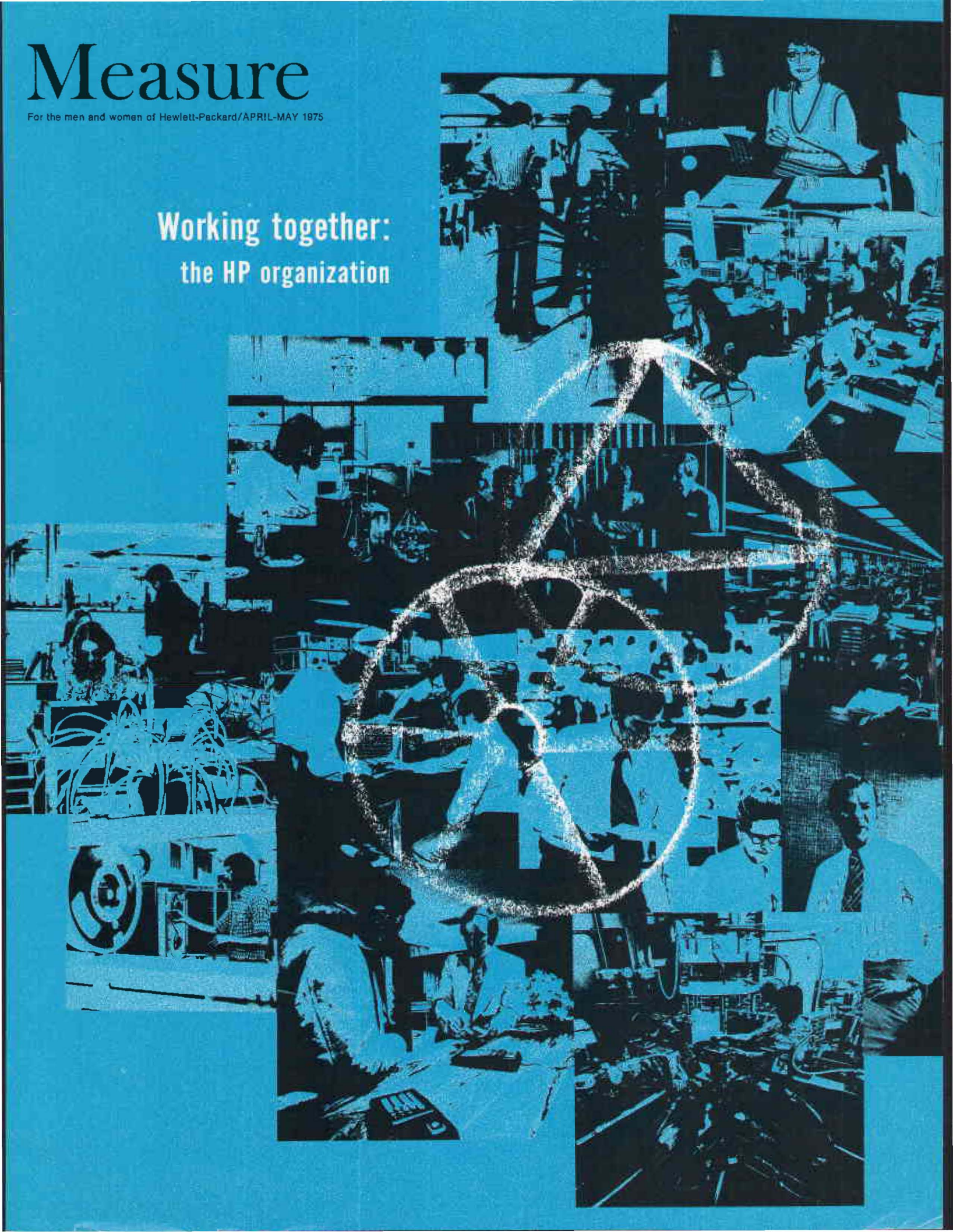


Measure

For the men and women of Hewlett-Packard/APRIL-MAY 1975

Working together:
the HP organization



From the president's desk

This month's issue of *MEASURE* is devoted to the discussion of the corporate organizational structure that was initiated at the beginning of this fiscal year. I thought it might be helpful to comment a little bit on the background of these organizational changes and also on how Dave and I view the operation of the company.

The basic operating unit at HP is the product division. It is an integrated, self-sustaining organization with a great deal of autonomy and independence. In general, it has its own R&D program, its own production organization, and its own internal relations with the marketing structure. It has its own accounting staff, its own QA program, and its own personnel department. A division is, in fact, a direct lineal descendant of the company as it was almost twenty years ago.

The divisional concept sprang from the desire to maintain the same kind of atmosphere in a growing company, that had existed when the company was much smaller. Initially, this concept of decentralization was no more than a dividing of the "Lab" into four groups — counters, oscilloscopes, microwave, and audio-video. That structure, however, quickly expanded into a more formal organization with the establishment of Loveland and Colorado Springs as independent sites, and with some of our early acquisitions.

These more formalized divisional structures allowed important decisions to be made at levels in the organization



that were much closer to operational problems. Further, they tended to provide some of the same kind of intimate relations that were characteristic of the company when it was smaller. This decentralization required an agreed upon set of corporate objectives to tie the organization more closely together, and to ensure that the company as a whole was headed in a common direction. It is interesting to compare these original objectives with our present ones and see how very little time has modified them.

We still believe that this organizational concept is as valid today as it was when it was first instituted. By now, many of our divisions are larger than the entire company was in the late 1950s. In general, they in turn have further decentralized internal operations to obtain the same advantages of in-depth decision making, and to provide a structure that allows each person the opportunity to contribute to the success of the whole operation.

The recent restructuring of the top reporting responsibilities has in no way diminished the importance of the division within the company. Rather, it reflects the fact that as we have increased in size, the responsibility of managing the total corporate organization has become sufficiently complex to require drawing additional people into management at the top level. On the following pages, John Young, Mason Byles, Bill Doolittle, Bill Terry, Bob Boniface, and others from throughout the organization, speak well for their functional roles within this new structure.

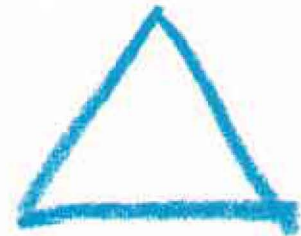
Bill Hewlett



Geometry of an HP division:

There are any number of reasons for taking a close look at the basic structure of a typical HP product division and a typical sales organization. Before doing so, however, it's time for a brief theoretical exercise to aid in the appreciation and digestion of that information.

First draw an equilateral triangle,



then draw a circle around it -- being careful that the circle touches all three points of the triangle like so: that figure, believe it or not, can be used to describe the way an HP division is organized and to some extent how it operates internally. Assume that each side of the triangle is occupied by one of the three "line"



(continued)

departments -- R&D, Marketing and Manufacturing (sometimes jointly called a "triad") that have a primary responsibility for the product line.

Then imagine that the three segments of the circle represent the three main supporting functions -- Finance, Quality Assurance and Personnel. These are classified as supporting services because they provide assistance and information essential to the operations of the triad.



Now let's look at the way things can happen: the three triangular departments can clearly make direct contact with one another. They do it all the time...



But frequently they need some help from the supporting team. What happens, for example, should Marketing need some Personnel assistance? The answer is simple: the triangle turns itself to the proper setting -- or the circle turns to the appropriate stop... like a dial. Also, as you can see, the circular departments are always in touch with one another.



That seems clear enough. But what about the division manager? Where does that role fit into the scheme of things?

Right in the middle -- at least for a start. Actually division managers do a lot of getting around when they can, or keep an open door when they can't. Their job is to keep the \odot rolling along harmoniously and profitably.

Students of organizational theory and communications theory will readily recognize the considerable benefits of the kind of flexible interaction made possible by the geometry outlined above. In effect, it permits any two points in the organization to communicate in a straight line -- "the shortest link."

So much for theory. Now we can look at some examples of real divisional departments, as described by the people responsible for their operation:

Division management: "Well understood goals and objectives..."

**Mason Byles, general manager,
Avondale Division.**

"A division at HP, as I view it, is people working together to meet well understood goals and objectives in three areas where they have a common concern and feeling of responsibility. First, for a division to exist, the people involved must feel a vital concern and a strong responsibility for the success of a specific product line. Secondly, there must be a deep concern for helping the other people involved with the product line achieve their own personal goals and ambitions. Third, there must be a strong feeling of responsibility for contributing positively to the general welfare of the communities in which the division participates.

"A product line is a group of instruments that provide related measurement and/or computation capability to the user. The specific application or market for any instrument in the line may vary significantly, but the fundamental measurement or calculation is always similar. At Avondale, for example, we are responsible for HP's gas chromatograph product line. Gas chromatographs can be used to determine whether or not the quality of the product produced by a large chemical plant is acceptable. They can also be used to determine whether or not an individual has taken a specific kind of drug. The applications differ significantly but the fundamental question of what chemical compounds are present and in what concentrations is the same.

"The success of a product line and, therefore, a division, is normally measured in terms of profit and growth. Ultimately, however, this translates into how well we actually can anticipate and satisfy the needs of the customers and potential customers for the instruments making up the product line.

"A division's responsibility is not lim-



ited to a single geographical area or plant location but extends to wherever the particular product line is produced and sold. In the case of the Avondale Division, for example, we produce gas chromatographs at Avondale, Pennsylvania, and in Boeblingen, West Germany. The people producing and marketing our products in Germany are as much a part of the Avondale Division team as the people working at Avondale. The people working at Avondale have a responsibility for insuring that gas chromatographs can be successfully produced and marketed at Boeblingen. Also, Avondale people have a responsibility to insure that the people involved

with the gas chromatograph product line at Boeblingen have opportunities to grow and satisfy their own personal goals and ambitions.

"Divisions are normally organized into six functional areas: research and development, manufacturing, marketing, finance, quality assurance, and personnel. The first three are typically called line functions. This means that they have the primary responsibility for the overall success of the product line. Finance, quality assurance, and personnel are normally thought of as staff functions which provide important information and assistance to the line functions to help them carry out their responsibilities more effectively.

"The division manager is responsible for making sure that clearly understood division and product-line goals and objectives are established; that an organizational framework and environment is provided in which people can work together effectively to accomplish their goals and objectives; and that outstanding individuals are selected to be responsible for each of the functional areas.

"A question that is often asked is how do you decide when another division should be established. Obviously there is no exact answer to this question. New divisions tend to emerge, however, when a particular product line becomes large enough to support its continued growth out of the profit it generates. Also, new divisions tend to emerge when a single division gets so large that the people involved start to lose their identification with the product line.

"It is important to remember that, while the autonomy of a division is one of HP's strengths, it is our ability to work together to transfer technology and ideas across divisional lines that has really made HP so strong. A year ago Avondale introduced a truly unique gas chromatograph. The impact on our division was significant in terms of growth and profit. These products would not have been possible, however, without the help of many other HP divisions.

"In summary, a division is a team of people working together to insure the success of their product line, their own future, and the future of their community. They do this most effectively by making sure the products they design, produce, and market are truly contributions in terms of satisfying the needs of their customers."

Division engineering: “Where do the ideas come from?”

To develop new products Hewlett-Packard invests approximately 10 percent of annual income in research and development. Between 1 and 2 percent goes into the long-range R&D programs conducted by Corporate's HP Labs. The balance supports the product development projects of the product divisions. Cyril Yansouni, manager of the network measurement lab at Santa Rosa Division (from whom MEASURE borrowed the “geometry” idea) describes how his R&D team — a generally typical division lab — goes about its business.

“HP is highly product oriented — very much keyed to providing a strong and steady flow of new products that represent new and improved solutions to customer problems. The objective for an R&D organization, therefore, is to come up with the new products — the ‘black boxes.’ We are very much organized to that end.

“The basic molecule of the R&D organization is the project team. This can be one person or a number of people. Ideally, they are dedicated full time to that project rather than shared by various teams. They probably will spend a year or more together before turning their product over to manufacturing.

“There are some other basic elements. One is the individual charter that every division has. Ours is ‘network measure-

ment,’ and our goal is to furnish the customer with everything he needs to characterize his network.

“Broadly speaking, our objective is to make money for the company, but specifically our product charter gives us a base on which to build ideas. You can see how this has worked, beginning with our original line of sources and sweepers which were designed to excite a network. To this were added test sets designed to test the inputs and outputs without disturbing the network. The next job was to compare measurements — a job for network analysis. To display the results we added different types like CRT's. Later we got into a new area — controlling and refining the measurement process via a computing device.

“Where do these ideas come from? Mostly from our own lab people — the iterative flow of ideas between manager, section manager and engineer. Quite a bit of input also is received from marketing people who serve as our outside antenna.

“On an informal basis, the ‘next-bench’ syndrome is an important element at HP. If an idea appeals to our own people it is very likely to be of use to customers also.

“But in a more formal way, the strategy meeting is where most new ideas are sorted out. We hold these on a very regular basis, and we'll bring in the division manager,

the R&D manager, and members of the relevant R&D and marketing teams.

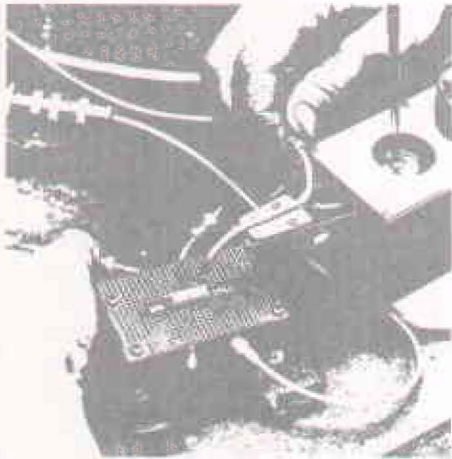
“Out of this continuing exploratory process eventually will emerge a concrete proposal that will then result in our forming a project team.

“Working on such a project team, the individual engineers are given a great deal of flexibility. Each engineer will be responsible for the completion of a particular phase of the project. They will be in contact with all parts of the division. Many options are open to them as the project moves along. They may want to follow it into production or into marketing — or venture somewhere else in the company. This is made possible because we emphasize breadth rather than specialization in recruiting engineers. We'll teach them the necessary specialty on the job.

“How do we measure our own performance? Yes, it's essential to be able to do that, and HP has a pretty good system of checks and balances.

“We work with targets, of course, and accounting is able to furnish us with data that tells us whether we are running over or under our investment goal for each project.

“The division review tends to be primarily a review of the division's product planning for top corporate management. It's our opportunity to assure the company



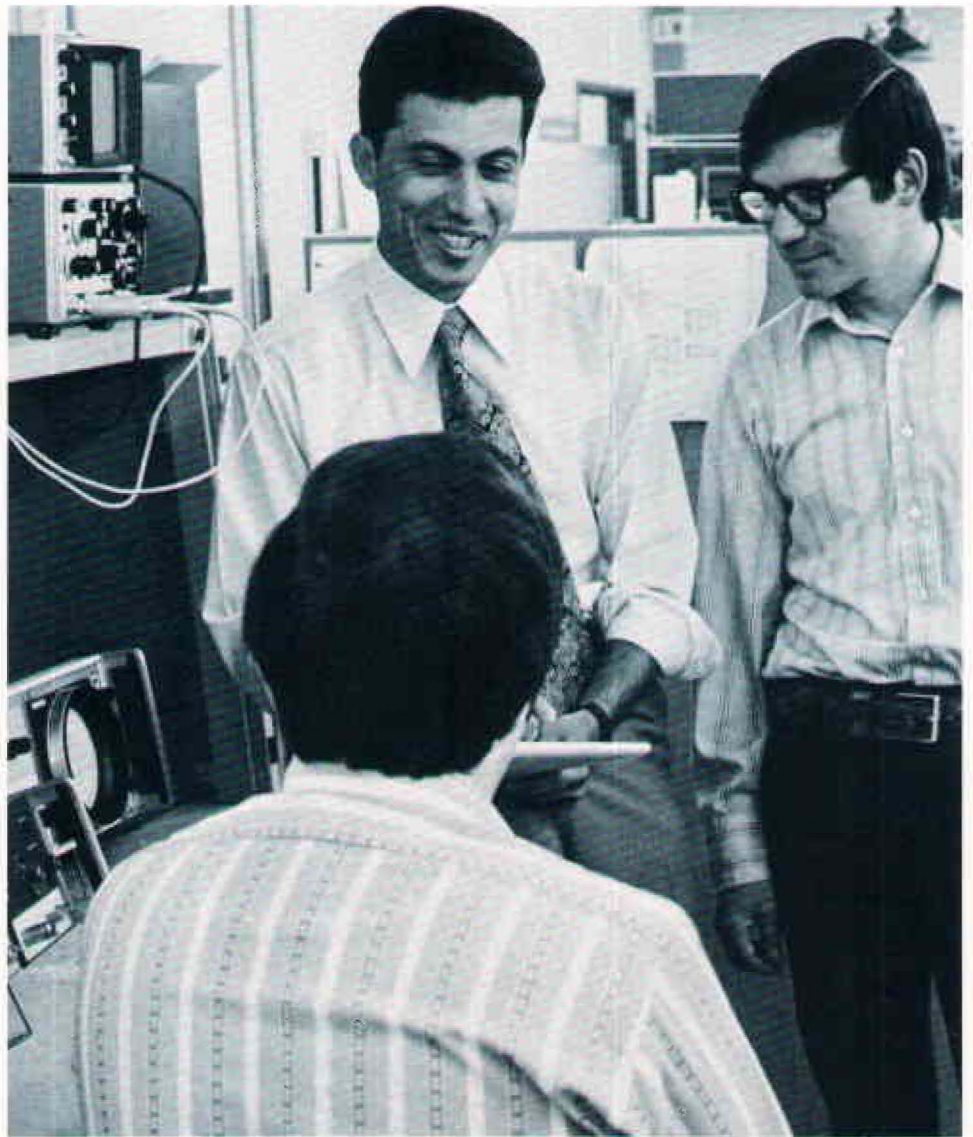
leadership that our plans are worthy of the investment.

"Now we also have an annual engineering review for the Corporate and Instrument Group engineering management, with the idea of making our plans visible so there can be some coordination and cooperation between divisions, if necessary.

"Where HP Labs is concerned we look to the corporate R&D people to explore new possibilities in processes that may be of use to us — the far-out process development. They have not developed new products for us, but rather the state-of-the-art processes that we can employ in improving products and inventing new products.

"Something we are working very hard on at this time is to improve the efficiency of our R&D investment — how to get more for our dollar. We want to speed up development so that products go to market sooner — say, two years instead of three. We are putting more emphasis on earlier reliability studies so that the process of breadboarding and debugging is improved and accelerated.

"Like a number of other HP products in the Instruments Group, ours is a mature product line. Basically, we are in the business of providing electronic tools. Fortunately, there appears to be no end in sight to the demand for these tools."



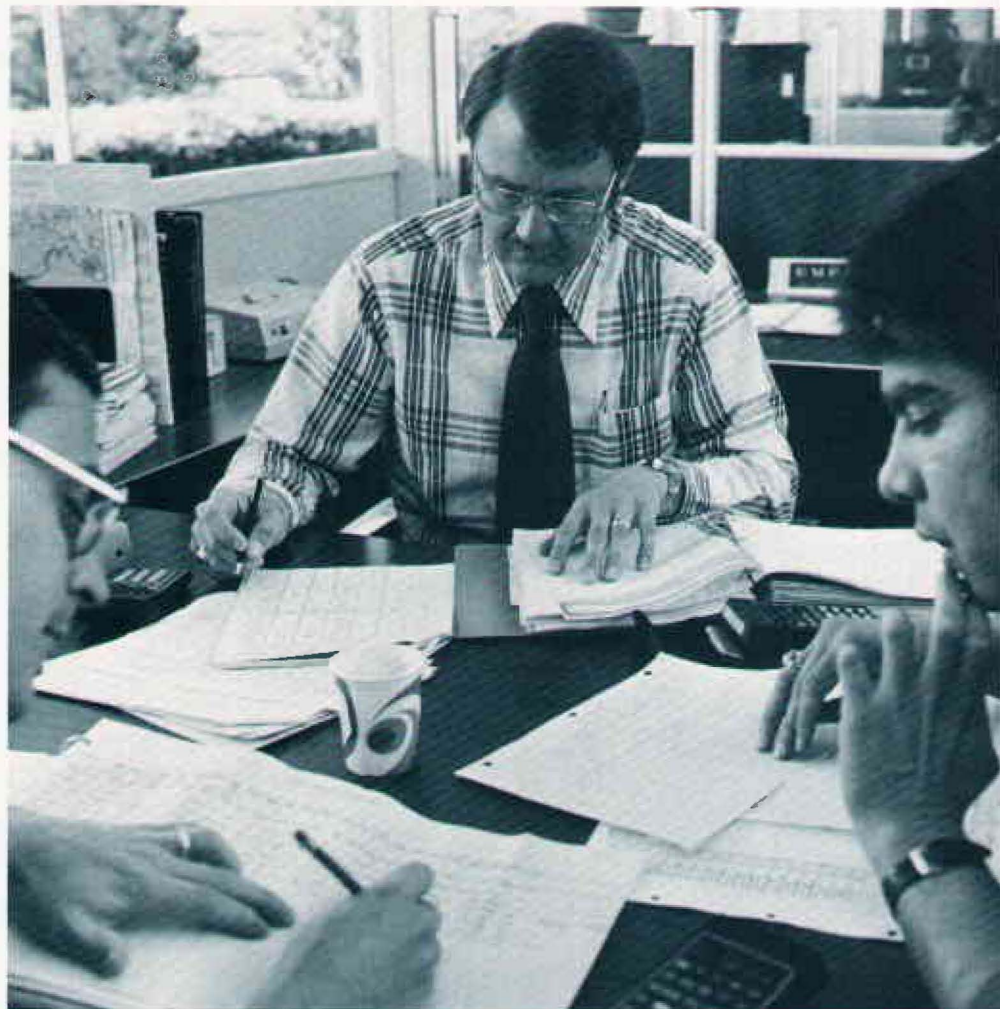
Cyril Yansouni, Santa Rosa R&D manager at left, confers with R&D section managers Doug Rytling (in foreground) and Jack Dupre.

Division marketing: The meeting of champions...

After you've developed a product, which comes next — manufacturing or marketing? Actually, you had better have some marketing action going on *before*, as well as during and after, the bringing out of a new product.

Al Steiner, marketing manager for Stanford Park Division, makes that clear in the following:

"New products are the lifeblood of HP but they have to make a contribution to our customers to be successful. One of marketing's most important responsibilities is to understand our customers' present requirements, to anticipate how they will change in the future, and to build this



Stanford Park marketing group ponders figures. From left are Ned Barnholt, product marketing support, Al Steiner, marketing manager, and Mike Cuevas, product manager for passive power measurement.

understanding in our R&D engineers. The ultimate responsibility for the division's product strategy belongs to R&D. However, in the Stanford Park Division where one of our product lines is used for receiver testing, market-need inputs are especially important. The "next-bench" method of product strategy definition alone is not sufficient. Our product marketing people, together with our engineering lab people, are deeply involved with our field engineers and customers, working to refine our understanding of future requirements.

"I'd say that our marketing department has all of the typical functions that need to be done in a marketing organization, at least in most instrument divisions. These functions include order processing and shipping, sales engineering and contract administration, service engineering, technical writing, publications, and advertising and sales promotion as well as product marketing.

"If I were to single out any of these as a starting point for explanation, I'd pick product marketing. The three product managers at Stanford Park Division really are the *champions* of their lines. While they don't have the *authority* to change many aspects of their products, *anything* that impedes their ability to bring a product to the marketplace in a successful way is their problem, and their *responsibility* to fix. So they tend to find themselves involved all over the division with finance, QA, manufacturing, and R&D, as well as outside the division with field engineers and customers.

"To introduce a new product, for example, the product manager will, with his people, have prepared the market plan, arranged the promotion, prepared the data sheet, provided the information and theme for news releases, advertising, and applications, as well as analyzed the competition.

"The product manager will also be in regular contact with his equivalent R&D section manager and manufacturing line manager. Together they become a 'triad'—a specific product management team that really is our basic division business sub-unit.

"Another thing the product manager does, for example, is to provide a sales

forecast. This ties in with the production master schedule prepared by manufacturing, and allows them to predict what they will need in terms of people, parts and facilities — to meet the demands forecast by marketing.

"The product manager also is responsible for recommending and reviewing prices. Especially at the initial pricing this involves a major analysis of the marketplace, our contribution, competition, profitability and our overall product strategy. This is one of the most important decisions made by a division.

"A positive interface with our field engineers is a very important element in our success. The purpose of sales engineering is to provide direct sales support to this field organization which is our major distribution system. We do almost no direct selling ourselves. The division sales engineers are here to provide answers for the field engineers, arrange for modification of products, change order status, provide quotations, provide training and competitive information, and support the field people by helping them solve their customers' problems with our products. Basically we help him make more effective use of his selling time.

"Keep in mind that there are a number of different HP divisions competing for the time of the field engineer, and how that field engineer feels about your particular line of products is often directly proportional to the support you provide. So, to a large extent, we look at the field engineer as *our* "customer" who will more strongly advocate our products if he receives good support.

"A lot of training is involved in doing that. We bring new field engineers in to introduce our products and technology, senior field engineers come in for seminars on our longer range strategy, and much new product training is done in the field offices.

"Another very important part of our business is product service support. This department works with the lab to set serviceability objectives, prepares and implements the service plan, and writes the service manuals. Our service engineers also

provide worldwide technical support to HP's field service technicians and customers on repair problems. We also have technical writers who know how to write service procedures so that they're easily understandable, even where English is not the primary language.

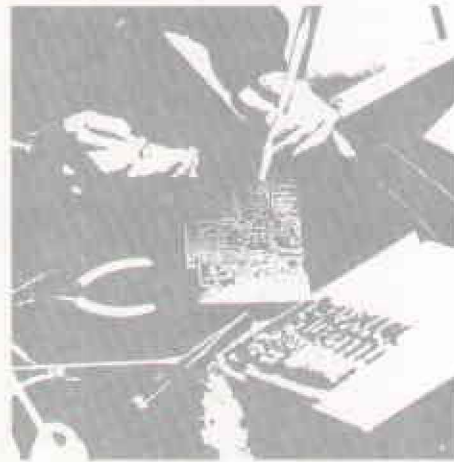
"Then there's the publication department which is responsible for getting things illustrated, typed, and printed — the data sheets, catalogs, service manuals and other published data. We made a commitment years ago that all products would have to be properly documented and supported by service literature *before* they go out the door. Publications, since it's the last to work on the piece of literature, is usually under tremendous time pressure.

"Finally, order processing and shipping is responsible for receiving customer orders from the field offices and making sure they get 'first-come, first-served' shipment by the date we originally tell them they will. They also manage our backlog and our finished goods inventory. That sounds simple enough, but in fact it's a very complex process of linking up with manufacturing and with the corporate HEART system. In all, they are responsible for handling something like 7,000 line transactions a month.

"My job is concerned with all of these things. But one area that I particularly emphasize is innovation in marketing. How do you innovate in product lines that are in a mature business, as ours are?

"Well, one thing is to look back at some areas that may have been somewhat neglected where you can make a contribution. For example, we discovered that a long list of lower-priced microwave test products weren't really getting much promotional or selling support. This became apparent when the Santa Rosa product lines split from us. These microwave test equipment items are the kinds that field engineers are not usually going to be able to spend much time selling individually because of the price. So, recently we launched a program of 'individualized' direct-mail marketing to select lists of customers provided by the field engineers. That's marketing."

Division manufacturing: “members of a team...”



How does a manufacturing operation cope with a large number of orders coming in for a wide variety of products? The potential for chaos is high. But, fortunately there are ways of dealing with it, as suggested by Dick Love, manufacturing manager at Data Systems Division:

“When a sales region sends us a customer order for a certain product, that doesn’t necessarily trigger its manufacture. Actually, we may have anticipated such an order, though not that specific one, and thus have it in the production pipeline. Or we may have to add the order to our backlog.

“The real key to our operation — to our ability to respond to an order — is the master schedule. It’s a basic document which is used for scheduling the production of products based on forecasted demand, order backlog and a desired delivery cycle. It is updated each month for the year ahead from forecasts prepared for us by Marketing based originally on field-sales quotas then modified as the year unfolds. We take these forecasts and by ‘exploding’ them in the computer can determine how many people we will need on a certain production line at a given time, and what parts will have to be requisitioned.

“Our bigger divisions today have become very complex. Not only do they pro-

duce many different products but many of those products are planned for integration into systems of our own and by other divisions. Trying to keep all of the various product strategies tracking together in the same direction would be extremely difficult if not impossible if we didn’t have some method of dealing with complexity.

“We actually call that method the ‘business team.’ Each production line manager is a member of a product-oriented team along with the appropriate R&D section manager and product marketing manager.

“The ‘team’ is the three people working together. It’s a sensitive, consensus sort of thing, with no one assuming permanent leadership though perhaps there are times when one is necessarily in a lead position. In turn, each of them reports to a functional manager so there’s also an overall division team.

“At either level, the team concept is particularly useful and active at the time new products are being introduced — which is just about all the time around



Dick Love, Data Systems manufacturing manager, amid computers nearing the end of Cupertino's assembly line.

here. Our best recent example was the new 2640A CRT computer terminal. It was brought along with a great deal of enthusiasm — and a lot of chances to make mistakes. But the teamwork prevailed, and we've had great success with the terminal — which may not have happened if it had been handled along traditional functional lines.

"The team concept serves more than just the needs of keeping things straight between departments. It's very important at HP that people be able to see and identify with the products they help manufacture.

"Let's look at a specific case — printed circuit production. Until recently, all PC loading was done in our centralized pre-fab area. In looking at their work, it was clear to us that it was difficult for employees in PC to relate to end uses or respond easily to production pressures. So, when the opportunity came up with the development of sufficient volume in the disc and terminal line, we made PC loading an integral part of those lines. The results have

been outstanding. Essentially, the people are doing the same loading tasks, but they are members of a team now and that seems to make a lot of difference in their attitude and enthusiasm toward the job.

"While we do work to a master schedule that attempts to put us in the right position six months and more down the road, some crystal-ball guessing is involved — and things don't always happen as planned. Recently, for example, it turned out that — because of the uncertain economic picture — a number of OEM mini-computer customers decided not to go to the expense of changing their systems designs. Because of that, we have continued to fill orders for the 2100 mini which we had expected to phase out in favor of the 21MX introduced last year. This has meant that we've had to ask the Penang plant to maintain the core memory stringing force that was scheduled to reduce along with the 2100.

"That tells you something about how we view our relationship with other divisions doing work for us. We consider

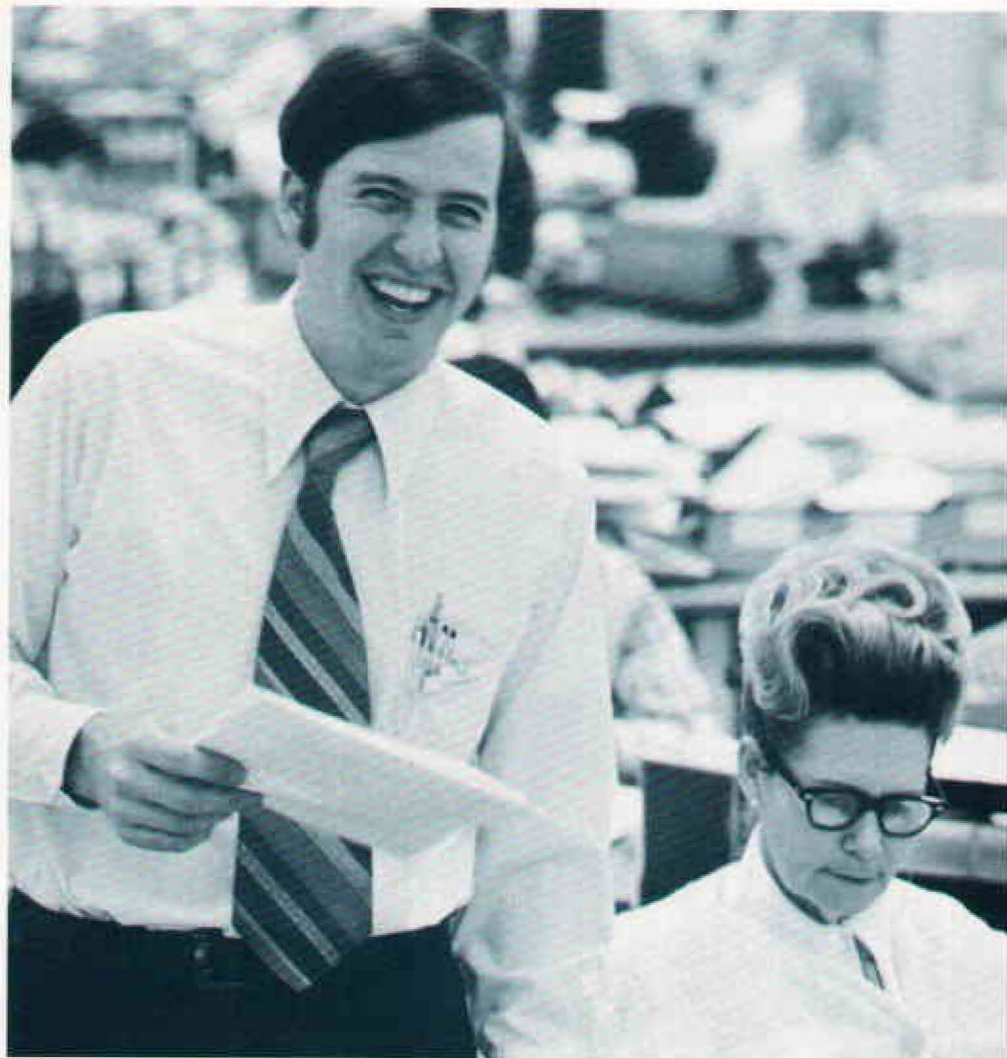
those people in Penang to be Data Systems people — a part of our direct labor — and we have a responsibility to keep the management and people there up to date when our actions will affect them. We also have very strong links with Boise, Grenoble and YHP.

"Let me add that just because we are a manufacturing department does not mean we lack opportunities to innovate. Actually there's a great deal of it at every level. For example, currently we are implementing a system using an HP 3000 computer system for internal order processing. This will be a system capable of handling all orders — from stand-alone instruments to complex systems. Its goal will be to make clear just what their earliest delivery will be based on the availability of component products furthest down the road in the master schedule. Waltham Division is in the process of implementing a version of the system and we expect it will be applicable in other HP divisions."

Division accounting:
“We must determine the true cost...”



*Don Schmickrath,
Santa Clara finance manager.*



Division finance departments perform indispensable services that enable other departments to plot a tight course month by month as they proceed toward their annual targets. Don Schmickrath, finance manager at the Santa Clara Division, describes this role:

"The finance department of Santa Clara performs a wide variety of tasks. Our functions might be divided into three areas: accounting, information systems, and office services.

"The most visible function is accounting. This function performs two related tasks — collecting and reporting historical data and projecting future information. General accounting is probably the most popular area in finance since the payroll section is responsible for each of our paychecks. In addition, general accounting pays the division's bills and keeps track of the 10,000 pieces of equipment at Santa Clara.

"However, the primary function of general accounting is the preparation of the division financial statements. These include the monthly divisional statement, the monthly and quarterly statements which break the facility into product lines, and the year-end package for reporting outside HP. These financial statements are very important to a number of people, beginning with the division manager. He

views it as a monthly report card with the knowledge that corporate is evaluating the division's progress. In addition, each of the division's functional managers uses the financial statements as his progress report on his performance. To make it easier for these managers to analyze their performance, we also prepare highly summarized reports which concentrate on highlighting deviations from target. We provide these critical data within nine working days of the month end — a significant turnaround time compared to many other large companies, which often run a month behind.

"Our next major area is cost accounting. Here we determine the actual cost of existing products and also forecast their cost to build in the future. Projecting costs in the future has always been difficult; however, with today's inflation, it's even tougher. In this division, we have over 20,000 parts, and each one can have substantial swings in price. You cannot just average the price increases. In order to help marketing determine the correct price for each of our products, we must carefully identify the specific cost to produce each one.

"At the end of the year, we must determine the true cost of all products shipped during the year. With the assistance of almost every employee in the manufacturing area, we take a physical inventory and determine its value. Since we know what we purchased, and now know what's left, we can accurately establish the cost of our sales and make minor adjustments to financial statements.

"In addition to providing costs on existing products, we're responsible for generating estimates on the costs of new products. We try to arrive at a price for a new product at the time it is emerging from the lab. We start by costing the parts used in the prototype and obtaining estimates of the amount of labor required to do each operation, attempting to be realistic and reasonable. Here cost accounting acts as a buffer between the marketing and R&D areas, which tend to be optimistic, and the manufacturing department which

must ultimately build the product and tends to be pessimistic concerning costs. Introduction of new products is always a major concern to the division. If the price is established incorrectly, it can cause us to introduce a product that will not be profitable or to drop a product that would have been profitable. We obviously can't afford to make either of these errors.

"Next, I'd say that one of our most important functions — one that isn't visible on an organization table — is internal control. When you have something like 5 million transactions, representing \$60 million per year flowing through an organization, you must establish a set of good checks and balances to make sure you know where it all goes. Considering that the difference between our accounting books and the physical inventory at year-end is negligible, our internal control has been satisfactory.

"The second area under the finance umbrella is the information systems department. Accounting has traditionally been the largest user of computer systems at Santa Clara; however, the division is making a concerted effort to expand the use of the computer to other applicable disciplines.

"Systems has the responsibility for developing new computer systems, including the design, documentation and interface with the users. In addition, the existing operating systems usually require key-punching, control, and some interface with BAEDP which our systems department also performs.

"There are a number of other service functions that sometimes report to the finance department. Within the Santa Clara Division, the office services department is the third such area. Office services performs the important functions of telephone installation, paging system, telephone operators, distribution of office supplies and mail, the travel department, the purchasing and maintenance of office equipment, and petty cash disbursement.

"Overall, finance is a pretty broad umbrella — very much involved in the basic business of the division."



Personnel departments are there to help people and departments solve certain problems so they can get on with the job. But it's not a case of "fixing up" those problems explains Gary Ruppel, personnel manager of HPA Division:

"Look at it this way: If we attempted to fix peoples' problems then they probably would come unfixd again rather soon. A problem is really solved only when people understand the nature of the problem and agree on a solution. So at HP the fixing has got to be done between the supervisors and their people. We're here to provide some professional 'third-party' assistance when it's needed. Support really is the key role of an HP personnel department.

"Let's start with employment. We don't do the hiring. Supervisors make that decision. The same with recruiting—technical people are the best judges of technical talent, although we can help them in other respects.

"Again, while wage and salary reviewing takes up a lot of my time, the final decision in this area is up to the supervisor. We can provide data relative to how a job category compares with the industry at large or across functional lines within HP. But the supervisor is the one who must evaluate the relative merits of the individuals. This is one area in which we get a lot of feedback in the form of ideas about new and different methods of com-

Division personnel: To listen is to learn...

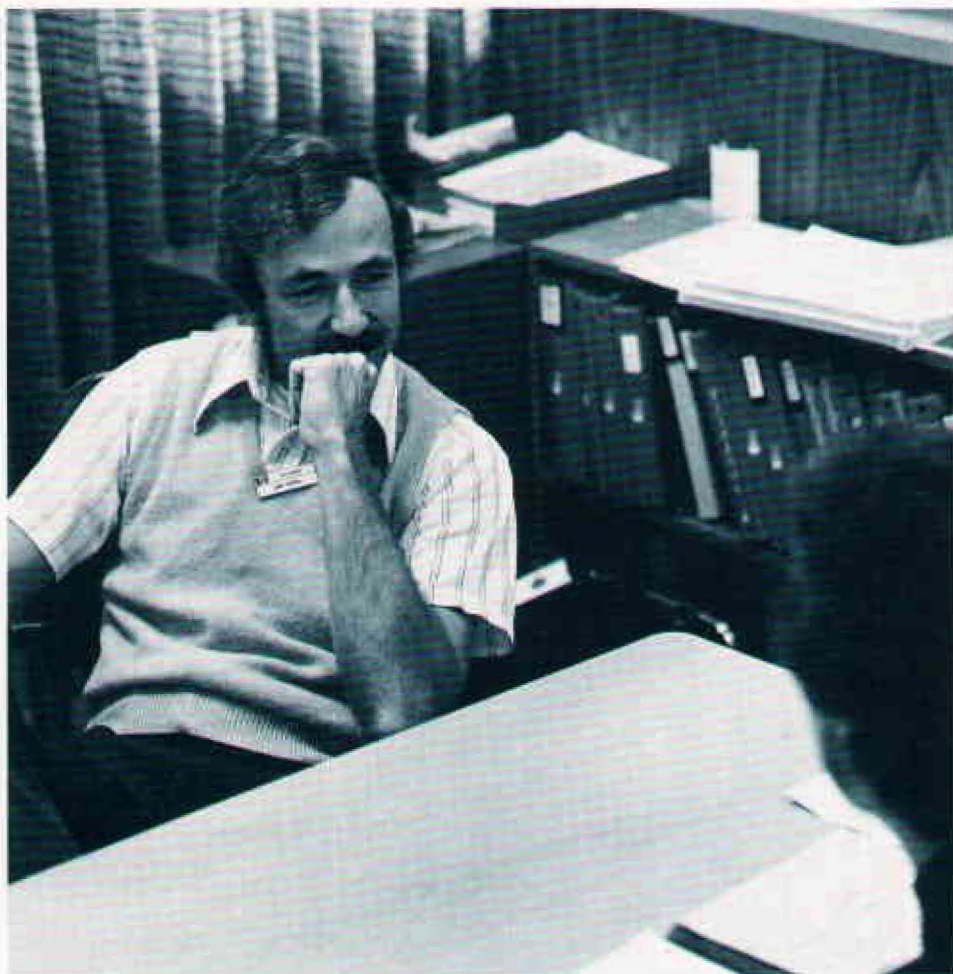
pensation and benefits. We pass this along to Corporate — which does take notice, as witness the response to the payroll changes last year.

"Now let's look at 'Affirmative Action,' a program whereby industrial organizations undertake to go beyond the letter of the law in support of community objectives such as the employment and development of minority people. The administration of this area in a division our size can easily take one person's entire time — monitoring the activity and maintaining the necessary records. But real affirmative action can only be generated by HP people on the job, starting at the first level of supervision.

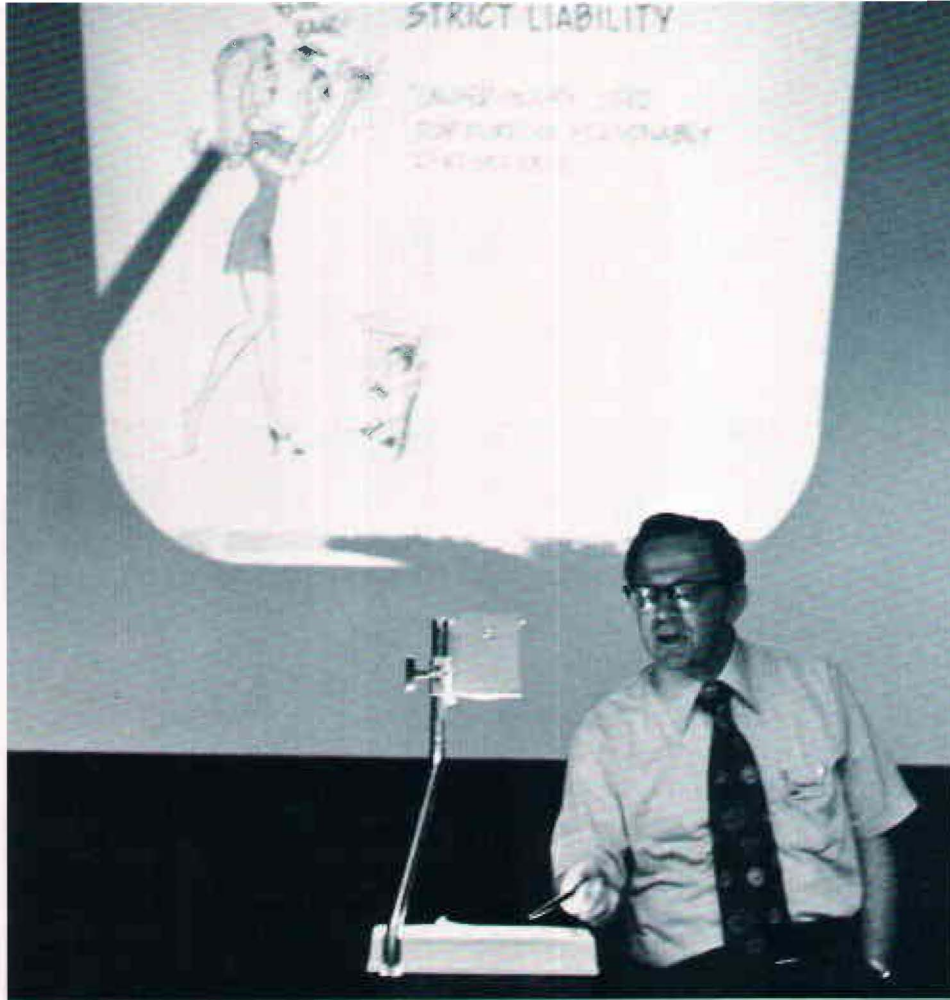
"Training and management development are in the same boat — supervisors

have the basic responsibility for encouraging people to prepare themselves for future opportunities. We are a resource here — though we don't always respond simply by demand, but we do have some special experience to offer and we do initiate programs that we think will expand the opportunities for development drawing from corporate efforts and those of other divisions.

"Probably what we seem to do most is listen. And I would say that of all the roles we play that listening and counseling are the most important in maintaining the HP way of doing things. Because if you turn yourself 'off' to people, then you're going to lose credibility. You've become an adversary—or even worse, they'll think you don't care."



Gary Ruppel, HPA personnel manager, is "in" and listening to Mark Hodapp, optoelectronics applications engineer.



Mort Levin, product safety and performance reliability manager at Waltham, discusses legal liability aspects of medical business for audience of HP quality assurance engineers in Palo Alto.

Division product quality: Taking a customer's viewpoint...

Product quality is everyone's business at HP — or should be. But, before a product is shipped out the division door, someone should test it as customers do — knowing their needs and expectations. Such is the role of HP's quality assurance departments.

How they are organized to do that is described by Mort Levin, Medical Products Group, who heads the Product Safety and Performance Assurance Department for the Waltham and Andover medical divisions:

"All of the divisions in HP have the same functions to perform when it comes to quality and performance of products. But medical products — especially those in life-support areas as a number of ours are — are looked at very critically, require a high degree of tolerance to abuse, must be reliable, and are affected by government actions beyond our control.

"For example, our safety and reliability group is concerned with the complex problems of industry standards, regulations, liability, clinical field evaluations, design review, environmental testing, and overall reliability. It's virtually certain that more and more government regulations and procedures will be enacted in the near future affecting what we can and must do in these areas.

"Reliability is being stressed by the medical profession now. Within HP it is being approached on a company-wide basis coordinated by the Corporate Engi-

neering staff. Reliability is directly related to HP's first two corporate objectives — generate the highest profit level consistent with our other objectives and provide products and services of the greatest possible value to our customers. In our own case, we do stress an environmental testing of medical equipment and plot the probabilities of failure. The goal is to make our people aware of potential problems so they can take the necessary action in the factory instead of letting problems happen in the field. Doctors, after all, are interested only in the output of our equipment. They expect it to operate no matter how they treat it.

"The department we call 'Quality Assurance' is the one that audits our manufacturing functions. Auditors sample the manufacturing and production areas and work closely with the supervisors in reviewing errors and problems that are discovered. These auditors have a real feel for the needs of customers, and conduct tests that a customer is likely to make rather than always copying the tests made by the production-line test technicians. They are not there as law enforcement people looking over everyone's shoulder, but are members of the team providing products of the highest possible quality to the medical profession.

"Actually, people want to do a good job. They are proud of their work — and want to keep things going right.

"We have other functions that may not be typical of QA departments. We must be able to recall products if potentially hazardous problems are discovered. We are also responsible for materials engineering. Additionally, the materials engineering group is responsible for incoming inspection. This provides for a tighter feedback loop on the quality of our components.

"The overall performance loop is closed by going into the field and talking with our customers. They tell us how it really is."

HEWLETT-PACKARD CORPORATE ORGANIZATION April, 1975

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International Sales and Europe: Dick Alberding, Managing Director — Northern Area: Fred Schroeder • Southern Area: Doug Herdt • Germany: Eberhard Kno Intercontinental: Alan Bickell, Director — Asia/Africa: Lee Ting • Australasia: John Warmington • Brazil (Manufacturing): Guente

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Brazil Guenter Warmbold	Singapore Tom Lauhon	Scientific Instruments (Palo Alto, California) Ed Truitt
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...uch • United Kingdom: Dennis Taylor

Warmbold • Japan: Kenzo Sasaoka • Latin America: Marc Gumucio • Southeast Asia: Tom Lauhon



HP'S BASIC BUSINESS UNIT or "triad" is exemplified by this threesome at South Queensferry — a manufacturing manager (Peter Carmichael, left) a marketing manager (Tim Brameld), and an R&D manager (Bob Coackley). In this case, the three business partners — which is essentially what they are — are shown discussing certain features of a prototype instrument to be used for analysis and error detection on pulse-code modulated telephone systems. According to Peter Carmichael, who recently became general manager at the United Kingdom plant while continuing temporarily as head of manufacturing, the new unit will be sold in a "fiercely competitive" price market thereby requiring the triad to work with extra care in controlling costs.

Behind the organizational scene...

WORLD HEADQUARTERS for a division doing worldwide business is this small conference room at Loveland Instruments Division. Here, on one of those rare times when all three are not traveling, Dick Lubinski, LID International sales manager at right, and Carlos Oyarzun, left, and Glenn French, respectively the sales engineers for Intercon and Europe, discuss new aspects of their far-ranging responsibilities. Among these is the new team of LID marketing-support representatives at Boeblingen. Headed by Wolfgang Flender, the team provides localized sales, service and LID product support to European field engineers. Lubinski's department also provides some interface on overseas production of transferred LID products.





DIVISION REVIEWS are an important means of making the product development plans of the divisions visible for top corporate management review and support. Up to a full day of presentations and discussions may be required to brief the management team. Above, Dave Packard and Ralph Lee listen as Santa Clara R&D people explain a new project.

FACTORY MAN IN THE FIELD is George Tibaldi, left, manager of the Eastern Training Center at Rockville, Maryland, on behalf of Data Products Group. With George is Malcolm Wiseman, Training Center hardware instructor. Last year the center was host to almost 1,000 tuition-paying students from customer organizations wanting their people trained in the use of HP computers and systems. Tibaldi also functions as technical consultant to the field engineers and regional sales manager of Data Products.

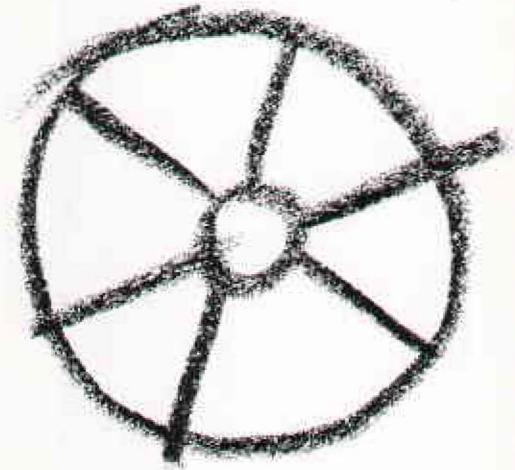


"OUR REPORTING RELATIONSHIP has certainly changed," says George Tamaki, Instruments service manager in Eastern Sales Region, "but first and foremost we still report to the customer." The change George refers to concerns the recent integration of the field service people within the six product groups. George formerly was region service manager, reporting to the region general manager.



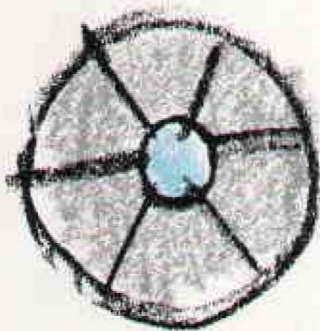
WHILE FUNCTIONING INDEPENDENTLY to represent customer expectations for product performance, HP product safety and quality assurance departments work on a strong team basis with other departments in solving quality problems. Here a medical instrument is given a punishing drop test at Waltham Division under observation by (from left) John Sherwood, reliability engineer, Paul Sullivan, production line supervisor, and Tom James, production engineer.

Inside an HP sales team



In many ways selling is a very distinct activity. And the typical Hewlett-Packard selling organization — in spite of a strong and direct connection with the factory organization — has a configuration of its own.

We begin to represent this by drawing a circle and coloring the encircled area blue. This will stand for the sales administration — the regional managers, country managers and their staffs. The blue indicates their relationship to the corporate organization, as shown in the big chart.



Now we'll surround this circle with a ring subdivided into six parts, shading them grey, — these are the field sales forces of the six product groups.

Clearly, the “blues” provide an inner core of support, while the “grays” face out on the wide world of customers. To discover how this really works, let's hear from some participants, specifically some members of the Eastern Sales Region:

Field sales Getting the order



The job of selling and servicing the more than 3,000 products offered by Hewlett-Packard is entrusted to regional and country teams of field engineers. These teams share much in common: offices, services and policies. But when it comes time for selling or servicing, each becomes the long arm of one of the six product groups and its various factory organizations. How that happens is discussed by some of the field sales and service people of the Eastern Sales Region:

Paul Guercio, manager of ESR's Instruments sales and service force, noted that on a direct line basis he reports to the Instrument Group in Palo Alto. "My job is to make sure we have a sales and service force in the field able to implement the marketing plans developed by the group organization and the divisions, and to meet the needs of our customers. To provide strong local management, the ESR Instrument team is divided into northern and southern areas whose managers report to me. The two areas are subdivided into

(continued)



Field sales

eight districts whose managers report to their respective area instrument sales managers, Tom Strasser and Al Kennedy.

"If that looks like the old chain of command, with everything funneling up to me, across to the group then back to me and down again — that's not the way it works. For the greater part of their activity, the field engineers will be in contact with the divisional sales engineers, and the district managers will be in touch with division sales managers — and so on. They have a direct working relationship with factory people who can give them answers. I'm here to provide and manage the human and material resources required to get the selling job done.

"I'm involved in targeting to the extent of defining for the group the dollars needed by the Instruments sales force to get the job done in this region.

"While reporting to the 'west coast,' I still have a strong working relationship with Rick Weaver, the region manager. I see his job as an extension of the office of the vice president of Marketing, that is, providing the local business and corporate

environment for the operation of the sales force. Our job is the actual selling — the closing of orders, and the service that follows.

"One of the most important steps taken recently was to consolidate the service organization with sales — in other words, to 'verticalize' customer service which previously had all been pooled under the regional structure serving all sales forces. Now the Instruments sales and service people are part of the same team. I think this will be a major benefit to the service people themselves in terms of their identity with the selling organization, and our customers.

"Looking at our organization from the field engineer's point of view, there are great opportunities for full professional development. The Instrument product line covers most of the significant areas of electronic measurement and instrumentation. As a result, the F.E. is able to offer a broad line of effective solutions to his customer's measurement problems. He is truly looked upon by the customer as 'Mr. Hewlett-Packard'."



Dick Bryden, District Sales Manager for Instruments in the Paramus, New Jersey Office, heads a team of seven field engineers and two staff engineers. He noted that "field engineers by nature and training are usually very organized people. I'd say that 80 to 90 percent of their business is done on a direct basis with the division sales people. My role is quite straightforward; I spend much of my time with our customers and field engineers. I must know our customers, the instrument product line, and the capabilities and performance of my field engineers. Since the district is the basic selling team, my job is to be the nucleus and the leader of that team."

Carlos Perez, Instruments Group field engineer in the Rockville, Maryland District Office, describes the field engineer's role as "a complete measurement specialist. We have over 2000 different instruments to sell and can solve the customer's measurements problems most of the time. We rely heavily on our regional and application engineers back at the factories for technical and competitive information.

"Flexibility is very important in this job. We need to know what is going on in the whole HP organization — because our customers want to hear what HP is doing. Since the instrument field engineer probably calls on many of the customers more frequently than the other disciplines, he is expected by the customers to have a "feel" for HP's total activity. Our regional managers are very aware of this, and Paul Guercio, for example, makes sure we hear what's going on in the group and corporate organizations. Another way of finding out what's happening within the different divisions is getting together with the other discipline field engineers informally in the office."



Felix Balmaz, Computer Systems field engineer in the Rockville, Maryland Sales Office, points out that the "typical" HP field-factory interface does not apply in the same way for Computer Systems people: "Because of the nature of our product support requirements, most of our sales support and customer services are part of the field organization. This includes pre-sale systems engineers whose job is to provide technical review and applications support, customer engineers who provide such support as software debugging as well as bench repair service, and training centers for users and potential users of our equipment.

"One basic reason for this is that there's no way a Computer Systems field engineer can have the background to han-

dle a high percentage of customer requests, many of which are complex and specialized in their field. Hence the need for both strong factory and local support."

Sales region administration

Creating a selling environment...

Now that the responsibility for actual field sales and service is held by the various product groups, managing the administrative affairs of a regional sales organization must be relatively easy, right? Judge for yourself as representatives of the Eastern Sales Region describe how they perform their roles:



Rick Weaver, ESR general manager:

"What we're trying to do in the region administration is provide the optimum environment of support for the sales forces. The activity before the order comes in the door and the follow up until the product is delivered and our money is collected, is extensive. These activities should be organized to require the minimum involvement of our field engineers and allow them to get on with their job of selling.

"For my part, I try to spend as much time as possible with the sales people in order to understand their concerns and plans for the future. If there are any problems on the horizon, that's the quickest way to spot them.

"But my involvement in sales probably is greatest when there are continuing or unresolved problems. Most of these occur as a result of the interplay between the product groups — gray areas if you will. It's not usually what you'd call real trouble, because these are all great people — dynamic and devoted to the task of getting an order. But the interaction does generate situations that need to be ironed out before they create problems for our customers.

"Yesterday, for example, I went to call on a customer in New York. A big order was involved, and normally I would only be on the fringes of the action — though very interested. But a kind of impasse was reached, and the customer wanted some special reassurance about the company and our ability to meet his needs.

"So that's how I spent the afternoon. In the evening I attended a trade association meeting in New Jersey and touched base with a number of customers I've known for years.

"That kind of outside contact is important because some of the people involved are key managers of our larger accounts.

"The regional manager is responsible for the asset management of the region. These are made up primarily of receivables, inventory and physical plant. By far the most important and toughest job is

managing receivables, particularly in today's economic environment.

"We spend quite a bit of time and effort in the total planning of the region to accommodate the growth in sales. Where is the growth going to occur? Where should we locate new offices? What are the specialized needs of a discipline? What should we plan for in the way of people? How can we improve the efficiency of our support systems without deteriorating customer service? Those are some of the questions we deal with.

"Perhaps most important in the long run is representing the interest the company has in its people and insuring that we are an HP operation in everything we do."

Bill Carlton, ESR administration manager:

"Administration is concerned with tying together the non-technical support functions that are not under personnel or operations — principally the accounting and financial reporting, order processing, credit and collections, information and communication systems, sales finance, contracts and also, service administration, which includes repair order processing, parts inventory control and service contracts.



"It's important to remember that the everyday conduct of many of these activities is performed in the area and branch offices. The region office administration department coordinates and backs up the branch and area office support people. For instance, in service administration, a manager in our region office is in frequent contact with the area offices to insure consistency and to see that they get prompt, accurate answers to their questions. He also funnels to them any new information from corporate headquarters.

"Our major contributions to the field sales force are direct operating support and financial planning and analysis. We format and transmit customer orders, handle the invoicing and collection, and take care of related paperwork associated with various types of purchase agreements. Also included under direct operating support is the scheduling of consignment instruments for demonstration use.

"We also help the sales forces determine their cost targets and capital budget requirements, and regularly report on their actual performance. And we provide sales management with a variety of quota performance statistics.

"Administration performs a number of necessary housekeeping functions for the sales forces, too, the most noteworthy being the payroll.

"To the manufacturing groups and divisions, perhaps our most important role is that of financial reporter. Field selling costs are important items in the income statements of the manufacturing groups, and we provide them with the data they need.

"Administration's direct responsibility is to the Eastern Sales Region manager. However, there is a strong functional tie to the corporate and group finance functions, and much daily communication back and forth."

(continued)

Sales region administration



Bill Olson, personnel manager for the Eastern Sales Region:

"The responsibility of the sales region personnel department is similar to that of a manufacturing division; however, a manufacturing division is a geographic entity with short communication lines, whereas the Eastern Sales Region has 15 offices of varying size, spread out over the northeastern United States. The communications and logistics problems are much more complex and difficult.

"When you are near the end of the line — that is, in a small sales office on the East Coast, with little corporate visibility in the community and with little day-to-day contact with the major operating portions of HP, it is sometimes hard to feel like part of the big picture. Helping the people of ESR feel that they are a part of an important team with vital functions and responsibilities within the corporation is a very important part of the job.

"Another role that I think is most important and the one that gives the greatest satisfaction is assisting managers, supervisors, and employees around the region in meeting their objectives. We help by assisting them in finding people, in counseling, or with development and training programs.

"Helping people around the region requires the use of a variety of communication methods; our shuttle between offices for correspondence and equipment as well as the telephone tieline on the east coast handle the bulk of the load. We use the TWX machine or telecopier to get announcements out quickly to our outlying offices. The region also has an internal publication, the Tie-Line East. Its goal is to provide a broad communications tie among the many people and offices. Of course, the most effective means of communication are the personal visits made to the various offices by members of the personnel department. These visits, whether they are for an employee orientation, training program or recruiting trip, allow us the opportunity to sit down and talk to people. As you can see, we have a number of ways to overcome the barrier of distance, and each one is used when it is the most effective for the situation."

Vince Macrina, ESR operations manager:

"You might describe me as the regional landlord — but it goes beyond that.

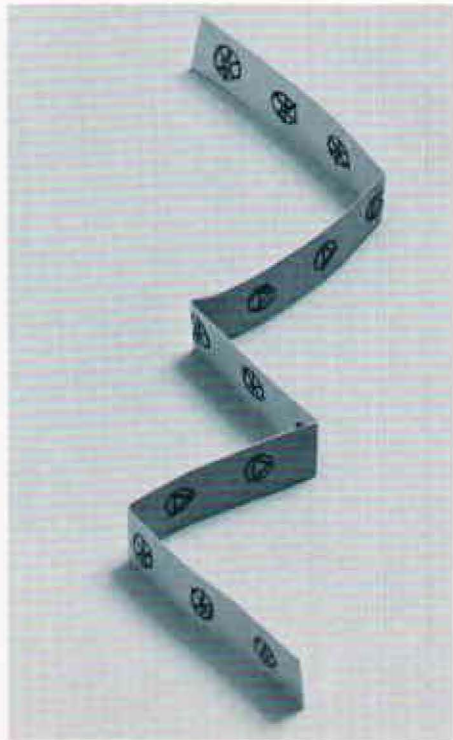
"Basically, I'm responsible for coordinating the building or negotiating the leases of 15 sales offices and facilities in the region, including some space we provide International and the Medical Distribution Center in both Paramus, New Jersey, buildings. In all, we have more than a quarter of a million square feet of floor space within the ESR.

"It is the job of operations to provide the telephones and communications facilities, to operate the switchboards, the mail service, shipping, receiving and purchasing departments, the inter-office 'shuttle,' and building maintenance and security.

"The sales fleet is a big responsibility. The region now operates almost 400 cars. We arrange their purchase and upkeep, and operate the repair and maintenance centers at Rockville, Paramus and Lexington. Our goal is to keep the field engineers and service technicians on the road and in touch with our customers."



Working together



Now that we've looked at the basic geometry of the product division and of the field sales team, and heard how one relates to the other, one may now ask: How do they all work together? That is, how is a high degree of common direction, style and accord achieved among more than two dozen factory teams that market their products through 30 sales organizations doing business in more than 100 countries?

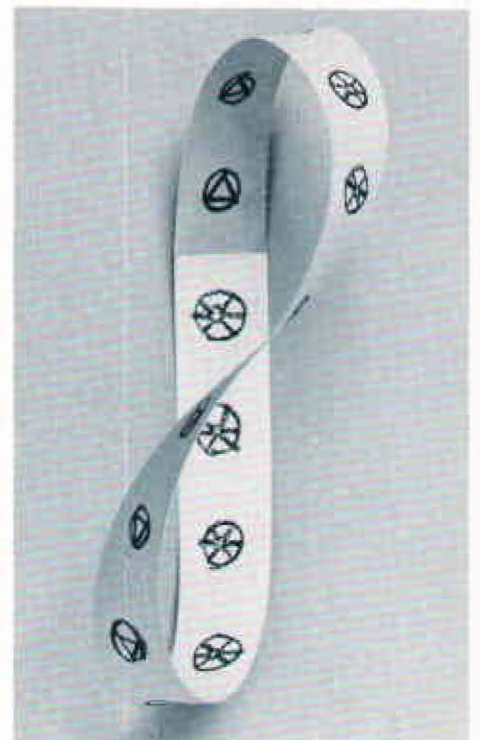
There may be a way of looking at this question geometrically.

Start with the fact that at one time -- up until six years ago -- the HP manufacturing and sales organizations operated more or less independently of each other. To represent this, take a strip of paper and draw a series of ⊙ (factory) on one side, ⊗ (field) on the other. That's the way it was. The factories stayed on one side of the fence, hoisting their products over the wall for the sales people to sell as best they could on the other side.

To see how it works today, twist one end of the strip 180 degrees and join it to the other end. After exploring that figure, you might well ask: Whatever happened to the other side? How did all of those organizations end up on the same side of the fence?

Math heads and puzzle buffs will recognize the figure as that topological teaser, the Möbius strip whose unique surface properties seem to defy two-sided logic.

The point is, there is no other side. The factory and field teams have become a continuum, and a further bond formed through the product groups. There is some danger at this point of over-simplifying and over-extending such geometric analogy. The fact is, HP is a downright complex organization. Yet within that complexity is an environment offering great flexibility and opportunity for HP people and the organizational units they work in. How it all works together is discussed by some of the people who have the job of organizing its overall workings:



(continued)

The product group's role

Bill Terry, vice president and general manager of the HP Instruments Group.

"In the late sixties it became increasingly clear that HP was asking the field sales engineers to perform a heroic, but almost impossible task, namely selling and understanding the increasing breadth of the HP line of products.

"As a first step in easing this situation, certain natural distinctions were recognized in the products themselves and the markets or customers' interests. This resulted in a process called 'segmentation' which identified portions of the HP sales force with different product groupings.

"At the same time, the factory organizations were themselves beginning to exhibit more and more complexity. They were reaching out into worldwide markets by such arrangements as "parallel" pro-



duction and joint venture R&D with the international divisions, and there was a steady increase of new product lines and new customers. This resulted in a need for the corporation to give more attention to the divisions, the key tactical unit of HP, to assure the right balances of investment and performance, and to avoid duplication of effort.

"In 1969/70, the manufacturing divisions were brought together into product groups that paralleled their product interests at that time. Since then, there has been growth in size and breadth of product interest, especially in the electronic and data products groups. Our latest evolutionary step has been to preserve this group structure and expand it once again to six product groups.

"The functions of these six product groups are similar though there tends to be some differences in emphasis. For example, I like to think of the Instrument divisions as sections of an orchestra, each capable of giving a strong solo performance with their own instruments, but following the same score as far as customers, market needs and technology are concerned. Some of the other groups have a greater need for inter-division product interfacing, such as computers and medical with their system emphasis, hence more overall product strategy may be decided at the group level.

"An Instrument Group staff helps manage our responsibilities with emphasis on marketing, finance and engineering.

"The marketing function is basic. Our responsibility for the field sales force is direct; the regional and country sales managers for Instruments are our instrument division's principal representatives to our customers. Responsibilities for management of the instrument service program is a new challenge for '75.

"Finance at the group level is very much a matter of performance measurement, communication and adherence to corporate policies, developed at the corporate level, as well as direction and communication to the divisions in financial areas where new ideas and new techniques can yield better results. Each month we use the division's facility financial statement (Loveland, Santa Rosa, etc.) to determine how the group as a whole is doing, as well as how the individual divisions are performing. Product line statements (i.e. digital voltmeters, spectrum analyzers,

pulse generators) are equally important, giving us the opportunity to evaluate the relative contributions of the various product lines and as a basis for deciding where and what level of investment and support will be needed for the future. The monthly review is usually quite informal with a lot of it done by phone. Each quarter the three months to date statement forms a basis of a more formal review, usually held in each division's facility. At this review, besides judging short term performance, we forecast the balance of the year and determine major changes in direction when required. But, all of them result in a great deal of useful contact between HP management and the key management of each one of the manufacturing divisions.

"At this time of the year, for example, we are working to update our IRPs — intermediate range plans. This is a form of planning and negotiation between the divisions and the groups. The purpose is to reach agreement as to what are the important elements of our business strategy and the investments needed to meet certain goals of the divisions for the next three to four years. The corporation then looks at all of the IRPs and another process takes place that results in broad targets being set for the groups that will enable the company to meet its overall performance targets. This is probably the single most important process we undertake on a regular basis, because it sets objectives and priorities — both upward and downward — for all parts of the company.

"Engineering considerations are very important in arriving at some of the decisions required by this process. What kind of engineering investment will such-and-such a project require? How do the qualities of the product contribution ideas compare? Can it benefit by work done or underway in any of the other two dozen product lines in the Instruments Group? How are the divisions going to manage — or share — the integrated-circuit facilities that are becoming more or less standard within the larger organizations? Can other resources — other groups, HP Labs — be applied? Those are the kinds of questions that a group engineering manager will be interested in.

"Where other key functions are concerned, such as personnel, legal and financial policy and international conduct, it's my view that these are better handled within the appropriate Corporate Staff depart-

ments. In this way, all of the groups can share these services and speak in one uniform voice for all of HP.

"Of course, a tremendous amount of direct contact and communication and decision making goes on among the divisions that never reaches the group level. The more decisions that can be made at the first level, the better the quality and dedication for follow through.

"There also is a lot of contact across group lines, between similar functional departments — basically exchanges of information and ideas. It seems to me, in fact, that just about every identifiable function has a newsletter or seminar going for those purposes. I'm all for that — so long as it helps get things done."

International's new look...

Bill Doolittle, vice president and general manager of HP's International organization, recently outlined changes that will have a significant effect on the reporting relationships of the international manufacturing and sales organizations. The corporate chart on pages 16-17 reflects these changes, but some explanation in Bill's own words may be useful:

"We've restructured the international organization a number of times and in a number of ways over the past fifteen years. Most of these were done within the framework of the international structure itself, until a few years ago when the field sales teams within the country organizations were 'verticalized,' becoming integral parts of the various product groups.

"Now we're in the process of completing that step by integrating the international factory organizations within the appropriate product groups.

"The effect of this is two-fold. First, it will give the product group general managers total worldwide responsibility for the manufacture, product development, marketing, and profit performance of all of their group activities. Next, the remaining International organization will have a role

that in most respects will represent an extension of the full range of corporate staff services.

"Let's first see how this will work in Germany, our furthest developed international organization. HP's first overseas direct sales and manufacturing facilities were established there 15 years ago. We currently employ nearly 1,600 German people, and the manufacturing facilities are involved in producing from five products groups — Medical, Instruments, Analytical, Calculators and Data Products.

"Our plan is to reorganize the German manufacturing operations into five units reporting directly to the various product groups. Several of them already support R&D efforts that have brought out proprietary products for which they have worldwide responsibility. In time it is likely that some of these manufacturing operations will attain full division status within their product group.

"In addition, a corporate German office will be established under Eberhard Knoblauch to provide the manufacturing operations and the German sales activity with the same range of corporate services that the U.S. divisions and sales regions receive from Palo Alto.

"In the United Kingdom, manufacturing at South Queensferry will report to the Instruments Group, with Peter Carmichael as general manager. Dennis Taylor, meanwhile, will move to the Winnersh headquarters where he will take on a dual role — first as managing director of HP Ltd., similar to Eberhard's role in Germany,

and, on an interim basis as manager of the UK sales region.

"The situation in France is more straightforward. The Grenoble Division is already dedicated solely to computer products, and therefore will report directly to Paul Ely's Computer Systems Group.

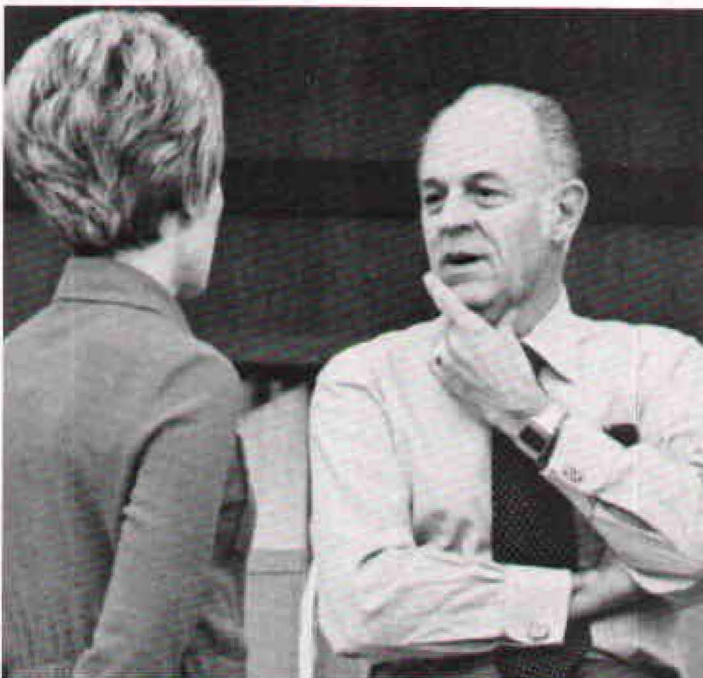
"The Southeast Asian facilities will become members of the Components and Calculators groups under managers still to be named. Tom Lauhon then will serve in the corporate role as managing director of our Southeast Asian operations.

"HP Brazil manufacturing will be similarly structured, with general managers representing the Medical Products and Calculators groups, and with Guenter Warmbold having overall manufacturing facility responsibility.

"YHP, our manufacturing joint venture in Japan, is organized somewhat differently than our other worldwide manufacturing operations, and does not so readily lend itself to direct product-group reporting. For the present, therefore, YHP will continue to report through Intercontinental Operations.

"It seems to me that all of these changes will bring about a clearer definition of responsibility in our international operations as well as a better balance of authority and responsibility.

"I might add that in addition to its corporate representation overseas, International will continue to be responsible for the legal performance of our international subsidiaries, and for pioneering in new international areas of opportunity."



Working together

Freedom of action

Bob Boniface, vice president, Corporate Administration:

"When you look at the organization chart it really strikes home how much of a load Bill Hewlett was carrying before the restructuring last Fall. All of those Corporate Staff departments as well as the Groups and HP Labs reported directly to the president's office. The restructuring was designed to relieve much of that pressure, and to develop an Operations framework that would give real cohesiveness to the Group structure as well as a means of resolving potential problems between groups.

"Of course, a major advantage is that Bill and Dave now can spend more time looking at the longer-range aspects of our business. Some of that is reflected in the fact that Bill has the forward planning functions of Corporate R&D and Corporate Development reporting directly to him. As he has said: The character and strength of our R&D will in large part determine the future of this company. So that is where more of his attention is being concentrated.

"Corporate Administration was created as a way of coordinating the multiple staff functions and making them more effective in serving the needs of the Corporate Operations as well as the Groups and division management.

"In my estimation the new organization plan has been very effective in getting a number of things started.

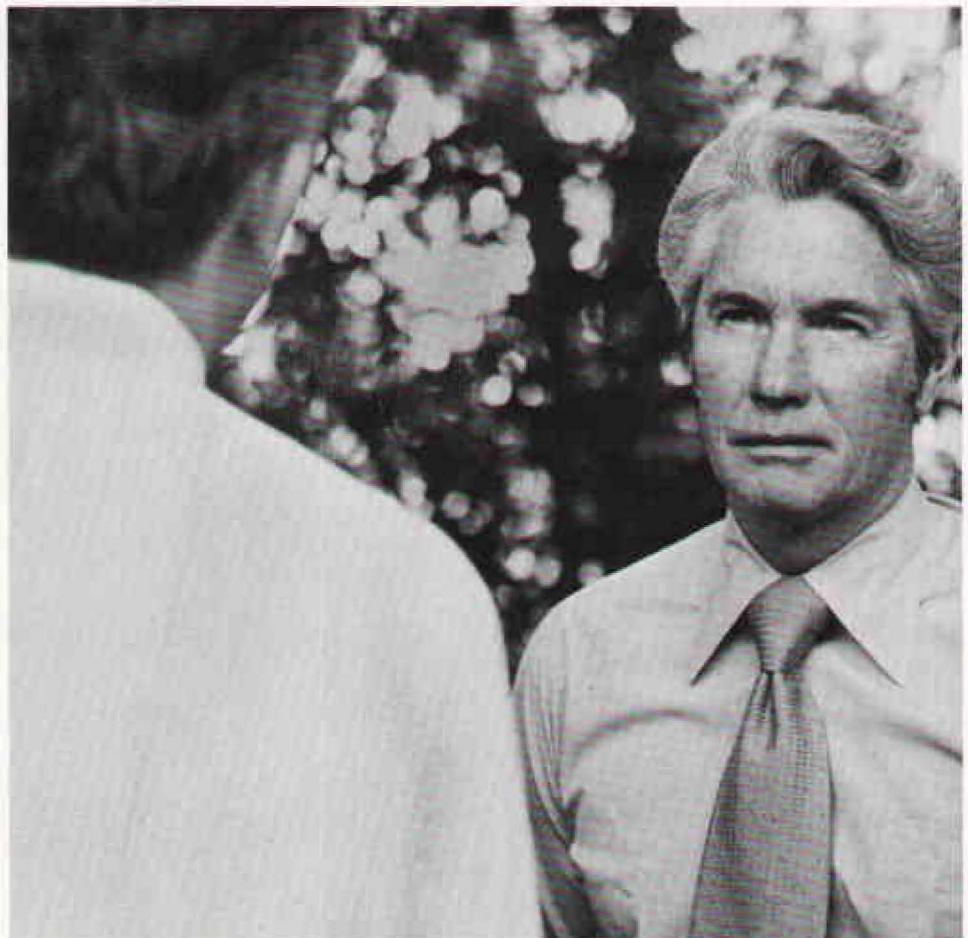
"One clear result is that the top-level problem solving process is much improved. For example, the Executive Committee, consisting of Dave Packard, Bill Hewlett, Ralph Lee, John Young and I, meets each week to discuss current programs, review problem areas and generally keep each other informed on our respective activities. We identify action items and specific responsibility is assigned to individuals to follow through on each project. In the last few months we've been able to focus on key issues and resolve a number of important projects that would have been difficult to handle under our previous structure.

"Other planned benefits of the reorganization include a better interchange of people, that is, bringing operations people into staff positions for a time as part of their development. We've also begun to evaluate the Corporate Staff departments to see how they coincide with our present needs. A key element in this is to set up a functional flow that will avoid duplication of staff — such as would occur if all of the

product groups added more and more staff functions on a uniform basis. Each group is highly individualistic with widely varying needs and the Corporate Staff departments should be able to interface with these units in a very flexible and responsive way.

"At the same time there is a real need to add some strength in certain staff areas. As a growing company we are more and more exposed to factors that previously did not directly concern us. The government, and society in general, is becoming more legalistic and bureaucratic with increasing demands and it is important that we prepare ourselves to meet these obligations in a positive and progressive manner.

"In all of the changes we have made or will make in the future, a prime goal must be to preserve the freedom of action of our operating units. That freedom, coupled with strong professional staff support, creates the kind of dynamic environment to stimulate individual accomplishment."





Form follows function...

John Young, executive vice president:

"Much can be visualized about how HP works together by referring to the chart of the corporate organization. The balance we strive for is to preserve the flexibility and freedom of action characteristic of a small company with marketing, technological, and management strengths of a larger organization.

"The heart of the organization lies within the six product groups: Instruments, Computer Systems, Components, Medical, Calculators, and Analytical. These recently were expanded from four groups to better fit the businesses we are in, reflecting the dynamic nature of Hewlett-Packard and the measurement and computation field. No doubt we'll see more such changes in the future.

"Each product group is characterized by having a common sales force for all of

its divisions' products on a worldwide basis except calculators, which has two. The task is to match our product offering to the applications needs of our customers.

"Other jobs of the group managers are to set overall targets and continually review performance. They also set the strategic direction for the business they are in, and insure that the product programs of the divisions are complementary and make that important 'contribution' to the customer that has so successfully characterized the company over the years.

"The overall corporate organization (the blue portions of the chart) has been designed to let the divisions and groups concentrate on the product activities that they uniquely can do without each having to understand and perform all the important administrative tasks of doing business on a worldwide basis.

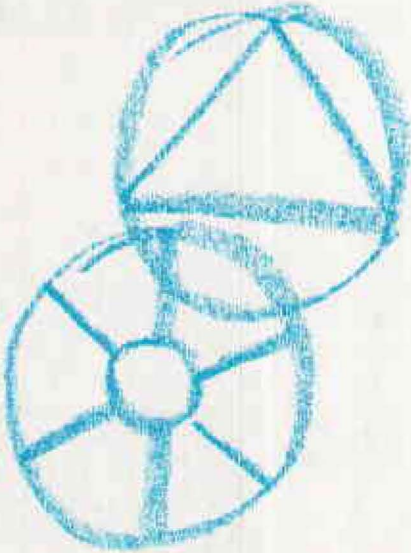
"In particular, the administrative functions of the sales regions and the two international operations (Europe and Intercontinental) provide a broad 'umbrella' over all the field selling and international manufacturing activities of all product groups. Dealing with the tasks of billing and collecting from our customers, determining competitive pay rates in all of the countries where we employ people, and constantly monitoring our position in the major world's currencies are just a few examples of the critical services provided.

"More organizational elements are required to furnish the 'glue' that binds our overall activity together. Those elements include the Corporate Staff departments shown at the left of the chart. While their individual functioning is complex and varied, they can be seen as having critical two-way communication ties to the organization as a whole. On the one hand the functional corporate staff office provides the policies and leadership for that function throughout the company. At the same time, they form an important upward communication path through the organization to make sure that a highly informed and expert voice is represented in the company's highest councils.

"Another vital element is seen on the right of the chart, namely the forward planning and development functions represented by Corporate Development and the creation of major new product opportunities and basic technologies in HP Labs. Although their primary mission is to serve as the company's vanguard in terms of planning and technology, they also pro-

(continued)

Working together



John Young

vide a strong two-way channel of communication in those broad areas.

"The question remains: How does it all work together?"

"I think any answer necessarily starts with the corporate objectives. These provide a common denominator that tells everyone what it is we are trying to do and, in general, how we should go about achieving it. Backing up these are the rather complete and formal policies for such areas as finance, personnel and marketing where, for legal and business reasons, specific procedures must be established and followed by everyone.

"The organization also has coordinating bodies that add to the team effort. First is the Executive Council which includes all Corporate Staff heads, group managers and top management of the corporation. Their monthly meetings deal with a wide variety of problems ranging from the business outlook to major policy changes.

"Another body, the Operations Council, has the often tough job of turning policy decisions into corporate action. Representing all the operations of the company, this closely knit team consists of the vice presidents of International and Marketing, the six group managers, the executive vice presidents, and the vice president of Administration. Meetings of the Operations Council are for a full day each month, and recent topics have ranged from a complete review of the compensation program for exempt employees to working out next year's planning cycle.

"Then there are the many gatherings of what might be called 'affinity' groups. These are largely informal in timing and structure but enormously important in terms of their ability to communicate

ideas and to stimulate cooperative action over a wide front. Here would be included such get-togethers as the twice-yearly general managers meeting, conferences of finance managers, personnel managers, engineering managers, EDP people — and so on. Special publications also serve many of these common-interest groups. The net effect is to share experiences, look for solutions to new problems, and to leave a common frame of reference for future decision making.

"The foregoing represent the more tangible workings of the organization. I believe that other factors of a less tangible nature also have important roles in the HP organizational makeup. You might think of these as influencing the organizational 'style' of the company.

"One notable influence is the high level of competence found throughout the HP organization, and the strong mutual respect that grows from it. In the all-important area of engineering, for example, HP's practice is to recruit the best young people it can find, then continually train them on the job to take on broader responsibilities. The net effect of this shared background and training is an ability to communicate with considerable precision and comprehension across organizational lines and geographic boundaries.

"'Growing our own' people results in a strong upward flow of supervisors and managers knowledgeable not only in terms of their profession but also the company and its business. This is a very important requirement if we are going to fulfill the promise of management by objective, because once that principle has been set into action it can only carry on if everyone in the organization understands it and works at it." □

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