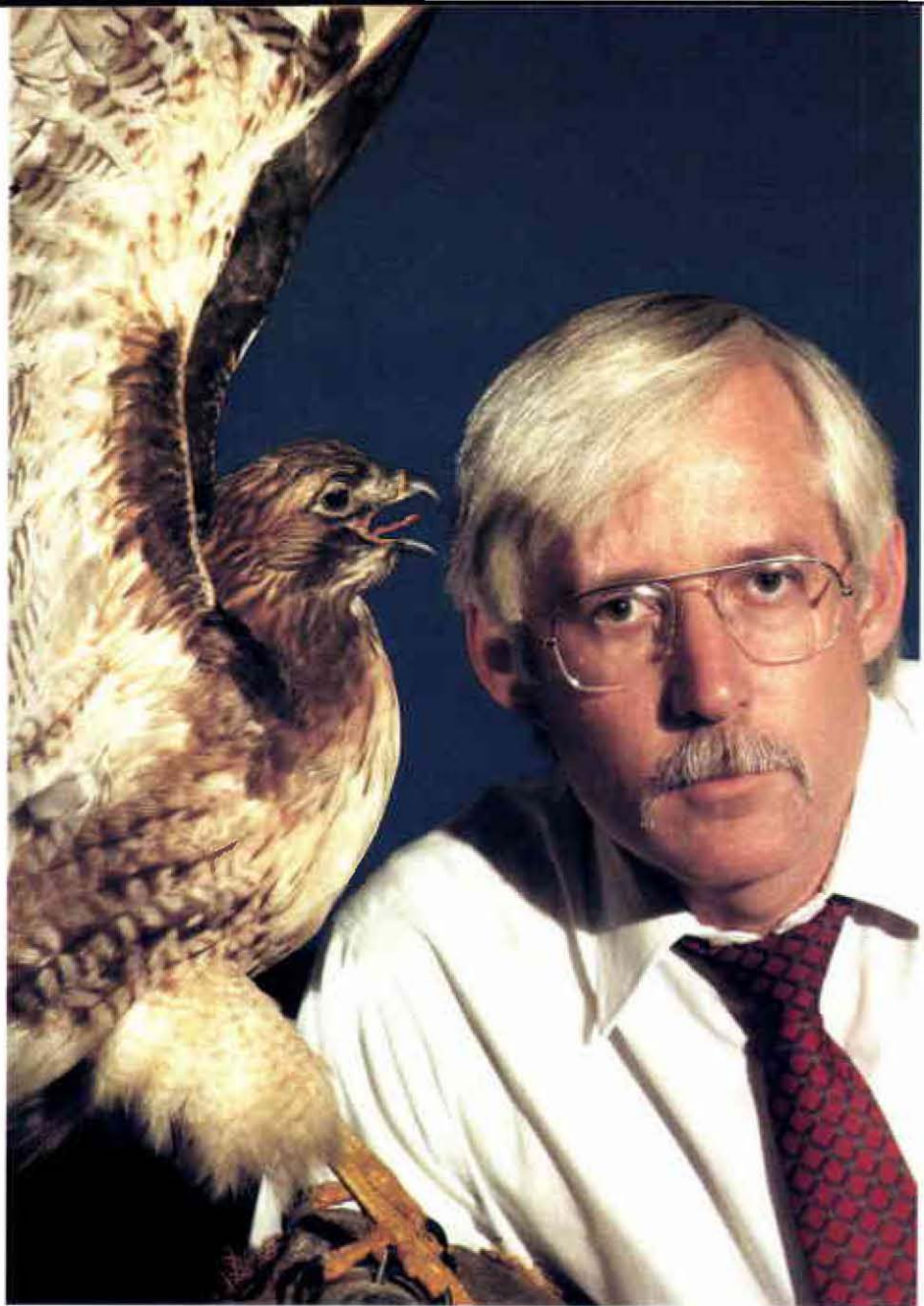
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Waging war on wildlife crimes

By Jay Coleman



TIMOTHY BULLARD

As director of the U.S. Fish and Wildlife Service's new animal forensics lab, Ken Goddard keeps an eagle eye out for poachers involved in illegal products.

It's a grisly scene as Federal agents descend on an Anchorage, Alaska, cabin and find the results of the slaughter: hundreds of pounds of raw walrus ivory.

The raid—one of 15 being conducted throughout Alaska—ends in the same grisly scene over and over as agents seize 10,000 pounds of uncarved ivory.

A 1972 law allows local Eskimos to hunt walrus for their subsistence and sell the carved ivory-tusk handicrafts they make from the 1,500-pound beasts.

But this carnage is no shopping trip for native artisans. No, the scene has the stench of the multibillion dollar global



Ken examines elephant and walrus tusks with Ed Espinoza, a forensic chemist who discovered secrets of animal identification.

market for illegal wildlife products.

Investigators theorize that the walruses may have been sunning themselves on ice floes in the middle of the sea when they were attacked. Poachers, lured by big money from ivory buyers, may have slaughtered the walruses, cut off their heads, dumped the bodies in the sea and sold the ivory to nonEskimos, which is illegal.

Proving just where the 10,000 pounds of ivory came from is another matter.

It takes a year of old-fashioned undercover investigative work by a U.S. Fish and Wildlife Service agent, and vital testimony by a forensic expert to nail the criminals.

The poachers claim the ivory was hunted before the 1972 law took effect. The Fish and Wildlife agent counters their claim. Weeks of testimony

continue until the trial hinges on the forensic scientist's testimony. He testifies that traces of blood in the confiscated tusks clearly show that the tusks were taken after 1972.

The jury convicts 90 people.

The importance of the verdict is secondary to the larger victory it leads to: the establishment of the National Fish & Wildlife Forensics Laboratory in Ashland, Oregon. It's the only facility of its kind in the world—the first wildlife crime lab.

The June 1989 dedication of the \$4.5 million lab marked the fulfillment of a 10-year dream for lab director Ken Goddard. Ken is a Renaissance man—a 12-year criminalist for the Huntington Beach, California, Police Department, one-time head of the Fish and Wildlife Service's forensic branch and the author of a best-selling crime novel (see story on page 7).

"There are thousands of species of animals on Earth," Ken says, "and about 350 forensics labs in the U.S. set up to investigate crimes against one species of animal—*Homo sapiens* (man). We handle all of the other species."

The lab's primary job is to develop identification techniques which will allow forensic specialists to testify in court. The lab supports federal, state and international wildlife law-enforcement efforts in the same way a police crime lab does: match the suspect, victim and crime scene together by examining physical evidence.

In the vast majority of cases, all that remains of the animal is a bit of hair, fur, hide, blood, tissue, tusk, teeth, claw, horn, feather or some item made

from some combination of the above.

"Parts and products," lab workers say casually.

The identifications would be impossible without a million dollars worth of equipment, including several Hewlett-Packard analytical instruments.

"When I designed the lab," Ken says, "I called crime labs across the country

"Wildlife crime is an environmental issue and this is an environmental state."

and asked their recommendations for instruments such as gas chromatographs and mass spectrometers (GC/MS). More than 80 percent of the people I talked to said 'Buy HP equipment.'

"I had used HP equipment a lot in the past and have a lot of faith in it. It's extremely reliable. That's critical because our testimony has to have the highest credibility when we walk into a courtroom."

Joe Weitzel, analytical sales rep from HP's Baltimore, Maryland, sales office, remembers the day in 1987 when he met Ken in Ken's nondescript Washington, D.C., office.

Ken showed Joe a bizarre collection of objects the Fish and Wildlife Ser-



TIMOTHY BULLARD

Dr. Kent Oakes, chief criminalist at the wildlife forensics lab in Ashland, Oregon, uses a battery of HP analytical equipment to help the cause of protecting endangered species.

vice had confiscated: elephant-leg ash trays; foot-long frog skins which had been stretched into purses; aphrodisiacs made from ground tiger teeth.

Ken and Joe met several times during the next few months to determine which products the new lab needed before deciding on two HP 5890B gas chromatographs and an HP gas chromatograph/liquid chromatography/mass spectrometer (GC/LC/MS) system.

"It was an interesting sale," Joe explains, "because the new lab wasn't built yet and Ken didn't have a staff."

How the lab ended up in Ashland is a story in itself. The U.S. Fish and Wildlife Service was about to award the facility to another site when Southern Oregon State College offered to lease a four-acre parcel of land on campus for \$1 a year for 50 years. State lottery funds paid for the \$79,000 in road-

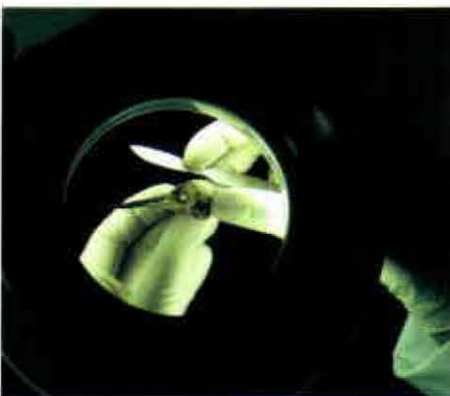
paving and utility-line costs.

"Crime labs usually are in the middle of urban areas," Ken says, "but wildlife crime is an environmental issue and this is an environmental state."

Prosecuting the perpetrators of wildlife crimes in the past meant catching them killing an animal, or recovering a large enough part of the carcass to prove the animal's species. Today's analytical instruments can do it with a speck of evidence.

HP's GC/MS system is so sophisticated that it can detect a chemical concentration as low as one part per billion—about the same as detecting a granule of sugar in a bucket of sand.

Using the system—made famous for Olympic drug testing—researchers can compare more than 110,000 compounds in less than a minute.



TIMOTHY BULLARD

A lab scientist inspects a hairy woodpecker to determine the cause of its death.

Dr. Ed Espinoza, a Ph.D. forensic chemist, left teaching jobs at the University of California at Berkeley and Sacramento State University to join the U.S. Fish and Wildlife Service lab. Some of the 50-plus investigations the forensics team has conducted in the lab's first nine months involved:

- Examining deer wounds to see if the animals were killed illegally.

"The hunting season for bow-and-arrow hunters opens a month early and continues a month later than the rifle season," Ed explains. "Some hunters carry a .22 caliber pistol in their pocket, shoot the deer, then drive an arrow through the wound to mask the cause of the wound. But our equipment can prove if there was a bullet wound first."

- Analyzing suntan lotion to see if it contains sea-turtle oil.

"Six of the seven species of sea turtles alive today are on the endangered list," Ed says. "The GC/MS can tell us if the lotions were made with illegally obtained turtle oils. The GC/MS equipment already has been essential to many of our cases."

- Studying hundreds of samples of ivory to determine if various products were made from prehistoric mammoths (which is legal) or from modern Asian and African elephants (which is illegal).

After analyzing ivory samples for countless hours with a scanning electron microscope, Mary-Jacque Mann, a lab forensics specialist, and



Beth Ann Gilroy, forensics lab specialist, compares feathers from Northwest birds.

Parts and products

Here are some of the "parts and products" the U.S. Fish and Wildlife Forensics Lab has investigated:

- Sealskin coats
- Reptile leather products
- Eagle feathers
- Walrus earrings
- Rhino-horn knife handles
- Tablets made from powdered rhino horn (believed to be an aphrodisiac)
- Crocodile-skin shoes and purses
- Giraffe-hair bracelet
- Elephant-skin briefcase
- Turtle-oil suntan lotion
- Smoked whale meat
- Tiger-bone tincture (supposedly has medicinal power)
- Elephant-foot ice bucket
- Whale-blubber chewing gum

Ed noticed subtle differences in the 10,000-times magnified ivory tusks: The abundance of microstructures called dentinal tubules is greater in mammoth ivory than in modern elephant ivory. This causes the visible cross-hatching called "Schreger lines" to form angles of less than 90 degrees in ancient ivory and greater than 110 degrees in modern ivory.

For the first time, scientists could objectively determine whether carved items were made from "legal" ivory.

"It was an amazing finding made possible by a \$250,000 scanning electron microscope and a 25-cent protractor," Ken says.

The lab's chief criminalist Dr. Kent Oakes, who has a Ph.D. in physical chemistry (molecular spectroscopy) and is an 18-year veteran of police crime-lab work, says the chance to be a part of the lab's pioneering work in wildlife forensics drew him to the job.

"It was exciting to see all of the sophisticated instruments I ever dreamed of having all at one time," Kent says. "But if we're really serious

"We get about 300 to 500 eagles a year and about 1,000 requests for feathers."

about protecting endangered species and prosecuting big-money cases, we need the best scientific equipment available."

The wildlife forensics lab also serves as the National Eagle Repository. Wildlife enforcement agents send

bald- and golden-eagle carcasses to the lab, which makes parts of feathers available to American Indians for use in religious ceremonies.

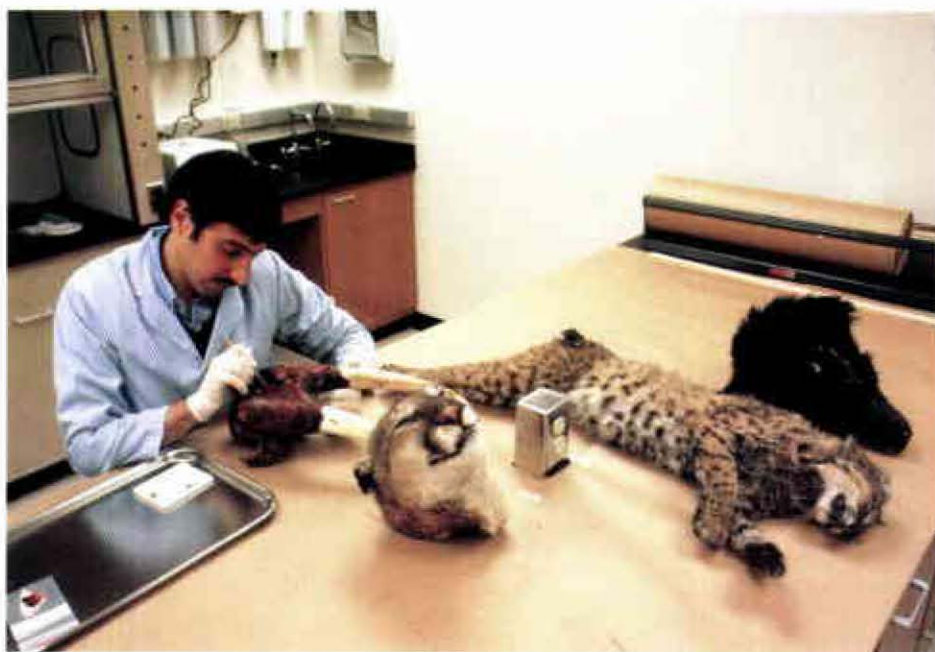
"We get about 300 to 500 eagles a year and we have about 1,000 requests for feathers," Kent says.

"The scare factor will be worth 1,000 officers before we're done."

While lab scientists already have shown the value of the lab during testimony involving wildlife crimes, the lab's success won't be measured by the number of convictions, says director Ken Goddard.

"We can only provide the scientific facts we obtain based on the evidence we get," he says. "But if our very presence creates a paranoia among the violators, well, that's great, too."

Adds Terry Grosz, assistant regional director for the Fish and Wildlife's division of law enforcement, "The scare factor the lab creates among violators will be worth 1,000 officers before we're done. We now can say to those people, 'We have the methods and the means to convict you—and we will.'" ■



Peter Dratch, senior forensic specialist at the wildlife "crime" lab, takes muscle tissue to study biochemical differences between a walrus, cougar, bobcat and bear.

The write stuff

Cop. Scientist. Best-selling novelist. Director of a one-of-a-kind lab to investigate crimes against animals. Ken Goddard's life has had as many twists to it as his spine-tingling books.

Balefire, Ken's first novel, spent three weeks on *The New York Times* best-seller list. In the book, terrorists take over the Olympic Games. *The Alchemist* is a thriller about a college professor who sells drug formulas to organized crime. Ken's third novel, *Digger*, is due out in the fall.

In all three, he weaves his background in science and police work to create eerily real scenes.

"There are a lot of depressing aspects of police work that I don't miss," Ken says. "At the crime scene, you put yourself in the victim's skin mentally and walk through the motions you believe he or she made. It's a weird sensation to get a sense

of what the victim felt. It's the same with writing. Writing isn't successful unless you're capable of stepping into the character's skin and *being* that person."

Ken began writing as a psychological safety valve to his job of investigating one lurid crime scene after another.

"After viewing hundreds of murder victims you numb yourself to the fact that each bloody carcass was a living, breathing person a few hours earlier," he explains.

What happens when the victims are animals rather than human beings?

"People react differently when the crimes are against animals," Ken says. "For some reason, homicides just become statistics, but there is a true outrage when it involves defenseless animals."



HP's Steve Baker guides industry consultants through the manufacturing segment of the NewWave Computing demonstration.

NewWave Computing strategy makes a splash

By Katie Nutter

On an island just off the coast of Florida, some three dozen consultants or "industry watchers" joined HP executives in March for a briefing on HP's NewWave Computing strategy.

The event gave HP executives a chance to describe the company's framework for computing and to showcase solutions and technologies that HP can deliver today.

NewWave Computing is HP's implementation of what the industry most often calls "cooperative" computing, which is the form computing will take in the decade of the 1990s.

The decade of the 1960s was the era of the mainframe. In the 1970s, distributed data processing was born, and the HP minicomputer played a key role in making it happen. The decade of the 1980s was the age of the personal computer. In the 1990s, cooperative computing will build on and incorporate these previous technology trends.

This decade's version of computing

is a network of specialized and general-purpose computers and peripherals that are all accessible to people through their personal workstations, and which all cooperate together as a single, integrated whole (see the November-December 1989 *Measure*).

Cooperative computing may be an industry trend, Networked Systems Sector Executive Vice President Doug Chance told consultants. But HP's approach is different from others because it is open—that is, the interfaces are published—and based on industry standards.

In contrast, many of HP's competitors build their solutions around their own proprietary architectures. "A cooperative-computing strategy *must* be based on open systems," Doug said. "Proprietary models won't integrate diverse computing environments, and that's what customers want to do. They want the flexibility and choice that open systems and standards create."

Joel Birnbaum, vice president and general manager of HP's Information Architecture Group, was quick to point out that standards don't mean standardization or sameness. In fact, he noted, standards will make possible a greater variety of computer systems components and software. Joel compared an open system with another pervasive technology—electricity. "The electrical plug is a standard interface. Yet we've seen tremendous change on each side of that standard interface ... in sources of electrical power and in the appliances that use it. If the interface weren't standardized—if people had to re-engineer the entire connection for each new technology—then improvements on either side of that interface would have been much slower."

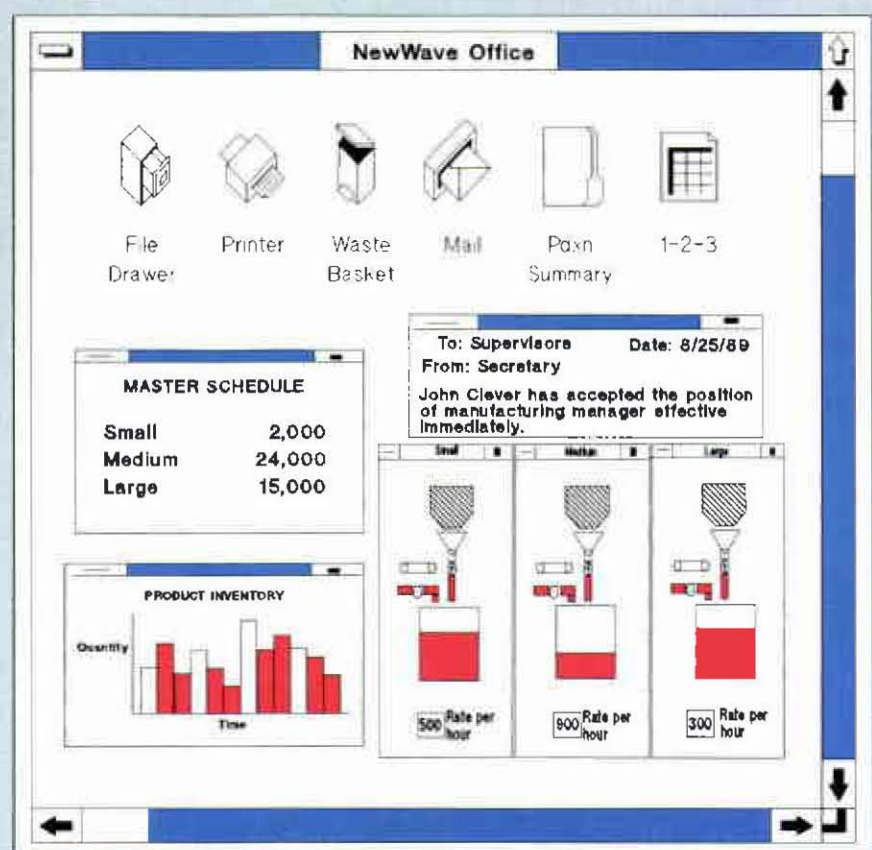
"Standards aren't just good for customers," noted Dean Morton, HP's chief operating officer and head of the Computer Business Organization. "Standards also provide additional

A cooperative-computing strategy must be based on open systems.

market access for HP by opening up accounts from which we were previously excluded because of proprietary architectures."

Besides being based on open systems and industry standards, HP's architectural framework has two other important characteristics.

First, HP's approach has the goal of providing both application portability (the ability to move software applications between different computers) and interoperability—the ability of different software and computers with different operating systems to work together cooperatively. To make this



This is an example of what a manufacturing supervisor's computer screen might look like with NewWave Computing.

The icons on the top row represent some of the services the manager would want to use. The windows are views into different parts of the organization, representing information that formerly was available only in stacks of computer printouts or by "sneaker-net"—walking over to another part of the organization to catch a glimpse.

On the top left, the supervisor gets to view what's happening in a materials-management application running on an HP 3000 computer.

In the bottom left window, the data from a production-scheduling

application, running on an HP 9000 in the warehouse, is expressed in easily-understood graphical form.

In the bottom right, the supervisor gets to view what's happening on the manufacturing floor in "real time"—as it's actually occurring. (This capability requires HP NewWave support for X-Windows terminals, which will be available in 1991.)

Finally, in the top right window, there's HP's OpenMail, HP's new electronic mail product based on the X.400 industry standard that can communicate across MPE and UNIX* operating systems.

*UNIX is a registered trademark of AT&T in the USA and other countries.

happen, HP will build on some of the technology in the Networked Computing System (NCS) pioneered by the Apollo Systems Division.

Other vendors' architectures—most notably, IBM's Systems Application Architecture (SAA)—emphasize application portability. In seeking to

achieve this goal, SAA dictates a new and proprietary applications programming interface that forces customers and software vendors to rewrite most of their applications.

In contrast, HP's NewWave Computing framework assumes that existing applications will work directly with

NewWave

the operating systems for which they were designed. The plan is to add NewWave Computing extensions that allow those applications to run in a client-server environment, in which some computers—the clients—ask for a service and others—the servers—provide it.

In addition, HP's evolutionary approach provides tools that allow the old applications to use modern user interfaces.

While existing applications are gracefully integrated, new applications that take full advantage of the technologies in NewWave Computing will go much further in terms of being able to cooperate by sharing data and resources. In that scenario, for example, the output of one software application would automatically affect the workings of another; the two (or more) applications could cooperate on a mutual task.

Besides the focus on interoperability, HP's architecture is based on software objects.

HP's implementation of software objects represents perhaps the most significant technical contribution of HP's NewWave user environment and

Standards don't mean standardization or sameness.

is the primary reason this software has won so many awards. Simply defined, objects are self-contained pieces of information and the procedures for operating on them. Think of an object as a completely enclosed and unknown house at which you're knocking on the door. All you have to know how to do is to knock, and someone will answer and tell you how the house is organized and the rules of the



Joel Birnbaum (left), V.P. and G.M. of HP's Information Architecture Group, and Apollo Computer co-founder Paul Leach talk over bits and bytes.

establishment. A software object has only to "knock on the door" of another object, which then explains its own organization and rules.

Objects benefit the software industry and end-users. They make it possible to reuse software modules; software developers can just "plug in" software objects into their applications. Software objects can cooperate with each other, even though they might not have been designed to do so.

Objects also make it possible to encapsulate existing applications as objects—in other words, to provide them with the same interfaces that are specified in the object-management facility—and integrate them with new technologies. As HP President and CEO John Young told the consultants, "The power of objects will unlock the

power of information."

In keeping with its emphasis on open systems and standards, HP is licensing the NewWave user-environment technology to other vendors (most recently to NCR and AT&T) and helped found the Object Management Group to help forge an industry standard based on HP's approach. In addition,

The power of objects will unlock the power of information.

tion, the NCS technology described above has been licensed to more than 200 other companies and is part of a joint submission to the Open Software

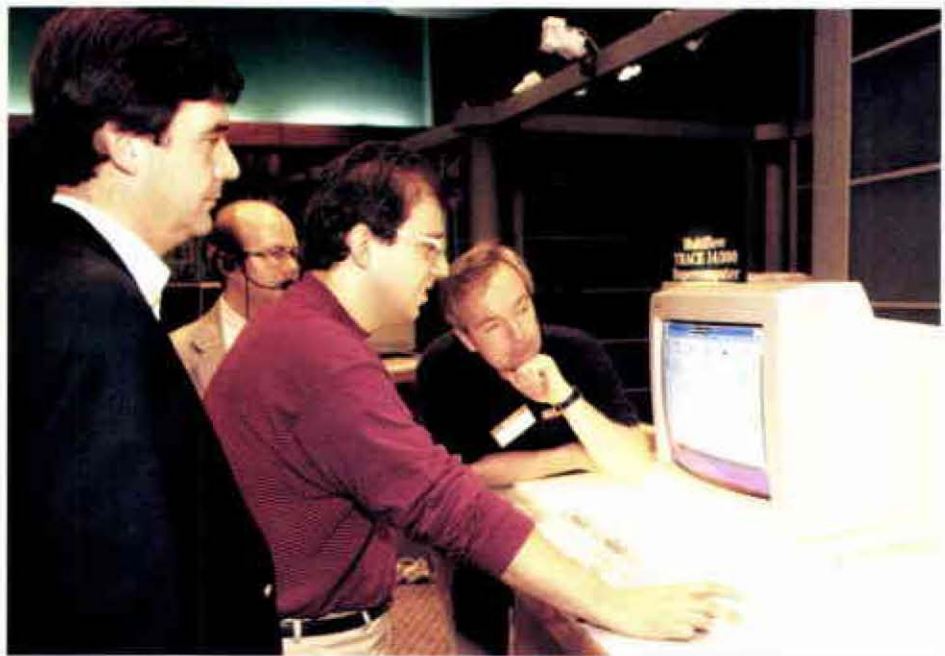
Foundation from HP, IBM, DEC, Transarc and Locus Computing.

As John Young, Dean Morton and Doug Chance all told the consultants—and the media in two later press briefings—standards and open systems have changed forever the rule of competition in the computer business. They added that standards make it possible for vendors to develop many new and exciting single or “point” products that can plug in and work with the overall network. Because standards define the interface, they create opportunities for new companies to challenge established leaders who are wed to proprietary architectures and the status quo.

Many of those challengers are growing much more rapidly than “the establishment.” And HP—which has a much broader offering than any of them and which achieved a 25-percent growth rate in computer-business revenues in FY '89—must be considered as the leader of the challengers.

Everyone agreed that the consultants' briefing—a team effort organized by Randy Whiting, manager of HP's industry consultant relations program—was a success. The message to industry watchers was upbeat. So was the mood. The reviews are still coming in (see quotes on this page), but the preliminary conclusion appears obvious: HP has a plan to win in the 1990s—and a very good chance of doing just that. ■

Katie Nutter is manager of executive communications in HP's Corporate Public Relations department. Her last Measure story, “Rows and columns defined,” appeared in January-February 1987.



RICHARD KEVERN

Consultants (from left) Tom Willmott, Tony Friscia and Bruce Richardson take part in an interactive team-computing demonstration during the March briefing in Florida.

What the consultants say about NewWave Computing

“NewWave Computing represents the most logical and coherent framework for an overall information architecture. This is the first time we've seen a vision that is being delivered, not just talked about.

“Your level of content was perfect. The feedback session was one of the most intriguing parts of the whole event. I don't think your competition would have dared do it. It reinforces HP's overall approach to openness.”

BRUCE RICHARDSON
Vice President

Advanced Manufacturing Research

“With NewWave Computing, HP is in a position to take a leadership role in the cooperative-computing market. HP has the right size, products, stability and vision. They accurately predicted the direction of the industry and made the right investments and changes to be ready.

“HP's commitment to provide unrestricted access to executives clearly differentiated you from the competition. I was very impressed with the level of your executives'

participation in the event; it showed real commitment to the program.”

MICHAEL MILLIKIN
Vice President-Technology
Seybold Office Computing Group

“HP's NewWave Computing direction will extend the company's position in the industry. Its reputation as a quality company will be augmented through truly innovative technology, design and support of open environments, and a real understanding of user requirements.

“The company's persistence in 'doing right' for the customer will assure HP's role as a leader in the '90s.”

CHRISTINE HUGHES
President
Myriad Research

“NewWave Computing represents an excellent base of technology that will allow HP to provide innovative products and services in the '90s.”

TOM WILLMOTT
Vice President
Aberdeen Group

HP helps key National's success

It's 11 p.m. and you've just flown from New York City to San Francisco. You're tired and hungry. The last thing you want to do is stand at the counter and wait for your rental car.

If you're a National Car Rental preferred traveler you'll drive out of the airport lot in a matter of a few minutes, thanks to an automated rental system designed by National and HP.

The Smart Key system works like a bank automated-transaction machine. Renters insert their approved magnetic-stripped credit cards into a slot and answer five questions on an interactive HP Vectra personal computer with a video-graphics-adaptor color touchscreen monitor.

Approximately 30 seconds later, the computer processes the rental information, releases a set of car keys and presents the renter with a short, simplified rental agreement.

When they reach their destination, National renters can drop off the car, catch their flight, then complete the car-rental transaction and receive a receipt from any Smart Key Machine in the system.

"National came to us in August 1988 and we had a demonstration system ready two months later," says Larry



With help from HP, National Car Rental customers can receive a rental agreement and a set of car keys in about 30 seconds using National's Smart Key automated-transaction machine.

Sanford, program manager at HP's Advanced Manufacturing Systems Operation in Sunnyvale, California.

"It was a challenging project because of the tight schedules and the need to integrate our hardware with printers, card readers and other non-HP equipment into a new custom enclosure. It took a team effort between National and HP to develop a high-level language to interface Smart Key to National's mainframe computer network."

National introduced its Smart Key Machines in March 1989 at the Los Angeles, San Francisco and San Jose, California, international airports. Today, about 30 machines are installed at major U.S. airports.

Key executives and frequent corporate travelers can join National's Emerald Club or Privileged Preferred Program and receive a Smart Key card by completing a personal profile. This includes company data, billing pref-

erences, optional coverages and frequent-flyer numbers.

"Customers expect and deserve the fastest and easiest service possible," says Vincent A. Wasik, National's president and CEO. "At National, our goal is to develop and use technology to make that expectation reality whether the customer rents with us once a year or once a week."

Based in Minneapolis, Minnesota, National is the world's largest car-rental network. With its partners Europcar, Nippon and Tilden, it serves 129 countries and territories with more than 4,500 locations.

"Nobody offers the level of service Smart Key provides," says HP's Larry Sanford, "and we're proud to help make it a reality." ■

1992: countdown for a unified Europe

By Mary Weed

The European Community will comprise a vast market when the concept of 1992 becomes a reality, and HP is gearing up for new business opportunities there.



Ultimately, the 12 countries that make up the European Community will be united with a common currency and passport. The blue and gold flag in the foreground symbolizes 1992.

All of a sudden, with the fall of the Iron Curtain that used to split Europe in two, East Central Europe has been stealing much of the show. It has shadowed some of the real progress in the unification of Western Europe.

Today, we're seeing a greater chance for a United Europe that includes the 12 European Community (EC) members and more. What do all these changes mean for HP business in Europe?

- Lower consumer prices throughout Europe.
- Cheaper transportation.

- More jobs.

Those are among the benefits which European Community studies predict will flow from the completion of a true common market—an idea whose time seems at last to have come.

For Cesare Barbieri, head of the Astronomical Observatory of Padova, Italy, "HP offers the technology we need in astronomical research in the 1990s. It can equip us for the Galileo Project (a sophisticated telescopic research project) in ways no other company can."

A unified European market in 1992

could mean better service and greater interest in hidden markets, such as European research laboratories and universities where HP is very active.

For Carrefour, an HP customer and one of France's biggest shopping store chains, 1992 means new opportunities to diversify and expand in EC countries. "This is already having a strong impact on our business," says Bertrand de Menthiere, HP sales representative for the French group.

Inside HP, the enthusiasm for 1992 is rising. According to Steve Cutting, Unilever worldwide account manager at HP in the United Kingdom, "HP customers such as Unilever use our systems extensively within the consumer-packaged goods industry.

"Unilever plans to restructure its manufacturing and distribution

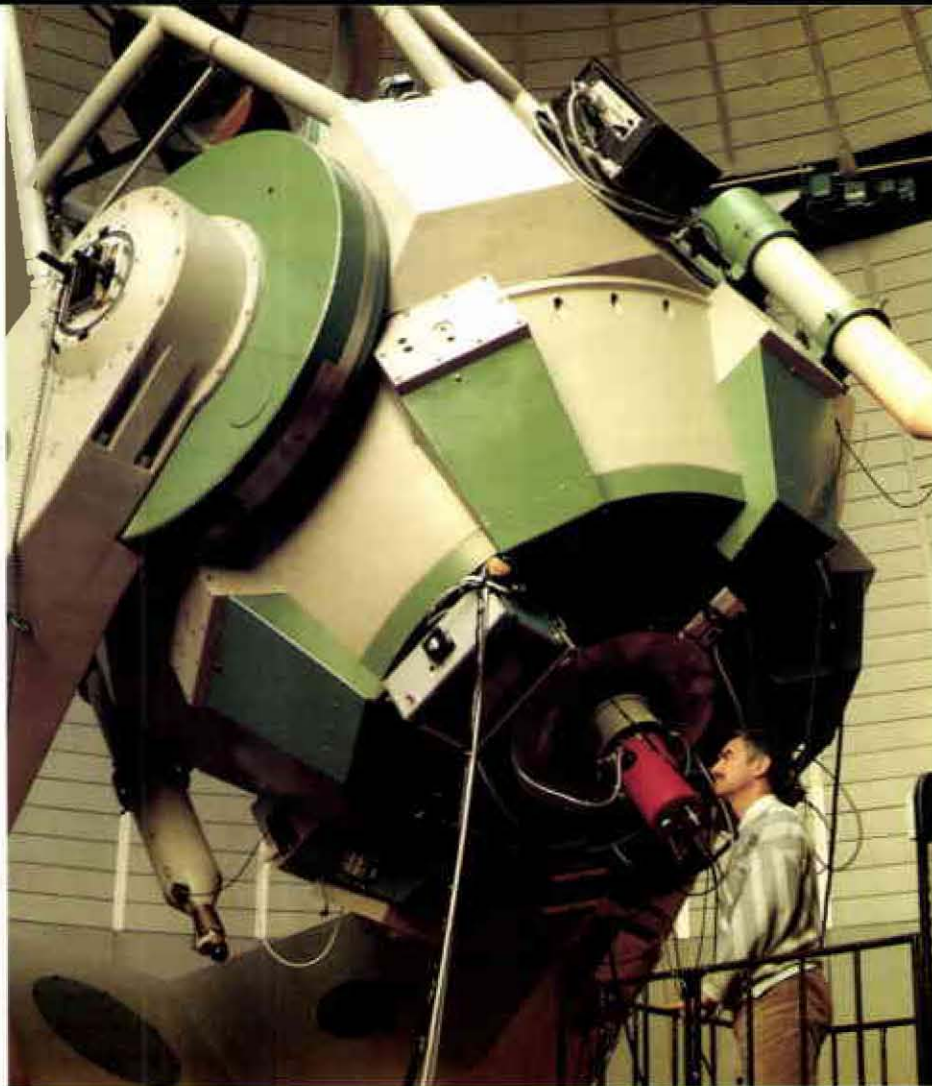
How did "Europessimism" become "Euro-optimism?"

operations to take advantage of the integrated marketplace that will exist in Western Europe in 1992."

What a change! Just a few years ago, Europe was slow, old and suffering from industrial amnesia. How did "Europessimism" become "Euro-optimism"?

In 1985, when the European Commission's president, Jacques Delors, launched the idea of completing the Community's "internal market" by 1992, his project was treated with skepticism. "Europessimism" and "Eurosclerosis" were symptomatic of what ailed the European Community in the 1980s.

Europe was economically and politically stalled for years, despite the community's very real achievements—with a twentyfold growth in intracommunity trade during the last two dec-



HP's advanced technology was the deciding factor when the Astronomical Observatory of Padova, Italy, chose HP to assist in its sophisticated telescopic research project.

ades. The successive oil crises of 1973 and 1979 drove most countries back behind their traditional frontiers to battle domestic unemployment and rising inflation.

Building a common Europe seemed a luxury for more prosperous times. Even so, Hewlett-Packard was one of several companies which launched a number of cross-border cooperative research programs.

Meanwhile, the community grew. Spain and Portugal joined in January 1986 to make the group 12-strong. Each country brought a new set of internal dynamics to be accommodated in the quest for unity. But the goal of a true common market still seemed far away.

Enter 1992

Just what has changed the old hope into a concrete program which most

European business leaders find feasible?

The one word answer is pragmatism. The term "1992" sums it up nicely. If the word used was a concept—internal market or European unity—few crowds might rally under its banner. To ensure Europe's popularity, the commission chose a date that needs no translation—New Year's Eve—31 December 1992.

This shifted the debate from "if" to "when" and gave more than 325 million Europeans a common pragmatic goal. The *modus operandi* of the community had to change for things to work.

The first move was to redefine consensus. Until 1987, this meant unanimity, which in turn meant the power of veto. Any country could block any measure, regardless of the agreement among the other states. The Single European Act, the first and *only*

amendment to the community's founding charter in 1957, changed that to qualified majority rule.

The second move was harmonizing standards—redefining what is acceptable Europewide in product terms.

Indeed, for 1992 to succeed, common industry standards will be as important — if not more important— than setting other common European union positions. An HP team in Böblingen, West Germany, is working on that.

HP's technical-regulations office in Europe has been successful in getting approval within the EC for about 300 data-communication licenses, 150 safety products and 400 electromagnetic-compatibility systems and products.

In May 1989, HP opened an office in Grenoble, France—the European Localization Coordination Center—which is responsible for linking HP Europe's divisions and country product organizations. These units, in turn, are in charge of making all the necessary translations and product changes needed for non-English speaking users.

Countdown for takeoff

Where does European business stand as 1992 approaches? Of the 300 or so proposals which went forward after initial consultation, more than 60 percent already have been adopted.

For instance, a single wavelength for mobile communications (car telephones) replaces the previous five. One short communitywide customs document takes over where more than 30 forms were needed before. New directives are being set to harmonize products communitywide in the areas of machine tools, pharmaceuticals and air transport.

Member states have agreed to allow the free movement of capital across



The dozen European Community countries (including Ireland, Scotland and Great Britain, which comprise the United Kingdom) span a tremendous economic market.

Ahead of his time

For co-founder Bill Hewlett, the reality of Europe 1992 promises to fulfill a prediction he made in 1957.

That was the year the Treaty of Rome was signed, establishing the objective of a common market through the European Community (EC). Bill, then executive vice president, traveled to Europe to study the treaty's implications for HP.

He returned to the U.S. convinced that it was essential for HP to participate directly in the economic life of the EC. He made a persuasive case to HP's other top managers about the opportunities this new framework could provide for science and technology—and the potential for HP. In 1959 HP established its first manufacturing and sales facilities in Europe.

The EC heads of government in 1985 committed themselves to completing the single market by 31 December 1992—a deadline that is now in sight.

In Bill's view, the formalization of the single market will crown the remarkable advances Europe has already made.

"It was easy to see that if the European nations could set aside their partisan views, Europe could become one of the major trading blocs in the world," Bill says.

"It's taken 35 years for this to come to pass. There are still many residual problems, but without question Europe is a region that will achieve most of its potential before the end of the century."

Gearing for growth

By Michael Krug

A single European market—the realization of 1992—will mean substantial opportunities for HP. However, all companies in Europe are working hard to increase their presence and productivity in anticipation of 1992, warns Eberhard Knoblauch, managing director of the German Region.

“Competition is likely to become tougher in the electronics industry, as well as for our customers,” Eberhard says. “As more companies merge and increase in size to increase their effectiveness, customers will become even more demanding.

“To meet this challenge, HP must continue to increase our productivity and to demand the highest quality in our products, services and delivery. Manufacturing will play a key role by reducing time-to-market for new products.”

HP's significant stake in European manufacturing includes:

- PCs, networking and medical products in France;
- Computer peripherals and instruments for microwave and telecommunications testing in the U.K.;
- The HP 3000 and HP 9000 computer systems, various test-and-measurement products and systems, and analytical and medical equipment in West Germany;
- And in Spain, HP's newest European factory, graphic plotters.



Eberhard Knoblauch (right), who heads a 1992 European task force on manufacturing, discusses surface-mount technology with Reiner Heinz.

“Clearly, we already have a wide range of manufacturing responsibility, but it needs to increase as we move toward 1992,” Eberhard says.

In addition to market potential, expanding European manufacturing is important for other reasons, Eberhard says. HP can better react to new European standards and have less difficulty with pricing because fluctuations of the dollar versus local European currencies will have less impact on HP.

“With the breakdown of frontiers and customs barriers, traffic and logistics already are less complicated,” Eberhard says. “Customs handling also will become easier. In a single market we will be able to serve customers directly without regard to the country.

“HP continues to link manufacturing and distribution to take advantage of this opportunity. As product delivery time turns into a differentiator among competitors, synchronized manufacturing and distribution becomes vital.”

Facilities designed to serve this purpose include the PC and software distribution center at Isle

d'Abeau, France; the HP LaserJet distribution center in Amsterdam; and a manufacturing and logistics center under construction in Böblingen, West Germany, which should be complete in 1992.

“HP's principles for selecting products and sites for new manufacturing facilities are the same that have driven the company to grow and succeed in the European market during the last decades,” Eberhard says. “We want to be present with manufacturing and R&D in HP's largest European markets and countries, and we want to avoid duplication of manufacturing responsibility for product lines in Europe.

“Looking beyond HP, other companies will expand their European manufacturing capacities as well. With manufacturing being the largest customer potential for HP, we should look forward to substantial growth opportunities in Europe during the next several years.” ■

(This is the first Measure article by Michael Krug, public relations manager for HP in Europe.—Editor)

their borders, to deregulate progressively the air and trucking industries, and to let insurers sell in any member country from a single office anywhere in the community.

European education is changing as well with greater EC-wide recognition of diplomas and professional qualifications. In short, 1992 has gathered momentum. But no one in the EC claims that it's easy coasting.

Europe remains very much a patchwork. A snapshot of the community would most likely reveal strong support in France, active campaigning in the Benelux countries (Belgium, Netherlands, Luxembourg), prudent optimism in Ireland and Denmark, great

Europe remains very much a patchwork.

expectations in Spain, some concerns in Italy and West Germany, and deep reservations in Britain.

The European Community system still has some serious bottlenecks. Different currency for each of the 12 countries is a major obstacle. People are also asking if Greece, Spain, Portugal and the U.K. stay outside the European monetary system, is there any realistic hope of a single monetary unit in the future?

Oversimplification and overoptimism, then, are not on the agenda. But the fact remains that the community already has covered, in three short years, a vast amount of ground—confounding the skeptics and surprising perhaps even the most ardent initial supporters of 1992.

Few, if any, sectors of the European economy will be unchanged by 1992. Companies will be able to operate on a truly European scale and to form cross-border mergers. They will work



Since it was established in 1984, HP Labs in Bristol, England, has made substantial R&D contributions, including the world's first secure mobile x.400 electronic mail system.

in an environment where goods, services, people and capital move freely among the member states.

All of this will shift investment patterns, marketing methods, ownership and industrial structure. As a result, most businesses will experience healthy growth and livelier competition, while some—such as food processing, pharmaceuticals, or transportation—may shrink as national distinctions disappear.

How will specific technology-based industries be affected?

■ **Public sector:** Opening procurement to cross-border bidding is important if only because of the volume of business involved. Europe's public sector is said to account for a full 20 percent of community gross national product, with infrastructure businesses alone (water, energy, transportation, public construction and telecommunications) representing less than 10 percent.

Open procurement is expected, first of all, to benefit the public authority itself, through lower prices. But those

who stand to gain the most are small- and medium-sized firms in the service sector. They will face a growing international competition as the practice becomes more widespread.

■ **Services:** Institutions such as banks, insurance companies and securities houses increasingly will be geared toward European operations. Opportunities are vast, but the pace of change may be slower than in other sectors.

1992 and electronics

For the information-technology industry, 1992 should drive companies closer to universal connectivity. Already companies are forming stronger systems ties with their customers, agents and suppliers.

And as firms expand internationally—whether by internal growth, acquisitions or alliances—there will be a much enhanced role for cross-border data networks which handle everything from computer-integrated-manufacturing data to electronic point-of-sale payments.

These developments substantially



As border restrictions ease as a result of 1992, HP's mobile disaster recovery truck will provide faster customer response throughout Europe.

increase the need for electronic data interchange (EDI) and various communications technologies. There is a premium on connecting different vendors' equipment.

The EC itself will be using EDI to collect trade statistics. The market for electronic mail is expected to grow tenfold by 1992 to more than \$2 billion.

At this rate, Europe is on its way to becoming the most competitive industrial-technology market in the world. And HP is ready to seize these opportunities.

Gerry Ford, London-based venture capitalist (and former HP employee) says, "There's no avoiding the competitive consequences of European eco-

nomics integration, whether you're in my kind of business or in chemicals, clothes or cosmetics. Information technology is increasingly at the base of European services and industries." ■

(Mary Weed is executive and internal communications manager for HP in Europe. She last wrote for Measure about Shirley Temple Black in the March-April 1990 issue. Josette Boulmier of the HP public relations department in Europe also contributed to this story.—Editor)

Under investigation

Key HP executives in Europe are investigating these major 1992 issues which affect HP:

- R&D in Europe
- Manufacturing
- Local procurement
- Local content
- Competition
- Alliances
- Standards
- Public procurement
- International accounts

- Channels and partners
- Terms and conditions
- Industry shifts
- Distribution
- Taxes and investments
- Communication
- Human resources
- Environment

Eyes focus on Europe

By Betty Gerard

While HP's European management has the natural lead in tracking the many separate directives that are part of Europe 1992 and in crafting the appropriate response for each, there are many other HP eyes trained on this emerging mega-market.

At a distance, understanding what's happening is complicated by the fact that implementing the new European Community (EC) rules will be spread over a long time (and has already begun in some cases), and other countries may well join the dozen now in the EC.

HP's Executive Committee, which makes the final call on investments related to Europe 1992, relies on two sources for information: European senior management—which under-

"We're not approaching 1992 as an event but as a process."

stands the mentality, interests and direction of the EC—and HP group organizations which will set up and operate new entities.

"We're not approaching 1992 as an event but as a process," says Executive Vice President Dick Alberding, who is impressed by the amount of time that HP's heavily scheduled European executives have carved out for added task-force duties.

It's not an assignment that comes to a neat end, either. "We know 85 percent of what to expect, but it's a big 15 percent that is still uncertain,"



Logistics and government affairs are among HP departments keeping an eye on 1992.

Dick says.

Traditionally, there has always been a built-in conflict between the desire in Europe for more manufacturing and R&D (to improve HP's industrial position and market access) and the focus

"We know 85 percent of what to expect, but it's a big 15 percent that is still uncertain."

of the groups on current profitability—a yardstick for measuring management performance.

Four years ago, under a "global-presence" policy, the Executive Committee accepted responsibility for directing a group or division at times to establish an operation outside the U.S. that might be contrary to its bottom line. For example, a group might regard a country as having too small a market for its particular products to merit a plant. But from an overall company perspective, an investment would be justified.

Bill Johnston, Corporate director of international planning and development, is the keeper of that policy. The blending of 12 countries into one heavyweight market clearly will have an impact on the number of such future decisions for expansion in Europe.

"One of Europe's self-criticisms has been the inefficiency of a nationalistic focus of industry," Bill says. "A lot of people have been doing the same

thing, which diluted the productivity of scientific resources.

"Europe won't suddenly be homogenized—but it will move in the direction of reducing nationalistic buying and national protection of industries. Our job is to take advantage of opportunities for scale economies that arise due to more transparent borders and less nationalistic markets."

As a "Made in Europe" label becomes a reality, it is likely that the local European manufacturing content of products will be gauged by the place where the last, most significant manufacturing step occurs. "We'll have to have our products well positioned," says Jim Burns, Peripherals Group manufacturing manager who has taken a lead on manufacturing strategic issues.

HP is already well ahead in establishing research and development in Europe as part of contributing to local economy. HP Labs (HPL) opened a research center in Bristol, England, in 1984, and director John Taylor has just assumed broader authority for HP Labs in Europe. HPL established a science center at the University of Pisa in Italy in 1989. All the HP divisions in Europe conduct R&D.

Simplifying the movement of goods into, across and out of Europe is an

The blending of 12 countries into one heavyweight market clearly will have an impact...

obvious area for potential savings.

Corporate Logistics is looking forward to a single customs entity in Europe, which would significantly reduce the number of ports of entry now being used by the various coun-

tries. To get ready for 1992, Europe's Customs Council has already started to issue common classifications for products across countries.

Similarly, the physical distribution of products within Europe will need to be rethought as it becomes easier to ship between countries without paperwork barriers. Chuck Marr, Corporate transportation manager, expects competition among carriers in Europe to follow the pattern in the U.S. after truck deregulation, where service levels improved while costs went down after a shakeout and restructuring in the industry.

Treasurer George Newman is keeping an eye on the merging of European

Fortunately, HP is organized with worldwide charters and strategies...

banks under way. As a major bank customer, HP stands to gain from such competition in the financial-services industry, including real-estate financing.

Today HP sells products to each country subsidiary, which then sets its own price (recovering taxes and other special local costs) and rebills. As European customers find it easier to buy across borders, it may force more uniform pricing within HP. Fortunately, HP is organized with worldwide charters and strategies rather than acting as a holding company for a number of independent national companies, which should make such an adjustment easier.

The prospect of a common European currency "would simplify our life tremendously," George says. "We could bill customers directly and consolidate the entire flow of paperwork."



However, chances are that Europe will have a common currency long before the countries give up their individual taxing privileges. And the tax burden remains a prime consideration in deciding where HP will grow.

Other Corporate departments, such as Government Affairs, help shape the U.S. response to proposed EC moves with broad implications. A proposed Council directive on the legal protection of computer programs, for instance, has brought in Steve Fox, director of Intellectual Property, to work with HP people in Europe on this hot issue.

Steve has pointed out to the Office of the U.S. Trade Representative that while HP generally welcomes the directive, the company opposes two provisions: the denial of copyright protection to interfaces and access proto-

"If you're going to make products in Europe, buy parts there."

cols, and the flat prohibition of reverse engineering. (Senior Vice President Franco Mariotti has made the same point in a letter to the European Commission in Brussels.)

Other Corporate observers see danger signs that need watching: Wayne Grove, Corporate hardware quality manager, has been telling divisions

outside Europe that in addition to new product hardware standards, the EC may soon adopt ISO 9000—which is emerging as a standard quality systems audit. Now optional, it sets stiff requirements for permitting a company to self-certify products instead of using an external agency and would impact HP.

From Corporate Materials, divisions are hearing, "If you're going to make products in Europe, buy parts there."

While the EC rules aren't yet firm, in some cases European content of 50 percent and above could be required. HP already has International Procurement Offices (IPOs) in the U.K., Germany and France to identify suppliers for divisions outside Europe. If a product is to be transferred into Europe for production, European parts sources should be lined up ahead of time.

As Japanese companies prepare to step up their presence in Europe, Yokogawa-Hewlett-Packard is extending its global sales program to serve these transplanted managers. YHP's Shoji Negishi will head a new office opening soon in London, modeled after those in the San Francisco Bay Area and Hong Kong.

Dick Alberding, who spent nine years heading European Operations in the early days, thinks HP is going to wind up "pretty proud of itself in Europe if—as a U.S.-based company—we don't become complacent.

"We must remain sensitive to international issues and the opportunities they present. If you take your eyes off for a minute, the world will go by you." ■



The Monterey Bay Aquarium Research Institute (MBARI) boat POINT LOBOS drops the remotely operated vehicle (ROV) overboard.

Secrets beneath the sea

Dave Packard's fascination with Monterey Bay, California, began more than 60 years ago. He was a teenager spending a summer in the nearby resort town of Pacific Grove and exploring the area.

"I was mostly interested in fishing and being a youngster," Dave remembers.

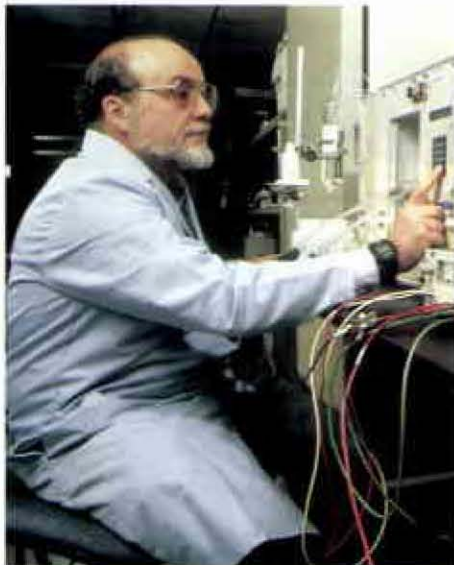
His love of the Monterey and Big Sur coastal areas of Northern California never subsided. There was an unmistakable beauty in the landscape and a million mysteries to be discovered below the sea.

In 1984, the Packard family foundation opened the Monterey Bay Aquar-

ium—a facility dedicated to education and research, as well as entertainment. By 1989 the aquarium was attracting more than 1.7 million visitors a year.

Just a few blocks from the Cannery Row-area aquarium is a lesser-known, but equally important organization—the Monterey Bay Aquarium Research Institute (MBARI). Dave founded MBARI in 1987 as a basic-research institute to foster excellence in marine research and to exploit the unique research opportunities of the Monterey Bay, Monterey Canyon and the adjoining ocean waters of

TERREY TURNER



Scientist Lou Codispoti conducts salinity tests at MBARI's headquarters.



Researchers Chuck Baxter and Bruce Robison monitor deep-sea video images.

the California Current.

MBARI's goal is to establish an overall-system concept for the ecology of Monterey Bay that can be expanded for use with other ocean areas and, eventually, for use on a global scale.

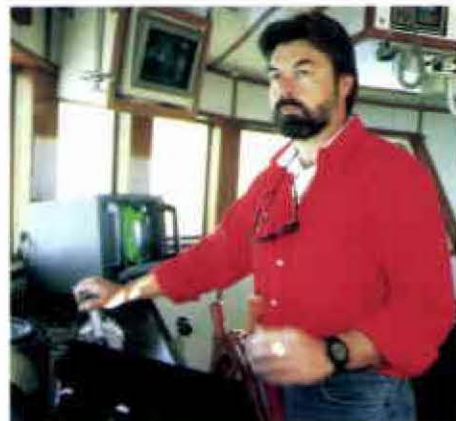
Eighteen miles north of MBARI's Pacific Grove headquarters is the group's operations facility in Moss Landing. That's where MBARI berths its 110-foot research boat—POINT LOBOS—which carries an ocean-probing device called a remotely operated vehicle (ROV).

MBARI uses nearly every type of HP product imaginable for its innovative research work. It has more than 50 HP Vectra personal computers, eight HP 9000 Series 300 business

computers, an HP gas chromatograph/mass spectrometer and a host of HP plotters, printers, logic analyzers and test equipment.

The aquarium and MBARI received substantial attention recently when *National Geographic* magazine devoted 42 pages in its February 1990 issue to the pair.

Today MBARI is making a name for itself as one of the premier research facilities of its kind. And all because 60 years ago a youngster developed an interest in a million mysteries under the sea. ■



Captain Ed Ross, flanked by an array of navigation and communications equipment, pilots the POINT LOBOS.



PHOTOGRAPHY

Scientist Holly Price takes a studious look at a video view of a midwater medusa. MBARI uses HP gear to catalog the video images.

BRUCE ROBISON



BRUCE ROBISON

Bruce Robison snapped these photos of an angler fish (left) and a file-tailed cat shark (above).

Extra

**ORDINARY
PEOPLE**



By Jay Coleman

Ann Johannessen had to laugh when she thought about the irony:

As a clinical-applications specialist, she spends most of her work week training intensive- and critical-care-unit (ICU/CCU) nurses in Northern California hospitals how to use state-of-the-art HP medical-monitoring equipment.

Then, on her annual vacations, she travels to some of the most remote villages in Mexico—where even the crudest medical instruments are luxuries—and volunteers her considerable skills.

If that weren't enough, she *pays* her own expenses and uses most or all of her flexible time off (FTO) to make the trips.

"I figure that I'm so fortunate and the need there is so great that it's important I contribute what I can," Ann says. "The money I spend on the trip isn't the point; to me, the FTO is more precious than the money. That's my real commitment to the program."

Ann volunteers her time to the Christian Medical and Dental Society, a nondenominational organization which enlists the aid of doctors, nurses and others to help treat patients in Third World countries.

On her first trip in March 1989, Ann was part of a 30-person team which treated more than 12,000 people in nine days in Monterrey, Mexico. This year in March she spent a week in the mountain city of Tepic, Mexico (about 95 miles north of Puerto Vallarta), bringing aid to four Indian tribes.

"I love the experience because it gives me the chance to be a nurse again," says Ann, a registered nurse



Ann Johannessen was one of 35 volunteer doctors and nurses who helped treat 12,000 patients in Monterrey, Mexico, in 1989. A patio serves as a makeshift dental clinic.

who has worked in the Stanford University Hospital ICU and who taught critical-care nursing at the University of Wyoming. "I still enjoy that one-on-one relationship of nurse and patient. You feel like you can make a difference in that person's life."

Five years ago Ann left nursing to join HP. She covers a territory from Bakersfield, California, to the south and Reno, Nevada, to the north. Her

"I still enjoy that one-on-one relationship of nurse and patient."

job includes helping hospital staffs decide what HP equipment is best for them and training the staff once the equipment is installed.

"Hospital nurses like the fact that HP has a nurse there who can understand and represent their clinical needs," Ann says.

"The training is important, too, because the minute the equipment is installed, someone needs to be excellent on it."

The situation is completely reversed when Ann goes on her volunteer trips. Native doctors and nurses who visit the villages usually have aged stethoscopes and basic supplies, but seldom have any equipment more sophisticated than an autoclave to sterilize surgical instruments.

Add to that a language barrier—the four Indian tribes on Ann's last trip spoke four different dialects—and treatment takes on whole new challenges.

"You see things you never would in the U.S. because we would never let the conditions get that severe," Ann says. "Last year we treated dozens of perforated ear drums and severe hernias on some people who had never seen a physician, let alone a scrub nurse or an operating room. There would be 300 people lined up for treatment when we got there in the morning."

It was a similar experience this March in Tepic. Thirty-five doctors, nurses and other volunteers worked

Extra

ORDINARY PEOPLE

from 6:30 a.m. to 7:30 p.m.—with four to five operating tables in constant use—in a scene that resembled the surgical tent in the movie *M*A*S*H*.

The volunteer team spent nearly the entire first day setting up a clinic and makeshift operating center, including unpacking boxes of donated medical supplies—some from HP—and scrubbing floors and walls to improve sanitary conditions.

"While sorting out supplies," Ann says, "one of the doctors found two

Normally, doctors would correct the affliction in three stages. This was no normal situation.

bottles of Dextran, a plasma expander used for replacing massive blood loss. He said, 'We'll never need this,' but left the bottles on his supply cart because there was room.

"Six hours later, a woman began bleeding profusely during surgery. There were no pints of blood for a transfusion and no time to match her blood and find a donor. Then the doctor remembered the Dextran, which was the exact thing he needed in that situation.

"It was like a miracle."

Do the volunteer doctors, nurses and other helpers do any long-term good during their brief visits to impoverished, Third World countries? Ann



Ann uses a hand puppet and healthy doses of good humor and love to bridge the communications gap in Tepic, Mexico. The four Indian tribes spoke four different dialects.

answers the question with a story:

On the second day of their stay in Monterrey last year, the team treated a young boy born with two clubfeet. Years of walking on the sides of his feet had produced scabs and callouses.

Normally, doctors would correct the affliction in three stages during a six-week period. This was no normal situation.

The orthopedic surgeon ordered surgery immediately. He broke both feet to correct the alignment and put both legs in casts.

For two weeks, the young boy laid in the hospital bed as motionless as

young boys are capable of. His father never left his bedside.

The day before the team was scheduled to leave, the surgeon removed the casts and examined the boy's legs. The skin had healed perfectly, the bones lined up beautifully. The boy's father cried.

"That's worth two weeks of FTO anytime," Ann says. ■

YOUR TURN

Measure readers share their views on matters of importance with employees



The paper chase

Your feature on the environment (March-April 1990) was one of the most useful pieces I've read in *Measure*. I read and re-read the article, taking note of the conservation efforts I can implement at work and home.

I was disappointed to find out though that the use of recycled paper for this issue was only an experiment. I understand the concerns with cost, but quality? As part of your target audience, the different texture and reproduction quality of the paper did not bother me. I don't feel anything substantial is lost in the communication process when you use recycled paper.

MARY BETH LEFEBVRE
Cupertino, California

One of the limitations of recyclable paper is the poor quality of color-photo reproduction. As an employee magazine, Measure believes it's important to run photos of employees, and the quality level isn't available in recyclable paper now. As far as the level of quality is concerned, Measure doesn't think it makes sense to publish a lower-quality magazine any more than HP would decide to design, manufacture and market lower-quality products. But Measure will continue to look for ways to do our environmental part. In fact, we recently located a Palo Alto recycling center which accepts the kind of "coated" paper on which Measure is printed.—Editor

Save energy, too

I am very glad to see your article on energy conservation.

I have noticed the large number of computers and peripherals left on after work, over two-day and even

longer weekends. I have tried to set an example by turning off all the equipment at least in my department's work area, where there can be up to three PCs, two plotters and two laser printers. Some of this equipment is left on all year around.

I never receive any encouragement, but instead am ridiculed and questioned by my co-workers. I grew up in a society and an environment where resources are scarce, and I cannot understand this waste!

FRANCIS WU
San Jose, California

"Read me, read me!"

I have found that the issues of *Measure* over the past few months have been bright, cheerful and welcoming. So much so, that it really makes you want to read it. There was a period when the cover became so drab that there was a tendency to save it "for later," but later never came.

Now, however, the covers are exciting and call out "read me." This applies to the contents as well. Keep up the good work.

MAUREEN CROCKER
Winnersh, England

Gracias from PRMO

It was very gratifying to read the article about Puerto Rico (January-February 1990). All of the people I spoke to here at the Puerto Rico Manufacturing Operation (PRMO) that read the article were very, very proud to work here, and they were very enthusiastic with the great article. (At the same time we were disappointed we didn't make the cover.)

I would like to congratulate you on a *super* article about a *super* HP division.

MARISOL SALCEDO
Aguadilla, Puerto Rico

The wrong stuff?

The first thing I read in *Measure* is the letter from John Young. Call me traditional, but I like to check that our thinking is aligned.

What I don't expect to see in that auspicious spot is a photograph of my competition. Of all the photographs that could have been published (January-February 1990)—checking on build quality, surveying publication, looking at engineering contribution—does the HP public want to view the competitive offering?

When that particular competitor sees the photograph, the sales force will have to live with the captions they could put on it. Better you should have shown our production line.

REY ROSENBERG
Uxbridge, England

YOUR TURN

Take another look

I'm a great supporter of the new HP identity program and was pleased to read the article "We've been framed" (January-February 1990).

It was a great write-up, but the actual design system looks much stronger than the visuals shown in the article. I saw a slide presentation of different pieces produced in Italy, the U.K., France and Germany which *really* showed the strength of the system. You want to talk unified look... the slide says it all. Perhaps you could print that for *Measure* readers.

LAURA CHURCH
Geneva, Switzerland

Half the story

I was very disappointed in the style of journalism that *Measure* demonstrated in the article "Making all the right moves" (March-April 1990). This article gave only half the story concerning the redeployment of more than 1,000 HP employees. The story talked only about the successes of moving these people and had lots of testimonials from managers patting themselves on the back because they were able to find jobs for almost everyone.

You did not mention the human-suffering angle to this story. There were families that were broken up and forced to relocate with great hardship, careers that were sidelined or terminated, demotions, people working in jobs they don't enjoy, friendships ruined by the job competition and



An assortment of European publications shows the unified "HP look."

some people forced to leave HP early or against their will.

I would hope in the future you will research the whole story and include the impact to everyone concerned.

ERIC HILL
Roseville, California

Both the main story and the "sidebar" quotes from various HP executives discussed the success and stress of redeployment. Everyone Measure interviewed agrees that redeployment is a difficult and sometimes painful process. —Editor

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 (large or X-large).

Address letters to Jay Coleman; by company mail to *Measure* editor, Corporate Public Relations, Building 20BR, 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.

LETTER FROM JOHN YOUNG

President John Young writes on the formation of HP's NewWave Computing strategy

This issue of *Measure* reports on our March consultants event in which we unveiled HP's NewWave Computing architecture and products. In many ways, the event demonstrated an integrated strategy for the '90s, and I give a lot of credit to Dean Morton's stewardship of our unified Computer Business Organization.

NewWave Computing is to our systems business what the Spectrum program was to our CPU (central-processing unit) business—a plan to unify our product offerings—and, in doing so, to move forward in dramatic new ways that provide real benefits to our customers.

NewWave Computing is more than a plan; it's a reality. We've been making the investments and putting the pieces together for a number of years now, and we showed consultants several examples of real products and real solutions available today.

But this unveiling of the strategy as a whole is new, and for those of you

"NewWave Computing is more than a plan; it's a reality."

who've been asking for the "grand plan" for some time now, you may wonder why we didn't articulate it earlier.

Let me provide a perspective. HP isn't the world's biggest computer company. As Doug Chance likes to put it: We're not the leader; we're the leader of the challengers.

But if you *are* the leader—if you're Computer Vendor Number One or Number Two, even—you can persuade yourself into thinking that you can



John Young spells out HP's NewWave Computing strategy to Steve Wendler, an industry consultant from the Gartner Group, during the March consultants' briefing in Florida.

write "the grand plan" on paper...and then have all of your customers wait for you to deliver that dream and adapt their business accordingly.

But if you're not one of the entrenched elite, you can't start with a blank piece of paper. You have to deal with reality. And that's precisely what HP has been doing.

We know our systems have to link to the multivendor environments customers already have, and so our strategy has evolved more organically. And because we've approached it that way—very pragmatically—we've been more open to new ideas.

The new "cooperative-computing" paradigm and industry standards are creating new rules of competition, and HP is beautifully positioned to benefit from—and lead—the new order.

We are the most credible and broad-based open systems vendor. We have

the most sensible integration and connectivity strategy. We build superior systems components. We have exciting technologies to build on, such as the Networked Computing System and object management. We have an insightful architecture. We have a reputation for customer satisfaction. We have the commitment and the will to win.

With your talents and teamwork, I think we can do just that.

EXTRA



HP's Inal Uygur gives Soviet students a computer demonstration.

Glasnost comes to HP

Students from the Soviet School of Geneva, Switzerland, and HP made a bit of history in February when—for the first time in the school's 40-year history—students visited a local company.

The 23 students, five professors and the school director wanted to see how computers are used in an office environment and chose HP's European Operations headquarters in Geneva.

The school prepares high school-aged Russian students for entry examinations to USSR universities.

Vladimir Pozdorovkine, who represented the school parents' council, said the group was very impressed with HP, including the company's technology, openness and HP way philosophy.

NEW HATS

Pete Peterson to director of Corporate Personnel... **Bill Hilliard** to GM for the Australasia Region.

Peter Kohl to area GM for Austria, the USSR, Central Europe, Yugoslavia, Turkey and Greece... **Toni Polsterer** to HP's first GM for the USSR.

HP LABS IN JAPAN

HP Laboratories has established a research lab in Tokyo, Japan, to focus on applied research in photonics, IC testing and low-temperature electronic devices.

Nobuo Mikoshiba has joined HP as director of the new lab.

APOLLO MERGER

The former Apollo Computer facility in Livingston, Scotland, will be vacated later this year. It has 220 employees, split between board-repair and workstation manufacturing, who will be offered voluntary severance packages or positions in South Queensferry.

HP's merger management task force has completed its assignment, including the changeover of information systems

and merging of sales forces.

EUROPEAN SALES

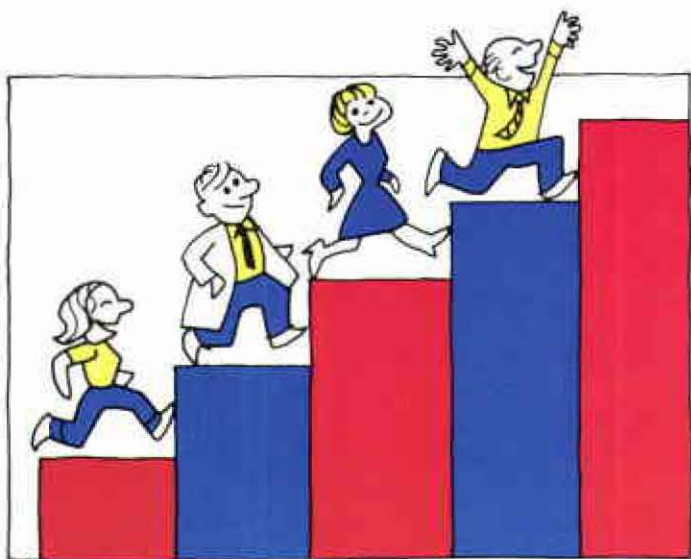
European Field Operations has merged sales and both factory and field marketing into a single function, creating four new "business manager" positions that modify two former sector-related roles for Europe. Each business manager is responsible for quota, field selling costs, factory marketing and discounts.

They are Networked Systems, **Klaus-Dieter Laidig**; Workstations and the Engineering Applications Group, **Wolfgang Rucker**; Personal Computers and Personal Peripherals, **Alex Sozonoff**; and Test and Measurement, **Roberto Favaretto**.

CHART CHANGES

Each of the four regions in U.S. Field Operations has reduced the number of its area organizations by one to conform to a standard size of 1,000 to 1,200 employees.

The Manufacturing Applications Group has ceased to exist and its activities have been transferred elsewhere in the Networked Systems Sector.



HP climbs *Fortune*, *Forbes* ladders

Hewlett-Packard was listed among the business elite in April when *Fortune* and *Forbes* magazines announced America's largest companies.

HP jumped six places—from 39th to 33rd—in the *Fortune* 500 list of the largest U.S. companies, based on 1989 sales performance. *Fortune* released its rankings in its April 23 issue in an article entitled "Hanging Tough in a Rough Year."

Fortune ranked HP third in the computer industry behind IBM (No. 4 overall) and Digital Equipment (27). General Motors Corp.—all \$127 billion of it—topped the *Fortune* 500.

Meanwhile, *Forbes* listed HP as No. 49 in its "Super 50" most powerful U.S. companies in the magazine's April 30 edition. *Forbes* includes banks and utilities in its list while *Fortune* doesn't.



... Yes, this is HP security ... Look, can I call you back?

NEW PRODUCTS

The Analytical Group has introduced the **HP 7680A**, a computer-controlled supercritical fluid extractor that is HP's first instrument dedicated to the sample-preparation market. ... The Medical Group's **HP SONOS 1000** cardiovascular imaging system is enhanced with an ultrasound frequency agility mode that combines high-resolution 2D imaging with low-frequency Doppler and color-flow imaging.

From the San Diego Division: the **HP PaintWriter XL** color-graphics printer, which can be shared by Macintosh users on an AppleTalk



HP PaintWriter XL

network. The Vancouver Division's enhanced **HP DeskWriter** printer offers AppleTalk capabilities and serial interfaces.

The **HP Series 6300 Model 650/A** from the

Greeley Storage Division is the first rewritable optical-storage product developed for the Apollo workstation family.

The Workstation Group's new **HP Visual User Environment (HP VUE)** has a flexible set of icon/window-based utilities that make a UNIX* operating system easier to use. ... A new family of **PC LAN** products from the Roseville Networks Division use standard telephone wiring to connect multivendor computer systems.

The **HP 9000 Model 1240** from the General Systems Division is HP's first fault-tolerant computer system aimed at the telecom industry.

The Lake Stevens Instrument Division's **HP 3577B** vector-network analyzer provides low-priced, precision base-band network analysis. ... The interactive test generator (**ITG/DOS**) from the Measurement Systems Operation lets PC test developers work with existing programming tools and libraries to augment their work.

*UNIX is a registered trademark of AT&T in the USA and other countries.

PARTING SHOT

New LED can stop traffic

You're driving down the street, the sun glaring in your eyes, when the driver in front of you steps on his brakes.

Or did he? Maybe it was just the reflection from the sun.

New light-emitting diode (LED) lamps developed by HP could shed new light—literally—on the problem.

The company believes the new HLMP-8150—one of several recently released lamps using the new LED technology—is the brightest LED lamp in the world—and 15 times brighter than HP's previous LEDs.

"It's almost blinding," says Hannah Suen, product marketing engineer for HP's Optoelectronics Division in San Jose, California. "The new lamps have tremendous potential for use in anything that needs to be seen clearly in bright sunlight



HP's Optoelectronics Division unveiled its new light-emitting diode lamps (LED) on a Lincoln Continental for a recent trade show in Detroit. HP believes the new lamps are the world's brightest LED lamps.

such as exterior automotive lighting and moving-message signs."

HP incorporated the new LED technology into the rear taillights of a 1990 Lincoln Continental car for a recent trade show.

LED technology is highly reliable and lasts the life of the car. The LEDs consume less power and provide faster

response time than traditional incandescent lighting.

Additional applications for the new LED technology may include sensors, including bar-code readers, transportation signs and medical research equipment, Hannah says.



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