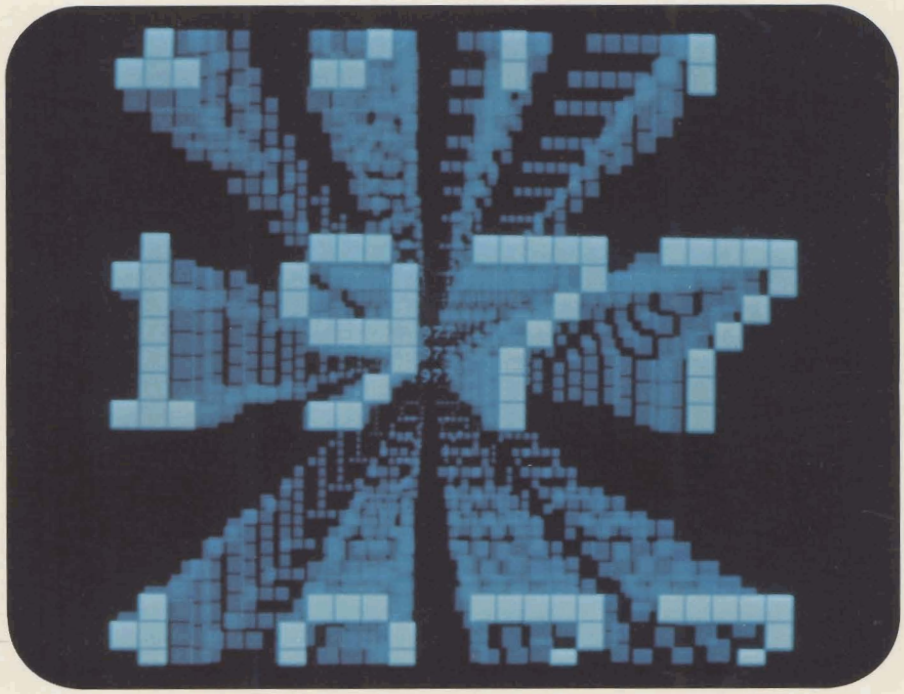
Hewlett-Packard Company
Annual Report



Hewlett-Packard report for the fiscal year ended October 31, 1977

FINANCIAL HIGHLIGHTS
(millions of dollars)

	1977	1976
Domestic orders	768.8	592.4
International orders	664.1	557.6
Total orders	1,432.9	1,150.0
Net sales	1,360.0	1,111.6
Pre-tax earnings	229.2	160.6
Provision for taxes	107.7	69.8
Net earnings	121.5	90.8
Net earnings per share	$4.27	$3.24

To our Shareowners

1977 was a year of good growth and accomplishment for Hewlett-Packard. A strong, balanced performance throughout the organization, coupled with favorable market conditions, enabled the company to attain significantly higher levels of sales, earnings and incoming orders.

Sales totaled $1.36 billion, up 22 percent over sales of $1.11 billion in 1976. Net earnings increased 34 percent to $121.5 million, equal to $4.27 a share on 28,479,372 shares of common stock outstanding. This compares with earnings of $90.8 million, equal to $3.24 a share, on slightly fewer shares outstanding last year.

The company's net earnings were achieved after setting aside approximately $12 million for the year, including $3 million in the fourth quarter, to provide a minimum retirement benefit for career U.S. employees. A study undertaken earlier in the year indicated that additional funding would be required to assure more equitable distribution of retirement benefits for HP employees in the U.S. At its November, 1977, meeting the Board adopted a new Supplemental Pension Plan that will require a comparable annual expense for the foreseeable future.

Our effective federal and foreign income tax rate increased from 40.6 percent in 1976 to 43.9 percent in 1977. It is not possible to precisely estimate our effective tax rate in advance since it depends on the mix of our business between domestic and foreign sales, as well as among product lines. Because these factors varied from our projections in both years, the rate of accrual for income taxes in this year's fourth quarter was significantly higher than in the corresponding quarter last year.

Net earnings as a percent of sales increased from 8.2 percent in fiscal 1976 to 8.9 percent in fiscal 1977. Contributing to this improvement was good control of the cost of sales and of expenses.

WILLIAM R. HEWLETT DAVID PACKARD

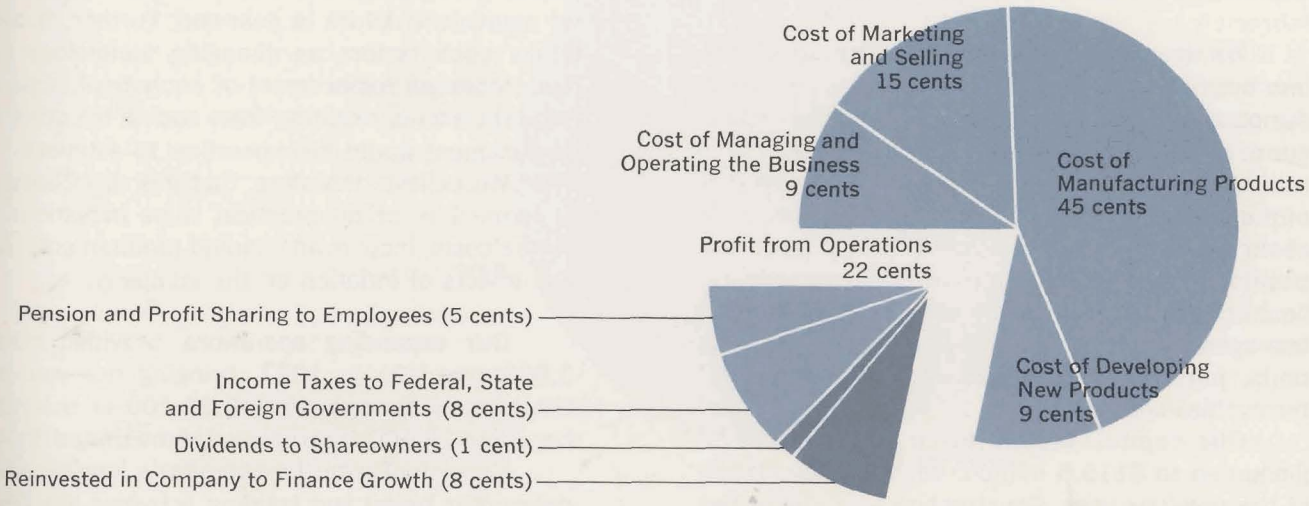
As indicated by the table on the accompanying page, all product groups contributed to sales and earnings growth in 1977. The largest contributor in total dollars was our test and measurement group; however, the analytical instrumentation and data products groups achieved the largest percentage gains over the previous year. The medical equipment group recorded a modest gain in pre-tax earnings despite a slower sales growth rate. The group's earnings performance was influenced by enacted or pending legislation on medical cost containment, and higher expenditures in research and development.

Companywide research and development expenditures in 1977 were $125.4 million, representing 9.2 percent of sales. This effort generated approximately 100 major new products during the year, which should provide additional growth in 1978. An increasing number of HP products have built-in control and computational capabilities, outgrowth of the company's achievements in computer and calculator technology. Because of the

CONTRIBUTIONS TO SALES AND PRE-TAX EARNINGS BY PRODUCT GROUPS
(millions of dollars)

	1977	1976	1975	1974	1973
SALES					
Test, measuring and related items	577.4	487.3	442.0	394.0	320.1
Electronic data products	571.7	447.1	386.8	371.8	255.5
Medical electronic equipment	134.9	119.4	98.9	78.2	56.9
Analytical instrumentation	76.0	57.8	53.5	40.1	28.8
TOTAL	1,360.0	1,111.6	981.2	884.1	661.3
PRE-TAX EARNINGS					
Test, measuring and related items	113.1	84.4	76.8	62.8	48.6
Electronic data products	87.4	52.6	54.5	71.5	41.1
Medical electronic equipment	18.1	17.5	11.0	6.7	3.7
Analytical instrumentation	10.6	6.1	6.3	3.3	1.2
TOTAL	229.2	160.6	148.6	144.3	94.6

DISTRIBUTION OF HP'S SALES DOLLAR



Hewlett-Packard's profit from operations amounted to 22 cents on the dollar in fiscal 1977. Of this, 9 cents (the darker portion above) was the company's net profit.

growing significance of computational technology and its impact on the company's future, we have devoted a special section to this subject, beginning on page 9.

The company's incoming orders for 1977 amounted to $1.43 billion, an increase of 25 percent over orders received in 1976. The volume of orders rose consistently throughout the year, and orders for each of the four quarters were above the comparable periods in 1976. We were especially encouraged by the record volume of orders, $371.3 million, received in the fourth quarter.

Domestic markets were particularly strong. Orders from U.S. customers amounted to $768.8 million, up 30 percent from $592.4 million in 1976. Orders from our international customers totaled $664.1 million, an increase of 19 percent over orders of $557.6 million last year. This reflects a continuing gradual economic recovery in some of our key international markets.

By product category, orders received during the year were $617.4 million for electronic test and measuring instrumentation and related items, up 23 percent over 1976; $600.6 million for electronic data products, an increase of 27 percent; $135.2 million for medical electronic equipment, an increase of 14 percent; and $79.7 million for analytical instrumentation, up 33 percent.

We were especially gratified by the continued improvements in the company's liquidity position during the year. At the beginning of fiscal 1977, our cash and equivalents exceeded short-term borrowings by approximately $48 million. By the end of the year, this net cash position had increased to about $125 million, which places us in excellent position to finance future growth. This very strong liquidity position is a result of outstanding asset management performances by all of our operating units, particularly in the areas of inventory and receivables control.

Our capital expenditures in fiscal 1977 amounted to $115.5 million, slightly above those of the previous year. Construction was completed on approximately 696,000 square feet of additional plant capacity, and on new sales and service offices totaling 183,000 square feet. Also during the year construction was started on new plants and plant additions in Cupertino, San Jose and Santa Rosa, California; Fort Collins, Colorado; Boise, Idaho; and Waldbronn, Germany. When completed in 1978, these facilities will provide an additional 1,400,000 square feet of plant capacity. Construction also was started on several new sales and service offices totaling 309,000 square feet. In the coming year, we estimate that capital expenditures will be about $150 million.

While on the subject of capital expenditures, you will note that for the first time we are making reference in our Financial Statements (Footnote 10) to the replacement costs of plant and equipment, and inventories. This is a requirement imposed on a segment of U.S. industry by the Securities and Exchange Commission to provide estimated replacement cost data and the estimated effect on cost of goods sold and depreciation expenses. HP's data for fiscal 1977 are presented fully in the company's annual report to the SEC on Form 10-K, a copy of which is available to any shareowner on request to the Corporate Secretary.

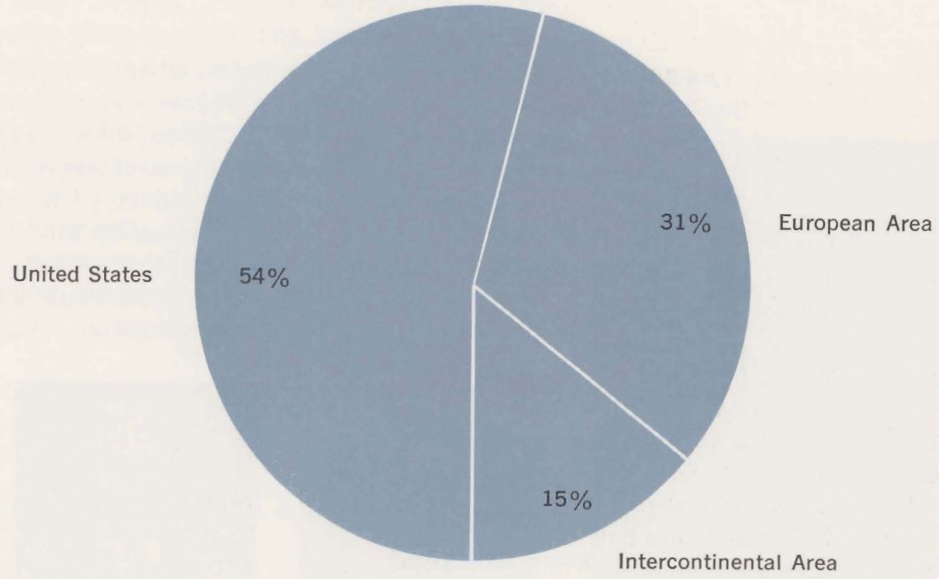
It is our opinion that this requirement fails to take into account the realities of operating a business. Fundamentally, it is based on the unrealistic assumption that existing plant and equipment would be replaced with new plant and equipment of equivalent nature at year-end. Further, it overlooks such factors as changing technology and tax credits on replacement of equipment. Operating efficiencies resulting from such a hypothetical replacement would be impractical to estimate.

We believe, therefore, that this disclosure requirement is of no practical value in estimating future costs, income and capital requirements, and the effects of inflation on the company.

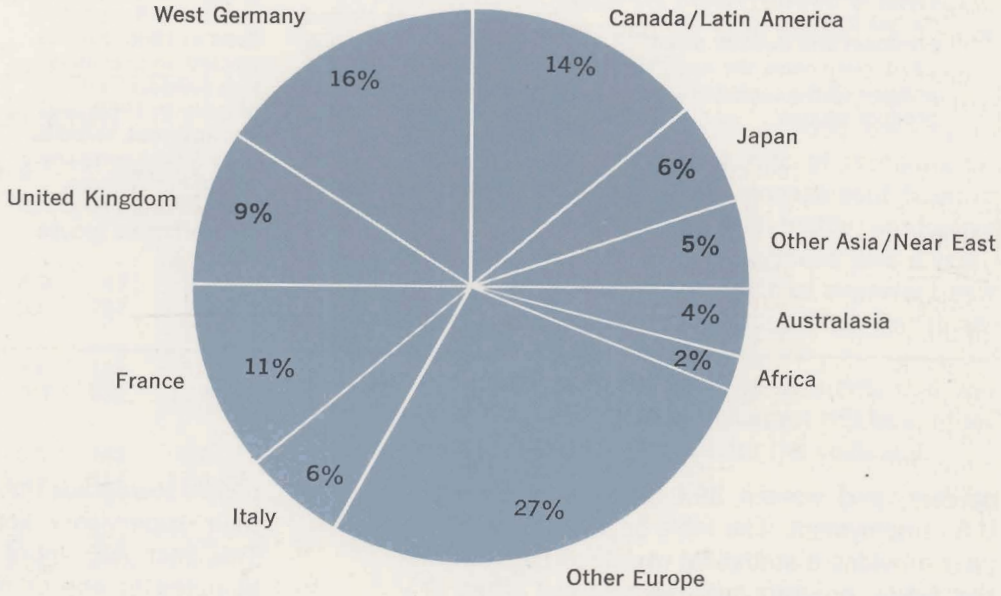
Our expanding operations provided nearly 3,000 new jobs in 1977, bringing our year-end employment to approximately 35,100. Of this number about 25,400 are employed in the United States.

Consistent with the company's long-standing policy, our hiring and training activities are being conducted with a strong commitment to equal employment opportunity and affirmative action. At the end of the fiscal year, minorities represented 17.3

GEOGRAPHICAL DISTRIBUTION OF HP'S WORLDWIDE ORDERS
(Fiscal 1977)



GEOGRAPHICAL DISTRIBUTION OF INTERNATIONAL ORDERS
(Fiscal 1977)



Of HP's total orders in 1977, 46 percent, or $664.1 million came from international customers. The chart shows a percentage breakout of the company's international business by geographical regions.

HP's Executive Committee:

Providing policy and coordination for the company's worldwide operations

Effective November 1, 1977, John A. Young assumed the responsibilities of president and chief operating officer for Hewlett-Packard. William R. Hewlett, who has served as president since 1964, continues as chief executive officer and as chairman of the company's executive committee. In addition to Mr. Hewlett and Mr. Young, the executive committee is comprised of David Packard, board chairman, and three executive vice presidents. They are Robert L. Boniface (Administration), Ralph E. Lee (Operations) and Dean O. Morton (Operations). Hewlett-Packard's executive committee, meeting on a weekly basis, formulates corporate policy and coordinates all phases of the company's operations.

John A. Young, 45, was elected president and chief operating officer, effective November 1, 1977. He joined HP in 1958, and following a succession of management assignments was named a vice president and group general manager in 1968. He has been an executive vice president and director since 1974, overseeing the operations of three of the company's six product groups.

Robert L. Boniface, 53, joined HP in 1963 when his previous employer, Neely Enterprises, was acquired by the company. After serving as general manager of the Neely sales division, he was elected vice president for marketing in 1970. In 1974 he became vice president, corporate administration, and was elected a director. The following year he was elected executive vice president, corporate administration.

Ralph E. Lee, 62, joined HP in 1945 as head of manufacturing engineering. He was appointed vice president, manufacturing, in 1960, and vice president for HP's western U.S. operations in 1966. He was elected an executive vice president and director in 1969, and currently has responsibility for the company's computer systems, components, and calculator products groups.

Dean O. Morton, 45, joined HP in 1960. For the past twelve years he has been associated with the medical products group, and served as vice president and general manager of the group from 1974 until his recent election as an executive vice president, operations, and a director. Groups assigned to Morton include test and measuring instruments, medical products, and analytical instrumentation.

percent, and women 39.9 percent of HP's total U.S. employment. The table on the accompanying page provides a statistical review of HP's affirmative action program over the past five years.

We continued to expand our training and educational development activities during the year, providing a wider range of programs to enable HP people to upgrade their technical skills and broaden their supervisory and management capabilities. This past year, more than 10,000 employees participated in one or more of these programs. We believe this activity to be of great importance to the future growth and success of the company, and our efforts to help HP people grow as the company grows.

To insure a continuing flow of qualified professional people into the company, we maintain a broad and active recruiting program for both graduating students and experienced professionals. In 1977, nearly 400 graduating students accepted positions with the company, about 50 percent of whom had earned master's or doctorate degrees in their respective areas of study. Some 500 experienced professionals also joined HP during the year.

Shortly before the end of the fiscal year, we were pleased to announce the election of John A. Young as president and chief operating officer of the company. His appointment became effective November 1, 1977, concurrent with the start of our new fiscal year. Mr. Young joined Hewlett-Packard in 1958, and has been an executive vice president since 1974. He has had an outstanding career with HP, and we are fully confident in his ability to lead the company into its second generation of management and to perpetuate the philosophies that have shaped the company and guided its growth.

As for our own personal roles, we do not intend in any way to lessen our interest in the affairs of the company. Rather, the election of John Young as president will enable us to devote more time to long-term policy matters with the assurance that the day-to-day operations of the company will be effectively handled.

Succeeding Mr. Young as executive vice president is Dean O. Morton. Mr. Morton, who has been with the company since 1960 and a vice president since 1973, was most recently general manager of our medical products group. Concurrent with his new assignment, he was appointed a member of the executive committee and elected a director of the company.

Earlier in the year, we were pleased to have James D. Hodgson join the Board. Mr. Hodgson, former U.S. Secretary of Labor and U.S. Ambassador to Japan, brings to the Board extensive experience in industry, government, and international relations.

Summing up our operations for 1977, we believe the good progress we have made is the result of the solid foundation we have built for the company over the years. We have placed a high premium on technological contributions. We have personnel policies to attract and keep the best people at all levels. We have followed conservative financial policies, and we have worked hard to be a good corporate citizen.

Looking to the future, we remain optimistic. We are entering 1978 with a good backlog of orders, and an encouraging rate of incoming orders. We have an excellent management team in place, and a well trained and highly productive workforce. We have a more balanced and diversified product line, and a number of important new products coming from our laboratories. Our financial position is extremely sound.

These are strong, positive elements that will provide the basis for what we expect will be another year of growth and progress for the company.

AFFIRMATIVE ACTION REVIEW

	Total number	Minority Total	Minority Percent	Female* Total	Female* Percent
Managers & Supervisors					
1972	1,597	78	4.9	47	2.9
1977	2,775	180	6.5	267	9.6
Professionals					
1972	2,534	141	5.6	133	5.3
1977	6,079	586	9.6	836	13.8
Technicians					
1972	1,643	173	10.5	142	8.6
1977	2,852	368	12.9	317	11.1
Skilled Craft					
1972	1,638	181	11.1	209	12.8
1977	2,428	410	16.9	426	17.5

*includes minority females

totals and percentages are based on HP's employment in the U.S. The job categories shown are among those defined by the U.S. Equal Employment Opportunity Commission.

DAVID PACKARD
Chairman of the Board

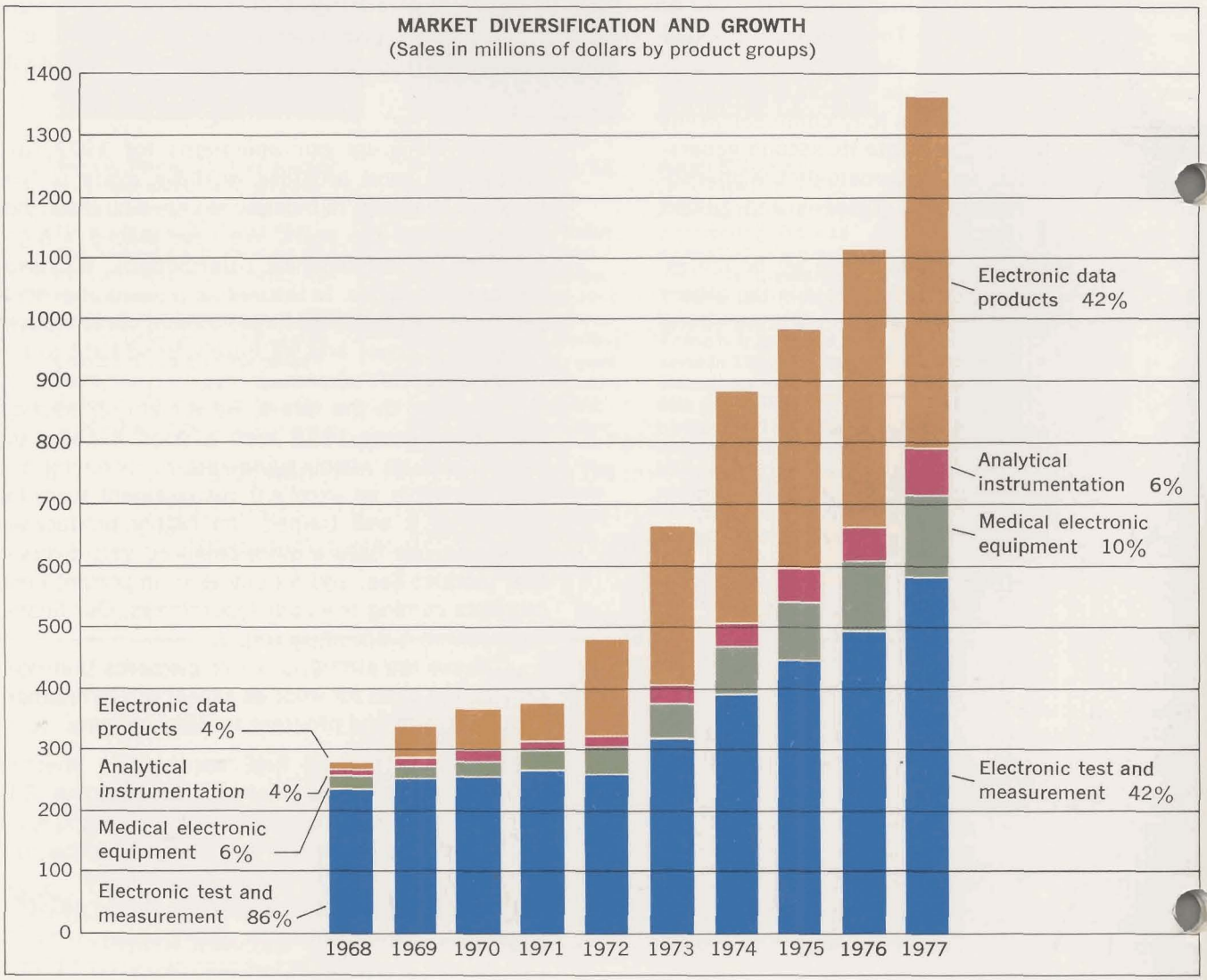
WILLIAM R. HEWLETT
Chief Executive Officer

December 28, 1977

The Business of Hewlett-Packard

The Hewlett-Packard Company is a major designer and manufacturer of precision electronic equipment for measurement, analysis and computation. The company makes more than 4,000 products, which are sold worldwide and have broad application in the fields of science, engineering, business, industry, medicine and education.

Principal product categories include test and measuring instrumentation and solid-state components (42 percent of sales); computers and computer systems, electronic calculators, and computer/calculator peripheral products (42 percent); medical electronic equipment (10 percent), and instrumentation for chemical analysis (6 percent).



COMPUTATIONAL TECHNOLOGY:
Expanding HP's product capabilities and markets

Nowhere does technological innovation show more momentum than in electronics — and its offspring, electronic computation. In a very short time electronic computational devices will be participants in nearly every aspect of our lives. Already we solve complex mathematical problems on hand-held calculators and cook our meals in ovens controlled by tiny devices called microprocessors. Computerized medical systems closely monitor our illnesses or check the health of our unborn babies. The design, testing, operation and repair of our automobiles all involve a variety of computing devices. Microprocessor-controlled instruments analyze the purity of the food we eat and the water we drink. Where we work, computers keep track of our personnel records and our paychecks.

The impact of computational technology within Hewlett-Packard has been dramatic. It has led to radically new concepts in the design of test and measuring instruments, to significant improvements in computer and calculator performance, and to the development of new families of products for important markets of the future.

Enlarged many times, the integrated circuit shown on the opposite page is HP's silicon-on-sapphire (SOS) microprocessor. Containing more than 10,000 circuit elements, this tiny computer serves as an internal controller for a number of new HP products.

The first indication of the influence of computer technology on HP occurred in the early 1960s when company engineers began to design instruments that could work together automatically in computer controlled system configurations. They were taking advantage of one of the most useful attributes of computers: their processing speed. With the eyes and ears and touch of instruments, a computerized system can watch an event or process with great precision and unwavering interest, quickly distilling the meaning of mountains of data.

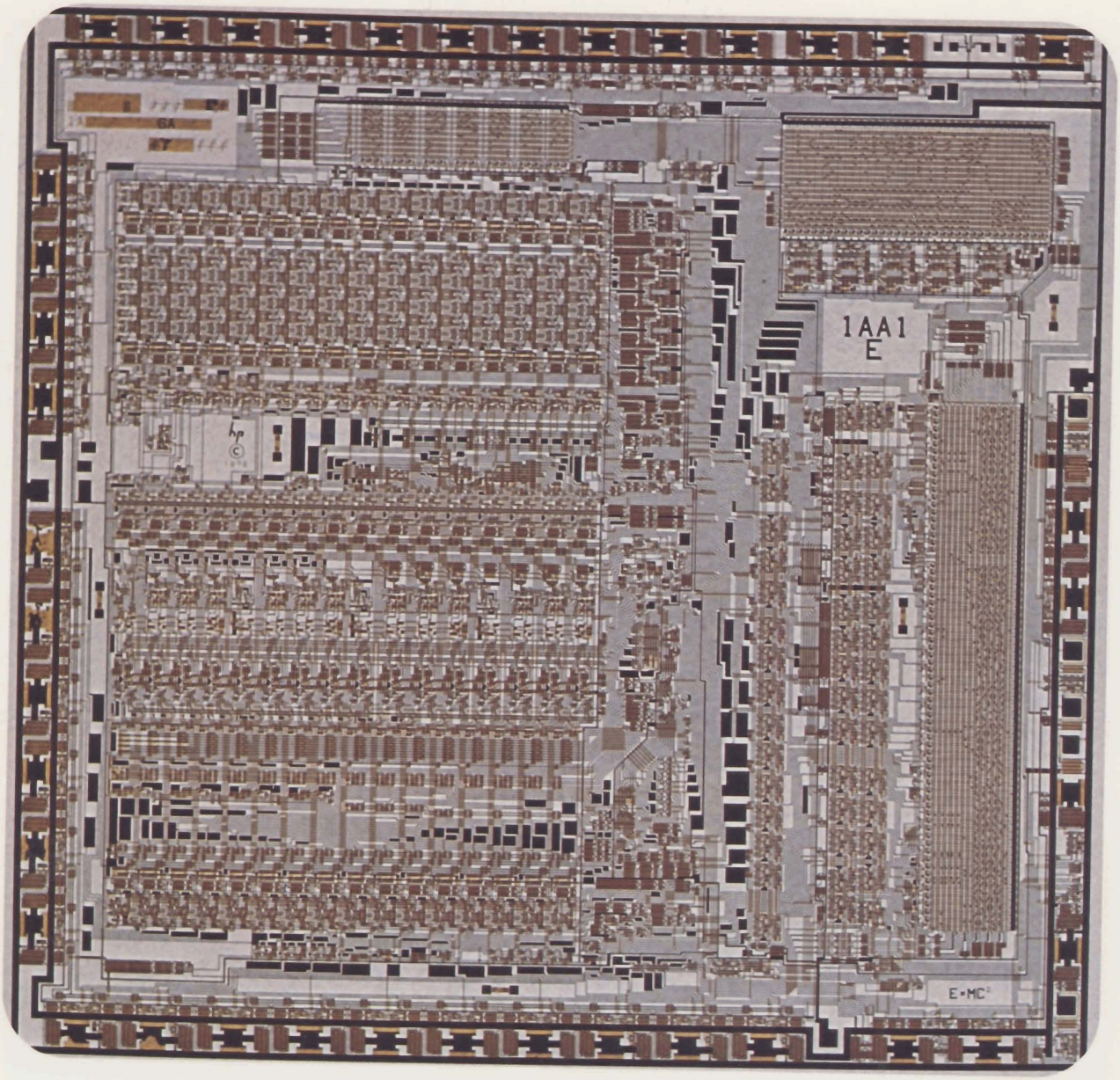
HP's first computer

The company carried the concept a step further in the mid 1960s with the introduction of a computer designed specifically to work with its instruments. The principal contribution offered by HP in that first computer was ruggedness — the capability to function outside a controlled environment, and thereby withstand the same conditions of temperature, humidity and shock to which instruments were exposed.

These early achievements reflect the interactive nature of the HP organization. There is a great diversity of talent and technology within the company, and traditionally technological developments are passed from division to division and used effectively in many different products. The development and application of computational technology is a case in point.

Internal intelligence

While computer and calculator groups eventually evolved within HP, nearly every product division today is using this technology to strengthen and extend equipment capability. Most often this is accomplished by combining an externally located computer or calculator with medical, analytical or electronic test systems. Sometimes, however, this is achieved internally by building "intelligence" into products by means of thumbtack-head size devices called microprocessors. Often these "smart" instruments also need built-in memories, which may be the same semiconductor memory chips used in full-sized HP com-



Actual size

puters. Microprocessors and memory chips are just two of many kinds of *integrated circuit components.*

Miniaturized circuitry

Integrated circuits (ICs) are the core technology of modern electronics. ICs are electrical circuits on thin chips, usually silicon. They are miniaturized versions of circuitry that previously required many individual components. Early ICs, those available some 15 years ago, combined about ten transistors with all their interconnections. Today, ICs with 10,000 circuit elements are commonplace, and within the next few years the number will very likely climb to 100,000 elements per chip.

In a recent speech, John Young, HP's new president and chief operating officer, said, "Basic components are the precursors of innovation. They continue to become denser, cheaper, smaller, faster, more powerful, more reliable, and to use less power; and in doing so, they give us the ability to do entirely new things that were once considered impossible. They enable us to cross thresholds to great discoveries."

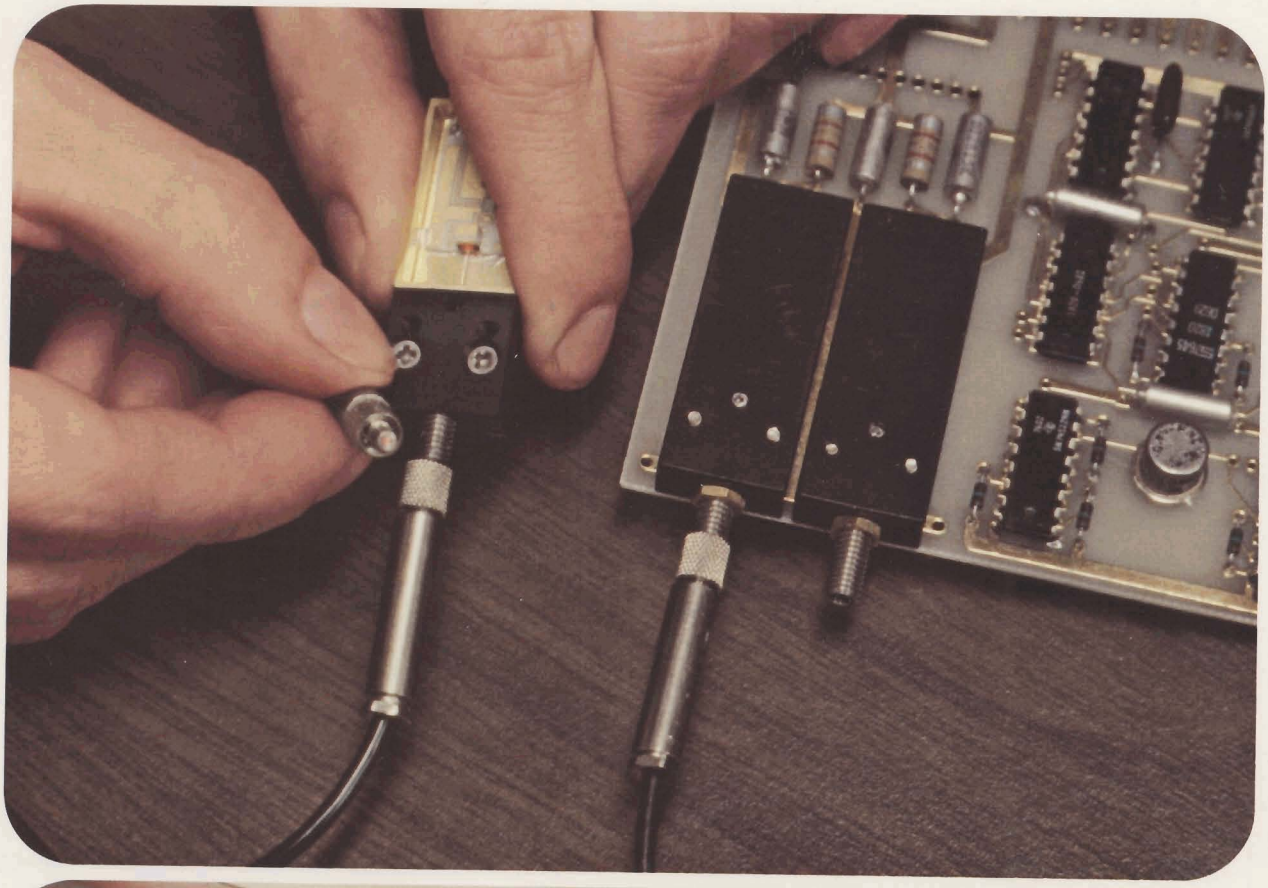
To be at the forefront of component technology requires an intensive effort and considerable expense. By necessity then, a major portion of HP's corporate-wide research and development expenditures is devoted to component development, much of it on integrated circuitry.

"Smart" instruments

Microprocessor ICs add a new level of performance for automatic systems and individual instruments alike. The first fully microprocessor-controlled HP instrument, introduced in 1974, was a gas chromatograph used for chemical analysis. The microprocessor contained in the chromatograph's integrator was the calculating chip from the HP-35, the first major hand-held engineering calculator. This gas chromatograph was soon followed by a number of other "smart" instruments including a liquid chromatograph, a digital multimeter, and an oscilloscope. The latter was the first commercial oscilloscope to use a micro-

(Top)
HP is currently field testing transmitter/receiver modules, key components for data transmission through optical fiber cables. This highly promising technology, which offers virtual freedom from the effects of electrical interference during transmission, will be used in future generations of computer systems.

(Bottom)
Maintaining leadership in integrated circuit (IC) technology requires sizable commitments of capital and R&D resources for modern IC facilities such as HP's computer-automated lab in Palo Alto. To make the technology more accessible to product designers, HP has established IC facilities at a number of operating divisions. The newest was built this past year in Corvallis, Oregon.



processor, which calculated answers directly in the numerical units most useful to the operator.

Descendants of HP's first minicomputers, today's 1000-Series and 9800-Series of products, now are widely used as computing resources in engineering laboratories, as controllers of instrumented experiments and production processes, and as analyzers to identify and correct malfunctions in other computational devices. Concurrently, they automatically produce statistical reports of their findings for computers at higher organizational levels. To provide complete individualized support to customers with these specialized needs, HP often utilizes the services of outside suppliers who provide sets of computer instructions (software) specifically tailored to solve the problems of the end-user.

(Top)
Typifying today's "smart" instruments, a new HP spectrum analyzer with built-in microcomputer speeds and simplifies user operation, and makes previously impractical analysis tasks routine. In this engineering laboratory, the instrument is being used to detect electromagnetic interference.

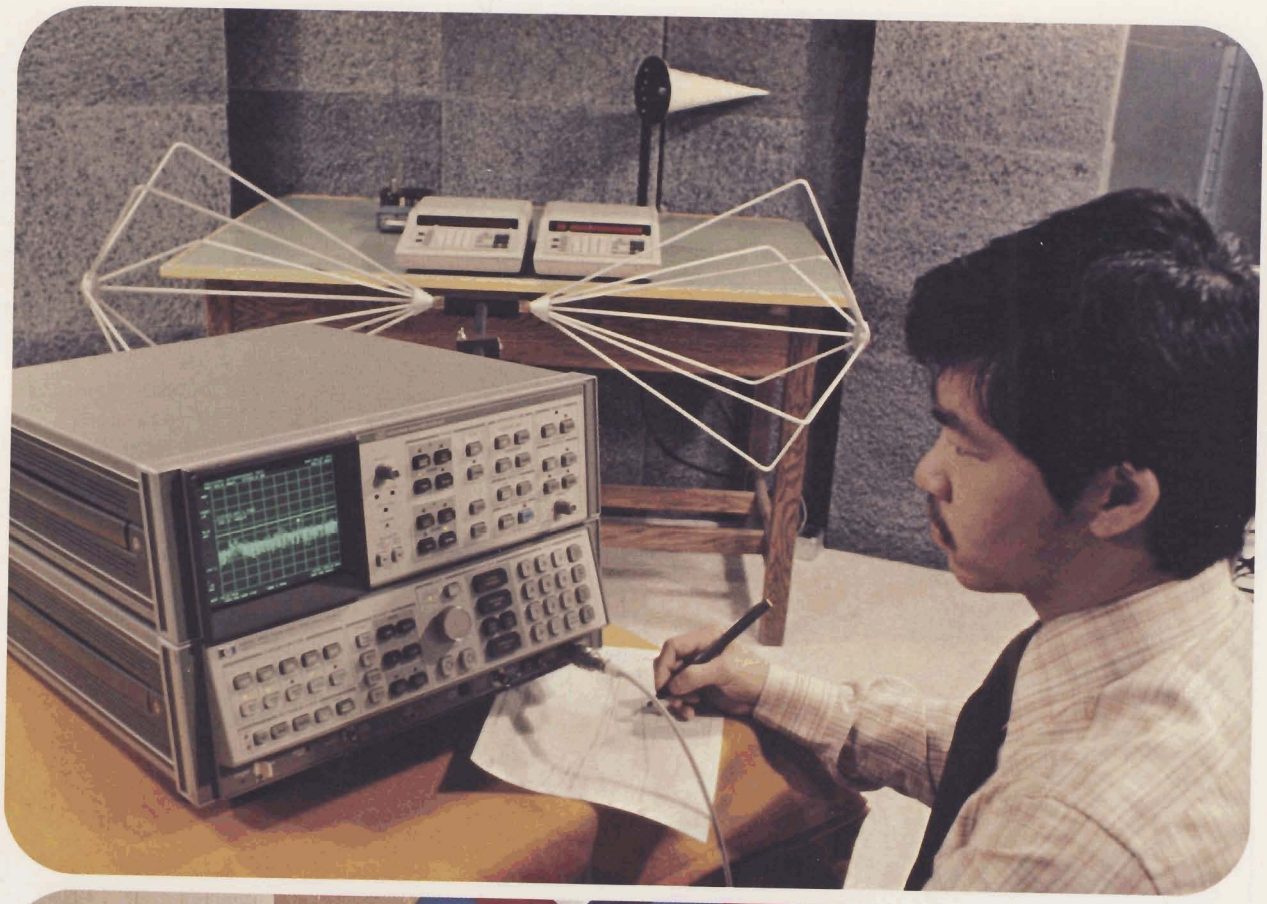
(Bottom)
Computational technology gives this gas chromatograph/mass spectrometer system the capability of identifying the chemical compounds of a mixture, and simultaneously measuring their quantities. With its external and internal computational devices, the system eliminates many time-consuming set-up tasks, provides data in immediately usable format, and can operate unattended.

New levels of speed and precision

The applications for today's generation of HP "smart" instruments are too numerous to permit a complete listing. However, three examples may help describe, at least in a general way, their capabilities. A logic analyzer used in testing digital circuitry can catch elusive errors in data streaming by at the rate of millions of characters a second. A vibration analyzer, making hundreds of thousands of calculations a second, reveals minute and far-removed sources of noise and vibration in a new auto design. An electronic surveying instrument automatically makes most of the measurements and calculations needed for a complete terrestrial survey.

HP-developed microprocessors

Although HP has often used microprocessors designed by others, the company increasingly is developing more of its own, using in-house technologies. One of these, N-channel metal oxide semiconductor (NMOS) is now in its second generation (NMOS-II) at HP. This research effort has resulted in a family of ICs whose speed is measured in billionths of a second. The first application for these components was in the design of an extremely high speed HP desktop calculator in 1976. During this past year, they were key

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(Top)
HP's logic analyzers are powerful tools for the design and testing of digital circuitry. Featuring easy-to-operate keyboard control, this 1977 model can catch elusive errors in data streaming by at the rate of millions of characters a second.

(Lower left)
This HP pulmonary function system automatically makes three respiratory measurements — distribution and lung volume, ventilation, and diffusion — and provides results for the medical specialist in printed or graphic form.

(Lower right)
Designed for both mechanical and electronic applications, this new HP vibration analyzer offers many significant advancements over earlier Fourier-type analyzers. It simplifies noise and vibration measurements of machinery, and enables faster and easier low-frequency network and spectrum analysis.

elements in the development of a desktop computer-system, and a new state-of-the-art instrument for spectrum analysis.

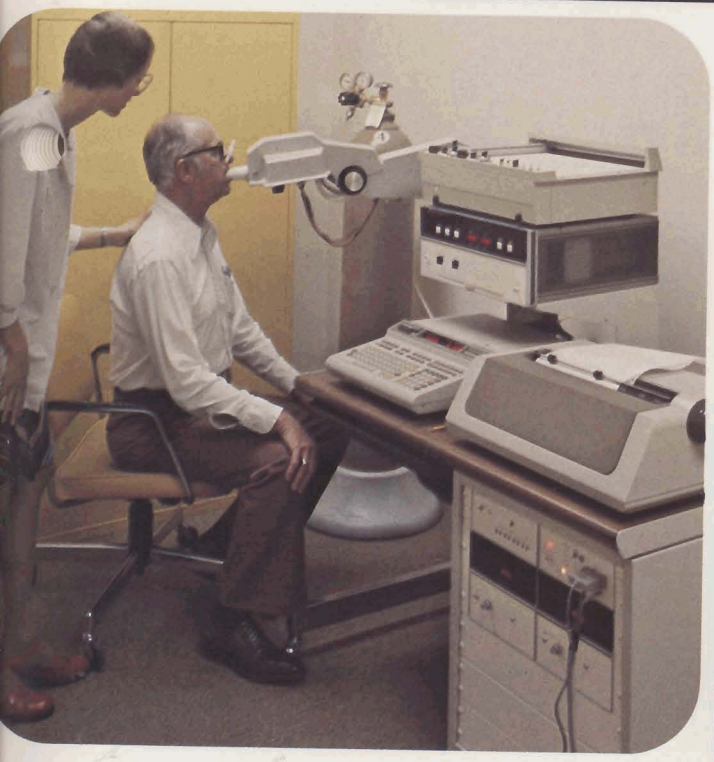
In some ways the most powerful HP microprocessor is the MC² chip, made with a new silicon-on-sapphire (SOS) technique. This technology involves placing a thin layer of silicon atop a substrate of pure sapphire, as compared with the traditional method of using solid silicon. MC² became a practical reality in 1976, and along with other SOS chips has since added computation powers and memory to a growing number of new products, including printers and computer terminals.

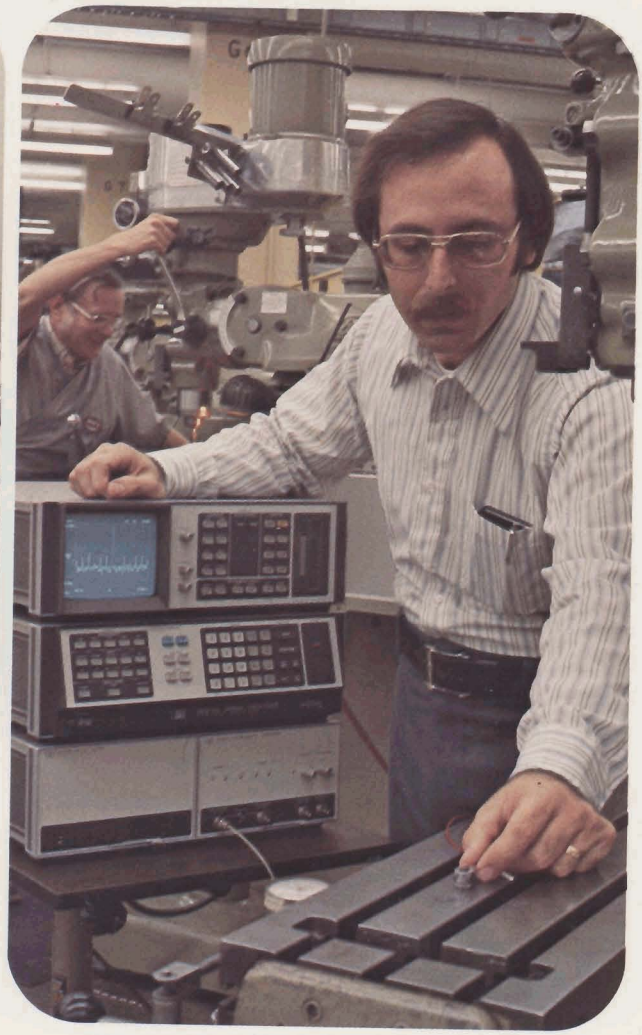
An important result of HP's broad application of computer technology has been the ability to interconnect, quickly and efficiently, instruments and their computing controllers. One of the first companies to see the opportunities in standardized electrical intercommunications, HP pioneered the development of an interfacing standard, the HP Interface Bus. HP-IB became the model for an internationally adopted standard (IEEE 488) for linking devices with common protocol and wiring. As would be expected, a large number of the company's products have HP-IB compatibility.

An expanding market base

Hewlett-Packard products, in addition to being recognized for their quality and performance, are noted for their advanced technology. For many years they have been especially prominent in engineering and scientific environments, where there is a high premium on advanced instrumentation to help solve complex problems of measurement and computation.

Today, the requirements for precise measurement and computation are widespread among many industries, businesses and professions — each representing markets of growth and opportunity for Hewlett-Packard. Among the company's newest customers are those involved in business data processing. Their needs range from a quick, accurate calculation of a real estate transaction, to





computer networks that help control the operation of a multi-billion dollar manufacturing concern.

Computation equipment for business

The first HP product aimed exclusively at this broad market was a hand-held calculator containing 36 separate financial functions. In the five years since the introduction of that calculator, HP has continued to offer ever more innovative, useful, portable calculating instruments. Recent additions include a family of battery-powered calculators that provide printed records of all calculations. Some of these models retain the size of hand-held calculators; others, though larger, fit comfortably into a briefcase.

At the other end of the scale are HP computer systems for business. Their antecedents include HP's first minicomputer-based timeshare system introduced in the 1960s. Moderately priced and capable of serving 16 users simultaneously, it found wide use in science and engineering, and was particularly successful in the educational market.

When HP's most powerful computer, the 3000, was introduced in the early 1970s, it also found a ready market in the educational field. Because it could accommodate many different programs and computer languages, the 3000 was quickly adapted to school administrative and data processing needs.

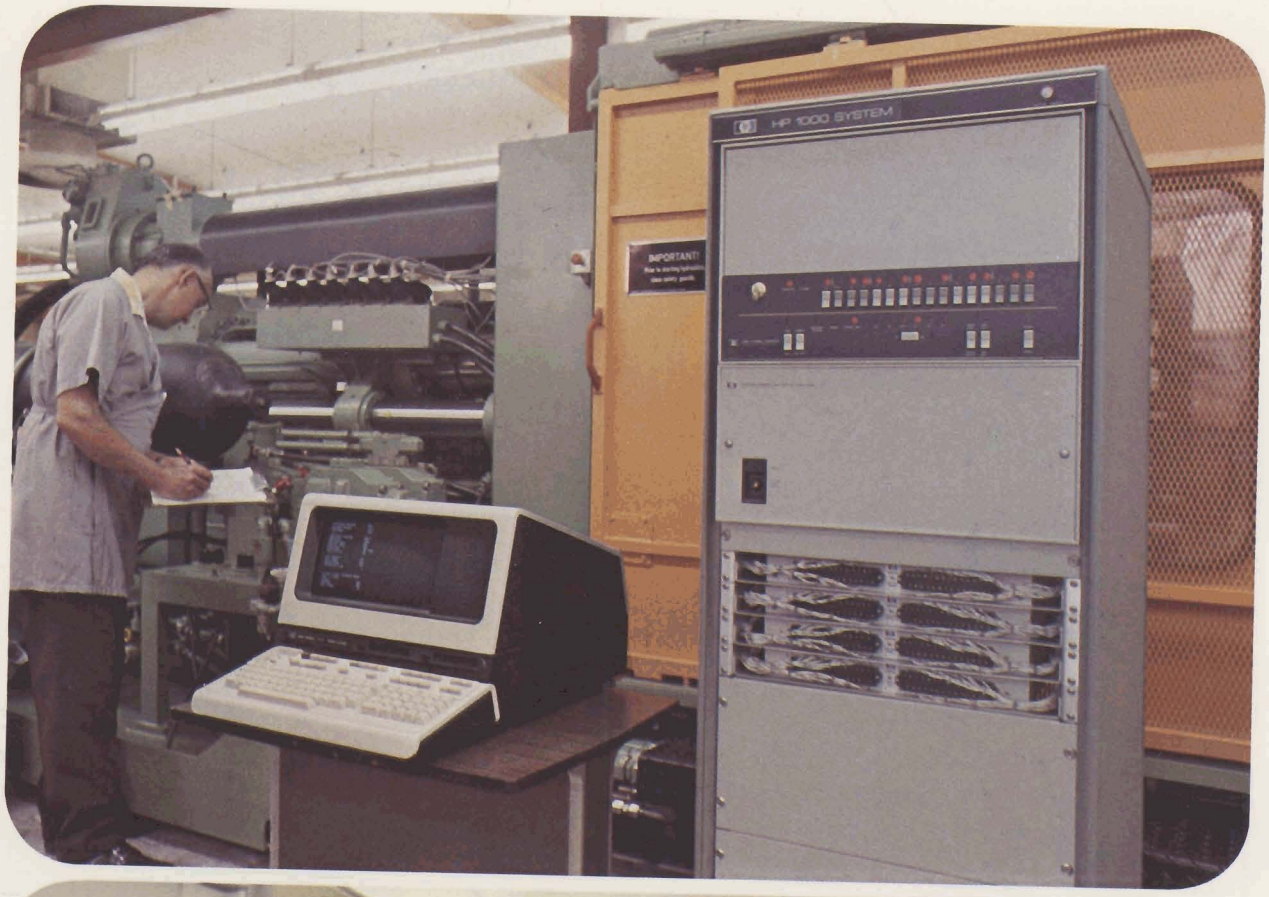
In-house proving ground

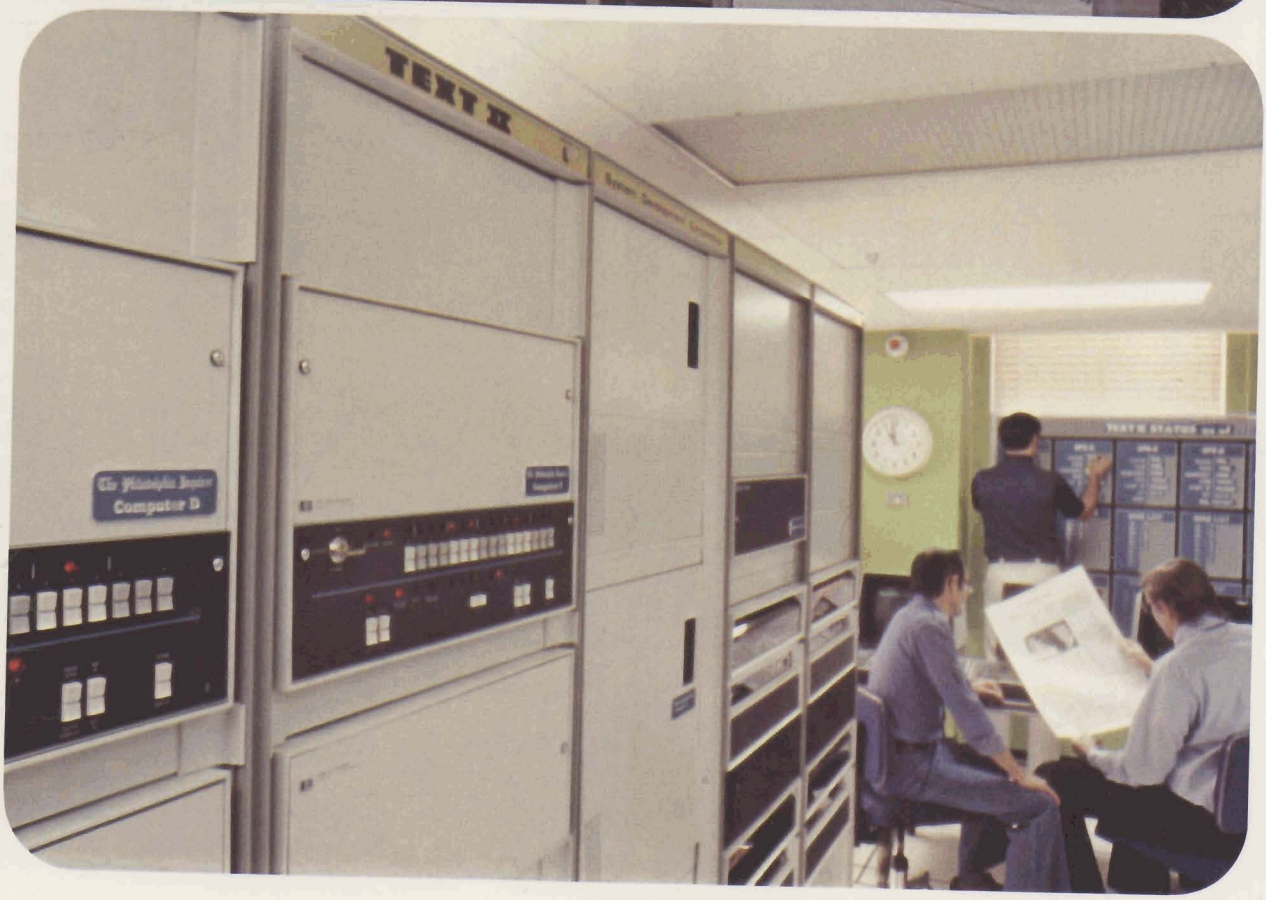
In the years since, HP has repeatedly increased the power and capability of the 3000 as a business tool, while simultaneously lowering its price. Much of the decision making that shaped the 3000 into its present successful configuration was the result of applying the computer to HP's own business problems. More than 50 of these computers are at work throughout HP, and the solutions to business problems provided by this network have proved equally useful to many HP customers with similar worldwide manufacturing operations.

Thus was spawned the beginning of what has become

(Top)
The capabilities of HP systems for industrial automation have been extended considerably by the addition of a measurement and control processor. Contained within a central station, the processor with its built-in intelligence can be programmed to monitor and control complex processes, thus freeing the system's computer for other duties.

(Bottom)
Many companies which market specialized computer systems have chosen HP as a supplier of computers and peripheral equipment. System Development Corporation uses the 21MX computer and other HP hardware in its TEXT II® system. This SDC system automates editing and phototypesetting for the Philadelphia Inquirer and other major newspapers in the U.S., Canada and Europe.


HP 1000 SYSTEM
IMPORTANT!


TEXT II
Computer D

(Top)
HP's integrated desktop computer system combines the power and flexibility of larger computer systems with the ease of use and convenient size of desktop programmable calculators. Featuring a cathode-ray-tube display and built-in mass storage, this product is particularly useful for solving technical problems, for engineering design applications, and as a computing controller in instrument systems.

(Lower left)
A keystroke-programmable hand-held calculator with built-in thermal printer is HP's newest model to feature "continuous memory." This ability to retain programs and store data when the calculator is turned off is particularly useful for students and professionals in science and engineering.

(Lower right)
More than just a digital watch with a calculator, HP's new wrist instrument performs some three dozen functions — many of them interactive. The instrument's capability is made possible by large-scale integrated circuits providing the equivalent of 38,000 transistors.

the fastest growing segment of HP operations, a hierarchy of computation equipment for administrative and business purposes. It ranges from personal calculators, to desktop computer units serving the initial computational needs of many businesses, to more sophisticated computer systems.

Improving computer compatibility

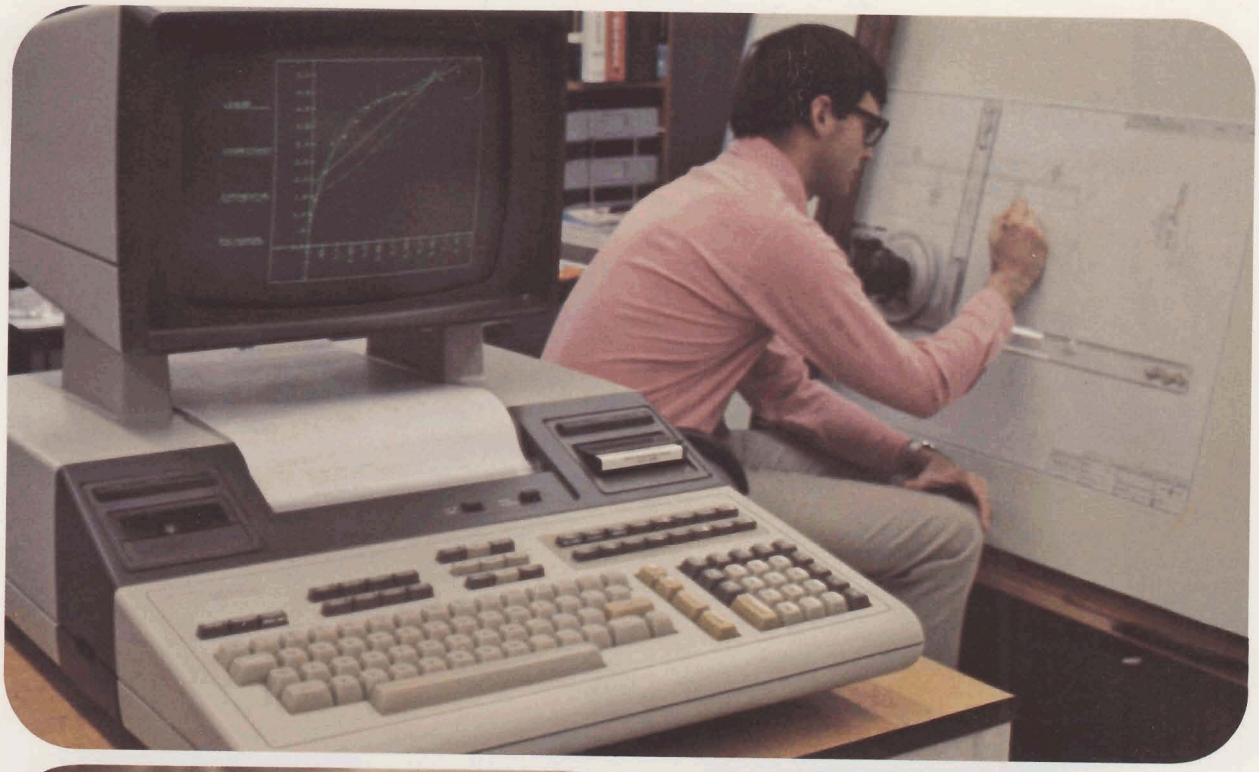
Possibly the most important trend in HP's computation activity in 1977 was that of making computers more compatible with one another, more capable of easy exchange of tasks and information. This is significant because up to now communications among computers has been difficult at best, despite all that has been said and written about computers "talking" to one another. Earlier distributed computer systems were often little more than isolated computers installed at various operating centers, lacking the centralized capabilities to make their outputs consistently traceable or mutually comprehensible.

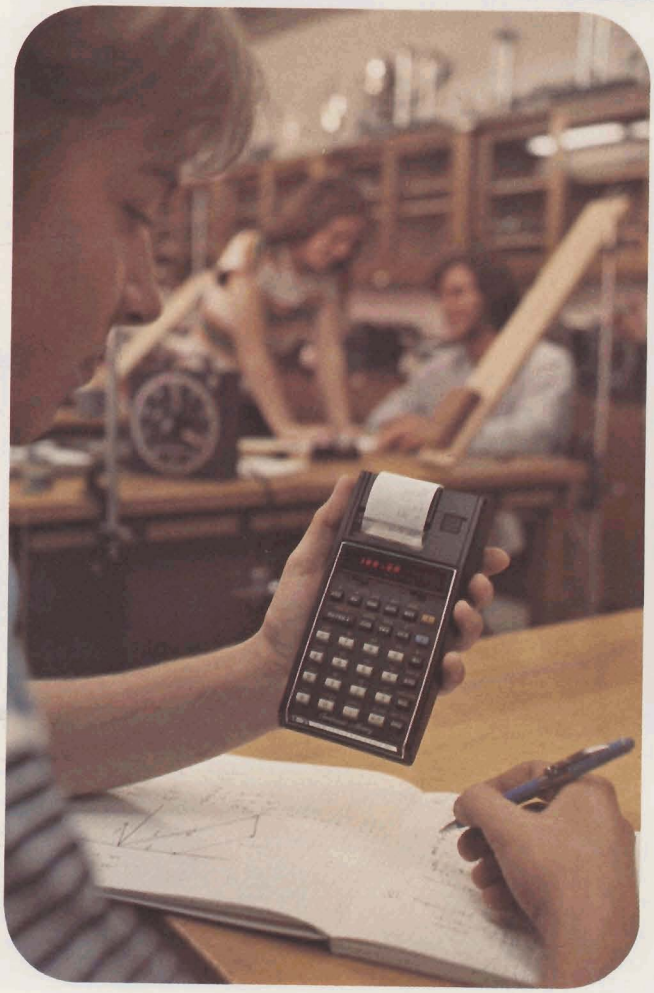
Over the past few years there has been a trend toward more productive interrelationships between large, central computers and smaller ones distributed throughout the organization's shops, laboratories and offices. More recently, much effort has gone into achieving better relationships among these smaller systems. HP has made a significant contribution in attaining this kind of compatible distributed computer networking.

Distributed systems networks

In fact, networking techniques had progressed at HP, toward the end of 1977, to a point where they now comprise a coherent distributed systems network. Systems of the 1000 Series can now interchange readily with one another and with the 3000s — commanding, and being commanded by, one another. Similarly, 3000s can deal with each other, with 1000s, and with HP's 2026 Series of specialized data communicating systems.

Because of this broad capability, HP was able to respond with off-the-shelf equipment





when Satellite Business Systems (SBS) invited the company to supply computer networking facilities for PROJECT PRELUDE. This SBS experiment, in cooperation with the National Aeronautics and Space Administration (NASA), is exploring emerging concepts for intracompany communications via satellite, including high-speed business data transmissions.

Individualizing customers' needs

Total networking of all computer facilities is an extreme appropriate only to a few organizations. Also, some computing systems should remain fully centralized — airline ticketing, for example. Nevertheless, the promise of matching computer resources to the precise form and style of the organization is rapidly becoming a reality, thanks to options of the kind offered by HP Distributed Systems Networks (HP-DSN). It extends, both in kind and degree, the information needed by management to observe the functional details of the organization, so essential to effective control.

Although it would appear that networking would immediately increase communications costs, these costs have often dropped dramatically through networking. The reason is that through this technique, many jobs can be performed locally, instead of being transmitted and performed at a central location. Often, only the results need be transmitted.

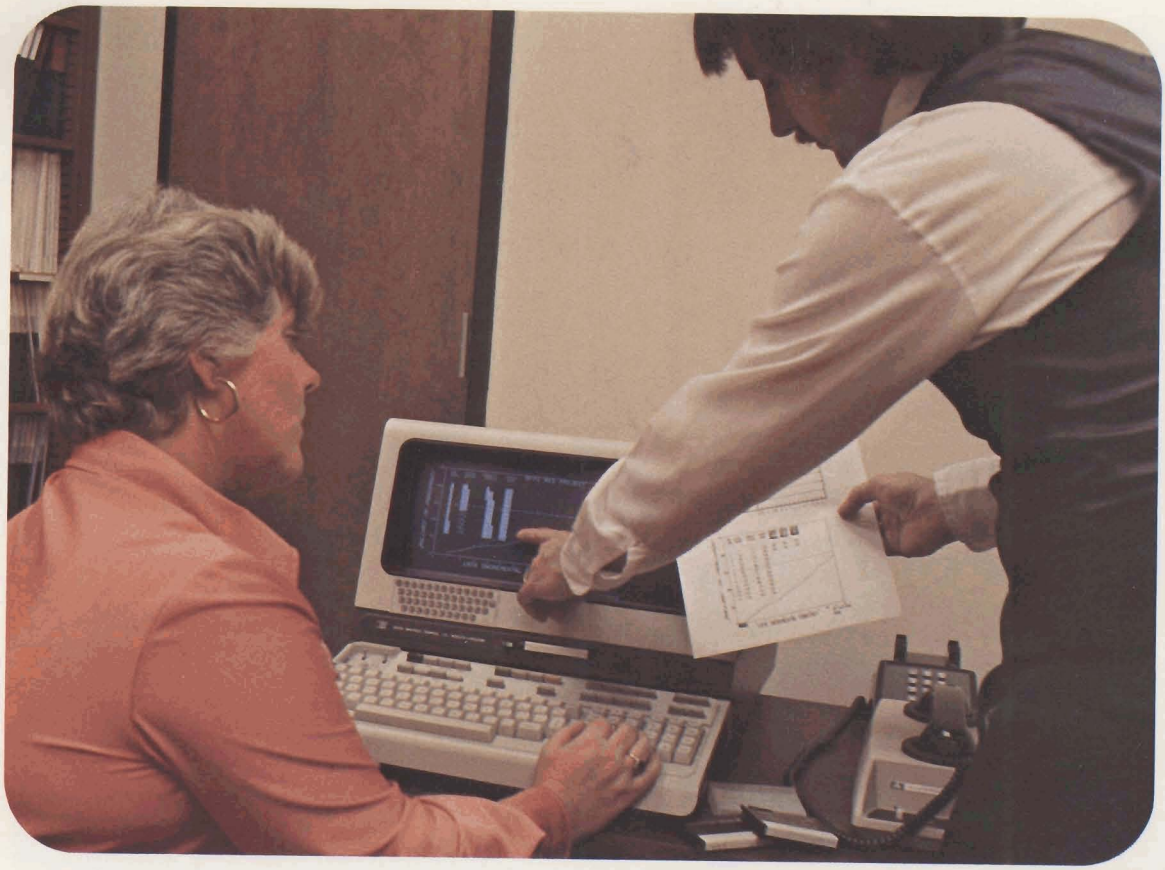
Instructing computation equipment

Computation equipment of any kind is useless without "software," sets of instructions that translate the user's needs into an electrical code understandable to the machine. Quick, easy interactions between the user and the computer, and among computers themselves, are possible only because of many man-years of laborious computer code writing. In the past, this function tended to overoccupy computer resources. Today, designers have become more adept at writing economical, less formal code. Further,

(Top)
Current generations of computer terminals not only interface with computers but have their own logic and memory as well. HP's newest terminal combines microprocessor control with raster scan technology. The Electric Power Research Institute frequently uses its terminal for automatic tabular data plotting. Another feature of the instrument is its ability to magnify any portion of its graphics memory up to 16 times for detailed observation (as illustrated on the cover of this report).

(Lower left)
A four-color plotter introduced in 1977, and a desktop programmable calculator, are two HP products used by Molectron Corporation in its tunable dye laser system for scientific research. The new plotter, connected to the controlling calculator via the HP Interface Bus, automatically selects among four different colored pens to record plots and curves.

(Lower right)
Using silicon-on-sapphire integrated circuit technology, this new printer and printing terminal can produce 180 characters a second, avoiding wasted motion through a microprocessor-controlled bi-directional printing path.



the cost of small-computer hardware has been falling at a rate of about 30 percent a year. These are the main reasons why networking of computers for efficient interchange of information and workloads has become possible.

HP has a large investment in software development, for everything from its smallest calculators to its computer networks. Writing software requires both a complete knowledge of the computing equipment and a deep understanding of its application. A set of interrelated programs, such as IMAGE (HP's prize-winning information management package) may take tens of man-years to create, yet in final form comprise just a reel of tape, a disc, or a set of plug-in cards. Each improvement in easing the customer's communication with an HP computer is the result of considerable time-consuming effort and insight on the part of HP programmers. Their influence, in fact, has the promise of being equally as important as that of the hardware design engineer.

The contributions of HP people

To sustain leadership in the dynamic world of electronics and electronic computation, a company must consistently create products of superior concept and design; it must continually develop improved manufacturing processes and techniques; and it must constantly search for more imaginative, effective methods of serving its customers.

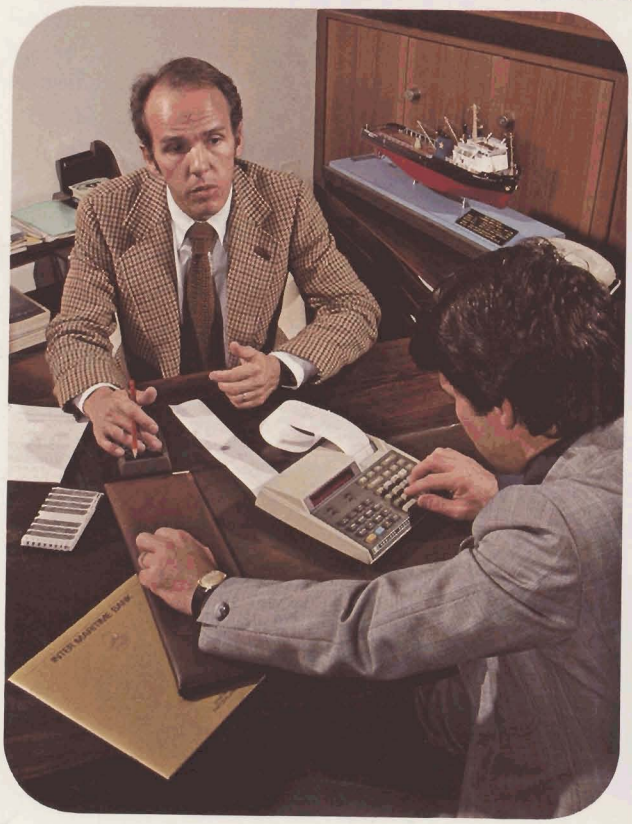
Over the years, the men and women of Hewlett-Packard have demonstrated a high degree of innovation and skill in meeting these criteria. Their ideas of yesterday established Hewlett-Packard as a major producer of instrumentation for measurement and computation. Their ideas of today, a few of which have been discussed in this special section, are strengthening that position. Their ideas of tomorrow, already forming, will continue to generate important and exciting contributions to technological progress. Their loyalty, dedication and enthusiasm has been, and will continue to be, a major factor in shaping the success of the company.

(Top)
At a press briefing, a representative of Satellite Business Systems explains how intracompany communications, including data transmission and teleconferencing, is being transmitted coast to coast via satellite. This experiment known as PROJECT PRELUDE is using computer networking equipment supplied by HP. With HP's new Distributed Systems/3000 capability, the computers can update or exchange one another's files at high speed, and share peripheral equipment and programs.

(Lower left)
This new briefcase-size HP printing calculator combines full financial evaluation and computation capabilities with statistical functions. A Swiss bank, specializing in maritime finance, finds many uses for the calculator, including investment analysis.

(Lower right)
HP's business information management system (BIMS) provides fast, cost-effective data processing for small to medium-size businesses. HP field sales engineer Irene Bever (right) discusses the use of the system with a representative of Goble Sampson Associates, distributors of water pollution control equipment, a BIMS customer.


VIDEOTEX



THE FINANCIAL STATEMENTS

SUMMARY OF QUARTERLY EARNINGS
(Unaudited)

	Three Months Ended			
	January 31	**April 30**	**July 31**	**October 31**
1977		(Millions)		
Total revenues	$301.5	$345.2	$345.1	$382.1
Cost of goods sold	140.6	154.1	155.4	172.1
Research and development	28.3	30.1	31.3	35.7
Marketing	44.6	50.9	52.2	59.8
Administrative and general	38.9	49.6	47.0	49.9
Interest	.9	1.0	1.0	1.3
Earnings before taxes on income	48.2	59.5	58.2	63.3
Taxes on income	22.1	27.4	27.7	30.5
Net earnings	$ 26.1	$ 32.1	$ 30.5	$ 32.8
Net earnings per share	$ .93	$ 1.13	$ 1.07	$ 1.14
1976				
Total revenues	$237.6	$283.3	$280.9	$321.8
Cost of goods sold	114.4	134.8	136.6	149.8
Research and development	24.8	27.1	27.8	27.9
Marketing	41.3	44.5	44.5	46.3
Administrative and general	30.1	34.6	34.5	39.9
Interest	.5	.8	1.2	1.6
Earnings before taxes on income	26.5	41.5	36.3	56.3
Taxes on income	11.4	17.8	17.8	22.8
Net earnings	$ 15.1	$ 23.7	$ 18.5	$ 33.5
Net earnings per share	$ .54	$ .86	$ .65	$ 1.19

On May 20, 1977, the Board of Directors approved in principle a Supplemental Pension Plan which became effective as of November 1, 1976 (see note 5 to the Financial Statements). To meet the anticipated 1977 expense of the approved plan, a $6 million accrual was made in the second quarter for the entire first half. Additional $3 million accruals were made in both the third and fourth quarters.

CONSOLIDATED STATEMENT OF EARNINGS

For the years ended October 31, 1977 and 1976

	1977	1976
	(Millions)	
Net sales	$1,360.0	$1,111.6
Other income, net (note 6)	13.9	12.0
	1,373.9	1,123.6
Costs and expenses:		
Cost of goods sold (note 2)	622.2	535.6
Research and development	125.4	107.6
Marketing	207.5	176.6
Administrative and general	185.4	139.1
Interest	4.2	4.1
	1,144.7	963.0
Earnings before taxes on income	229.2	160.6
Taxes on income (notes 1 and 3)	107.7	69.8
Net earnings	$ 121.5	$ 90.8
Net earnings per share (note 7)	$ 4.27	$ 3.24

The accompanying notes are an integral part of these financial statements.

CONSOLIDATED STATEMENT OF FINANCIAL POSITION

October 31, 1977 and 1976

ASSETS

	1977	1976
	(Millions)	
CURRENT ASSETS:		
Cash, including time deposits (1977 - $113.4; 1976 - $77.7)	$ 130.9	$ 95.1
Marketable securities, at cost which approximates market	41.9	11.7
Notes and accounts receivable, less allowance for doubtful accounts and notes (1977 - $1.0; 1976 - $0.8)	272.4	234.3
Inventories (note 1):		
Finished goods	88.6	70.7
Work in process	104.6	80.8
Raw materials	85.6	86.4
Deferred taxes on income, deposits and prepaid expenses	27.9	25.6
TOTAL CURRENT ASSETS	751.9	604.6
PROPERTY, PLANT AND EQUIPMENT, at cost (note 1):		
Land	36.9	32.0
Buildings and improvements	279.8	210.3
Machinery and equipment	163.8	141.7
Other	56.1	43.1
Leaseholds and leasehold improvements	11.9	11.6
Construction in progress	33.3	46.3
	581.8	485.0
Accumulated depreciation and amortization	203.4	170.0
	378.4	315.0
OTHER ASSETS:		
Investment in unconsolidated Japanese affiliate (note 1)	8.4	6.2
Patents and other intangible assets	2.4	2.7
Other	17.0	12.7
	27.8	21.6
	$1,158.1	$941.2

The accompanying notes are an integral part of these financial statements.

LIABILITIES AND SHAREOWNERS' EQUITY

	1977	1976
	(Millions)	
CURRENT LIABILITIES:		
Notes payable (note 2)	$ 46.9	$ 58.4
Accounts payable	45.9	31.9
Accrued expenses	137.5	105.6
Accrued taxes on income (notes 1 and 3)	61.6	34.7
TOTAL CURRENT LIABILITIES	291.9	230.6
LONG-TERM DEBT, less current portion included in notes payable above (1977 - $2.9; 1976 - $0.7) (note 2)	12.1	7.6
DEFERRED TAXES ON INCOME (notes 1 and 3)	29.7	26.2
COMMITMENTS AND CONTINGENCIES (notes 3 and 8)		
SHAREOWNERS' EQUITY (note 4):		
Common stock, par value $1 a share:		

	1977	1976		
	(Thousands of shares)			
Authorized	40,000	40,000		
Reserved for:				
Stock option plans	625	683		
Stock purchase plans	950	374		
Service award plan	103	14		
Issued and outstanding	28,479	27,996	28.5	28.0
Capital in excess of par value			208.3	171.4
Retained earnings			587.6	477.4
TOTAL SHAREOWNERS' EQUITY			824.4	676.8
			$1,158.1	$941.2

CONSOLIDATED STATEMENT OF CHANGES IN FINANCIAL POSITION

For the years ended October 31, 1977 and 1976

	1977	1976
	(Millions)	
Working capital provided:		
Net earnings	$121.5	$ 90.8
Add charges (deduct credits) not affecting working capital:		
Depreciation and amortization	47.6	39.5
Deferred taxes on income	3.5	3.7
Stock purchase and award plans	9.3	8.3
Other	(1.9)	—
Working capital provided from operations	180.0	142.3
Proceeds from sale of common stock	27.8	24.2
Proceeds of additional long-term debt	7.8	3.4
Other, net	.5	(3.5)
Total working capital provided	216.1	166.4
Working capital used:		
Investment in property, plant and equipment	115.5	103.4
Dividends to shareowners	11.3	8.4
Reduction in long-term debt	3.3	0.7
Total working capital used	130.1	112.5
Increase in working capital	86.0	53.9
Working capital at beginning of year	374.0	320.1
Working capital at end of year	$460.0	$374.0
Increase in working capital consisted of:		
Increase (decrease) in current assets:		
Cash and marketable securities	$ 66.0	$ 29.2
Notes and accounts receivable	38.1	29.5
Inventories	40.9	32.7
Deferred taxes on income, deposits and prepaid expenses	2.3	10.0
	147.3	101.4
Decrease (increase) in current liabilities:		
Notes payable	11.5	(25.2)
Accounts payable and accrued expenses	(45.9)	(24.6)
Accrued taxes on income	(26.9)	2.3
	(61.3)	(47.5)
Increase in working capital	$ 86.0	$ 53.9

The accompanying notes are an integral part of these financial statements.

NOTES TO THE FINANCIAL STATEMENTS

October 31, 1977 and 1976

1. Summary of significant accounting policies

Principles of consolidation — The consolidated financial statements include the accounts of Hewlett-Packard Company and all domestic and foreign subsidiaries. All significant intercompany accounts and transactions, including intercompany profits in inventories, have been eliminated.

The Company accounts for its investment in its unconsolidated Japanese affiliate (49 percent owned) on the basis of its equity in the underlying net assets.

Translation of foreign currency — The accounts and transactions of subsidiaries located outside the United States are translated into United States dollars at current or historical rates of exchange in accordance with generally accepted accounting principles. Company policy in prior years was in substantial agreement with current practice. Foreign subsidiary borrowings and forward exchange contracts are employed to minimize foreign exchange gains or losses on the Company's net asset position and order backlog in foreign currencies. Realized and unrealized gains and losses on forward exchange contracts undertaken to protect net assets are included currently in other income. Gains and losses on forward exchange contracts undertaken to protect order backlog are recognized at date of shipment and are classified as sales.

Foreign operations — The following amounts, included in the consolidated financial statements, relate to the operations of foreign subsidiaries. Sales from United States divisions direct to foreign customers are excluded, and intercompany sales and profits in inventories have been eliminated.

	1977	1976
	(Millions)	
Net assets:		
Working capital	$193.1	$144.0
Property, plant and equipment, net	71.5	60.5
Other assets (liabilities), net	(12.6)	(.5)
Intercompany balances, net	(45.0)	(28.9)
	$207.0	$175.1
Represented by:		
Capital stock	$ 6.9	$ 3.4
Retained earnings	200.1	171.7
	$207.0	$175.1
Net sales	$543.7	$462.8
Net earnings	$ 50.1	$ 39.4

Taxes on income — The Company's policy is to report earnings substantially on the same basis for tax and financial purposes. Deferred taxes on income are provided in recognition of timing differences between earnings reported for tax and financial purposes. Such differences relate principally to its Domestic International Sales Corporation (DISC) and to intercompany profits in inventories. Investment tax credits reduce the income tax provision in the year the related assets are placed in service.

Inventories — Inventories are principally valued at standard costs which approximate first-in, first-out, not in excess of market. Standard costs include materials, labor and overhead.

Depreciation and amortization — The principal methods and depreciable lives used in computing depreciation and amortization are listed below:

Buildings and improvements	150% declining-balance (15 to 40 years)
Machinery and equipment	sum-of-the-years-digits (3 to 10 years)
Other	sum-of-the-years-digits (4 to 10 years)
Leaseholds and leasehold improvements	straight-line (period of the lease)

Depreciation and amortization on such assets charged to operations amounted to $46.5 million in 1977 and $38.6 million in 1976. Maintenance and repairs are charged to expense as incurred. When property is sold or otherwise disposed of, the asset and accumulated depreciation accounts are relieved and the difference between the net carrying value and the net proceeds is included in other income.

2. Short-term and long-term debt

Short-term — The unused portion of line of credit agreements with various foreign banks was approximately $108 million and $74 million at October 31, 1977 and 1976, respectively.

Information relating to short-term debt during years ended October 31, 1977 and 1976 is as follows:

	1977	1976
	(Millions)	
Balance at October 31	$44.0	$57.7
Weighted-average interest rate in effect at year-end	13.3%	16.0%
Highest month-end balance	$56.6 (January, 1977)	$57.8 (September, 1976)
Average borrowings during the year computed on month-end balances	$50.2	$43.8
Weighted-average interest rate on average borrowings during the year	15.3%	13.0%

Interest expense incurred in foreign operations to finance trade receivables is included in cost of goods sold and has been charged to customers as part of the selling price of products sold. Such interest expense amounted to $5.0 million in 1977 and $3.2 million in 1976.

Long-term — Nearly all of the long-term debt outstanding at October 31, 1977 and 1976 is foreign borrowings. Maturities of long-term debt extend to 2008, and interest rates range from percent to 15 percent.

3. Taxes on income

In 1976, the United States Internal Revenue Service (the "Service") completed an examination of the Company's federal income tax returns for the two years ended October 31, 1973. The Company agreed to adjustments which resulted in additional income and related United States federal income taxes which were reported in 1976 (see note 6). With respect to other adjustments, additional United States federal income taxes of approximately $16 million (exclusive of interest) have been proposed to which the Company has not agreed. Of such amount, $8.5 million relates to the earnings of the Company's Domestic International Sales Corporation (DISC). The Service has contended that certain costs and expenses should have been allocated to DISC, the effect of which would be to lower its tax deferred income and increase the taxable income of the Company. Since DISC's inception in 1972, the Company has provided for all related deferred taxes. Consequently, such additional proposed taxes of $8.5 million and any additional taxes relating to DISC which may be proposed in future years have been fully accrued in prior years. This proposed adjustment relates only to when the taxes are payable.

The remaining $7.5 million of the $16 million of adjustments proposed by the Service relates principally to the earnings of the Company's subsidiaries in Singapore and Malaysia, which are substantially tax free under pioneer status acts of these countries. The Service has challenged the Company's method of accounting for the earnings of these two subsidiaries in fiscal 1972 and 1973 and has asserted that substantially all of such earnings should have been reported as taxable earnings of the parent company. The Company believes that the earnings of these subsidiaries in 1972 and 1973 are properly attributable to them, and not to the parent company, and has continued to report such earnings on substantially the same basis for all subsequent periods.

The Company has protested the proposed adjustments and the protest is currently being considered by the Service. After review of the matter with counsel, the Company believes it is unlikely the Service will be able to maintain successfully its current position that substantially all of the earnings of the subsidiaries should have been attributed to the parent company. Because of the preliminary nature of the case, the Company is unable to estimate the amount of additional taxes it might incur upon a final determination of this matter or when any such determination might occur. If the issues cannot be resolved to the Company's satisfaction, the Company intends to contest the proposed adjustments in the courts.

The Service is currently examining the Company's federal income tax returns for the two years ended October 31, 1975. Federal income tax returns for years subsequent to October 31, 1975 are also subject to examination by the Service. In 1974, 1975, 1976 and 1977 the Company's subsidiaries in Singapore and Malaysia reported tax free earnings of $22.4 million, $21.9 million, $15.6 million and $21.3 million, respectively. The Company expects that, upon examination, the Service will similarly propose reallocation of a substantial portion of such earnings to the parent company in the United States, in which case the

Company would likewise protest any significant proposed tax adjustments. The Company is unable to estimate what additional liabilities it may incur for years subsequent to 1973. The tax liability as finally determined for 1972 and 1973 will not necessarily be determinative of the tax liability for any subsequent years.

The Company believes that the outcome of these matters will not have a material adverse effect on the Company's operations or financial position even if the Service were to prevail in its position with respect to fiscal 1972 and 1973 and even if all of the earnings of the Singapore and Malaysia subsidiaries from 1974 to 1977 were reallocated to the parent company. Should final determination of these matters occur in any one year, however, the amount of such determination could result in a material charge to that year's reported net earnings.

The components of the provision for taxes on income are presented below:

	1977	1976
	(Millions)	
Federal taxes		
Current	$ 65.0	$41.4
Deferred	(0.3)	1.4
	64.7	42.8
Foreign taxes		
Current	31.2	21.0
Deferred	(.9)	(1.7)
	30.3	19.3
State taxes	12.7	7.7
	$107.7	$69.8

The composition of the deferred tax provision is stated below:

	1977	1976
	(Millions)	
Deferred tax provision:		
DISC income	$ 3.5	$ 3.6
Elimination of intercompany profits in foreign subsidiary inventories	(2.2)	(3.7)
Other	(2.5)	(.2)
	$ (1.2)	$ (.3)

The difference between the United States statutory income tax rate (48 percent) and the Company's effective federal and foreign income tax rate, after deduction of state taxes on income, is reconciled as follows:

	Amounts (Millions)		Percentages	
	1977	1976	1977	1976
Federal and foreign taxes on income at the United States statutory rate	$103.9	$73.4	48.0%	48.0%
Taxes on earnings of the Company's Singapore and Malaysian subsidiaries which are substantially tax free under pioneer status acts and export incentives to 1982	(9.0)	(8.2)	(4.1)	(5.4)
Investment tax credits	(2.6)	(2.3)	(1.2)	(1.5)
Other, net	2.7	(.8)	1.2	(.5)
Federal and foreign taxes on income provided in the consolidated statement of earnings	$ 95.0	$62.1	43.9%	40.6%

United States federal income taxes have not been provided on undistributed earnings of foreign subsidiaries aggregating $200.1 million in 1977 and $171.7 million in 1976 because, in the Company's opinion, undistributed earnings of foreign subsidiaries will be required for use in their operations.

4. Stock option and stock purchase plans

Stock option plans — All outstanding options under the qualified stock option plan were granted to employees at prices equal to market value of the stock at the date of grant. Generally, qualified options are exercisable cumulatively at the rate of 25 percent annually beginning one year from grant date and expire five years from such date.

Under the terms of the non-qualified stock option plan, options are granted at prices equal to the market value of the stock at date of grant, generally become exercisable one year after grant date and expire ten years from such date.

The Company also has non-qualified employee stock options which were granted to holders of qualified stock options in 1970 for shares equal in number to the shares underlying unexercised qualified options on their dates of expiration. Such "tandem" options are at prices equal to, and expire five years from expiration date of, the original options. Included in the table below are outstanding "tandem" options for 78,519 shares at prices from $33 to $54 per share. "Tandem" options for

10,295 and 15,496 shares were exercised in 1977 and 1976, respectively.

Following is a summary with respect to options during the two years ended October 31, 1977:

	Option price per share	Shares Outstanding	Shares Exercisable	Shares Available for grant
At November 1, 1975	$25- 88	368,866	192,016	372,900
Granted	107	59,900	—	(59,900)
Became exercisable	58- 88	—	58,775	—
Exercised	25- 88	(58,434)	(58,434)	—
At October 31, 1976	25-107	370,332	192,357	313,000
Granted	73	123,200	—	(123,200)
Became exercisable	58-107	—	59,625	—
Exercised	25- 74	(47,925)	(47,925)	—
Cancelled	41- 74	(10,735)	(10,735)	—
At October 31, 1977	$33-107	434,872	193,322	189,800

The Company has arrangements to make loans to eligible employees to fund the exercise of their options.

Stock purchase plans — The Company and certain of its subsidiaries have employee stock purchase plans whereby employees may contribute not in excess of 10 percent of base pay toward purchase of the Company's shares and the Company will contribute 25 percent of the purchase price (approximate market value).

Stock appreciation rights — In November, 1977, the Board of Directors approved a stock appreciation rights (SAR) program for officers which will be submitted for shareholder approval at the annual meeting of shareholders on February 28, 1978. If approved, the SAR program will require officers receiving SAR's to choose between exercising a stock option or exercising an SAR with respect to the same shares. They may elect to receive the gain in cash, shares or in any combination thereof, except that any election to receive any cash must first be approved by a committee composed of all directors who are not eligible to participate in any of the Company's stock option or SAR programs. While these rights will affect current earnings, the Company believes that the effect will be insignificant in any one year.

5. Pension and profit sharing retirement plans

Substantially all employees are covered under various pension and profit sharing retirement plans. In 1977, the Company adopted a Supplemental Pension Plan for its U.S. employees, effective November 1, 1976, which supplements the existing U.S. Deferred Profit-Sharing Retirement Plan. The adoption of the plan caused a reduction in 1977 net earnings of approximately $5.9 million, or 21 cents a share. See page 26 for the effect on interim periods. Contributions to the existing U.S. Deferred Profit-Sharing Retirement Plan are discretionary on the part of the Board of Directors; however, the Supplemental Pension Plan requires the Company to make contributions to assure the specified minimum retirement benefits.

Prior to the adoption of the Supplemental Pension Plan, all foreign and domestic pension and deferred profit sharing plans were essentially fully funded. Since past service costs incident to the Supplemental Pension Plan cannot be deducted in one year for financial or U.S. tax purposes, the Company now has an unfunded pension liability. At October 31, 1976, the date of the Plan's valuation, the unfunded past service cost was approximately $69 million. Past service costs are being funded and amortized over 30 years. The Company plans to continue fully funding all plans except the Supplemental Pension Plan which will be funded as described above.

Total expenses for worldwide profit sharing retirement and pension plans were $37.5 million in 1977 and $17.8 million in 1976.

6. Other income, net

Major items included in other income, net are shown below:

	1977	1976
	(Millions)	
Leasing and rental income, net	$ 5.6	$ 5.7
Interest income	8.8	5.8
Equity in net earnings of unconsolidated Japanese affiliate (dividends of $0.2 were received in both 1977 and 1976)	2.4	1.1
Foreign currency gains (losses), net (note 1)	—	(1.3)
Income adjustments related to tax examination (note 3)	—	3.8
Other, net	(2.9)	(3.1)
	$13.9	$12.0

7. Net earnings per share

Net earnings per share is based on outstanding shares at each year-end. The use of weighted-average number of shares outstanding during the years would have no significant effect on earnings per share. Outstanding stock options considered

to be common stock equivalents have not been included since the effect would be immaterial.

8. Commitments

At October 31, 1977, the aggregate obligations of the Company and its subsidiaries under long-term leases for real and personal property in effect at that date were as follows:

	(Millions)
1978	$13.2
1979	8.5
1980	6.4
1981	4.5
1982	3.3
1983-1987	10.0
1988-1992	4.7
1993-1997	3.1
Through 2033	9.5
	$63.2

Certain of the leases also require additional payments for property taxes, insurance and ordinary maintenance and repairs. Some leases include escalation clauses. Rent expense amounted to $17.5 million in 1977 and $16.8 million in 1976.

At October 31, 1977, the Company and its subsidiaries were committed for plant site acquisition, facility construction and related machinery and equipment purchases aggregating $54 million.

9. Quarterly earnings (unaudited)

The unaudited summary of quarterly earnings for years ended October 31, 1977 and 1976, is presented on page 26.

10. Estimated replacement costs (unaudited)

The Company was required by the Securities and Exchange Commission to estimate the replacement cost of its inventories and plant and equipment. This information and its estimated effect on depreciation expense and cost of goods sold for the year is included in the annual report, Form 10K (which is available on request to the Corporate Secretary).

Historically, the Company has been able to maintain profit margins, despite inflationary pressures, by pricing its products to keep pace with changing manufacturing and operating costs and by introducing new and improved products. The Company's ability to continue introducing new products, and improving existing ones, plays a major role in maintaining future profitability. Because the Company is growing, plant and equipment is relatively new and generally includes the latest technology. Inflationary effects on equipment costs do not tend to be significant, on the average, due to the relatively short economic useful lives which apply to equipment used in a changing technological environment. While the inflationary pressures on building replacement costs have been significant, the Company's building program has been the result of expansion — not replacement. The use of accelerated depreciation methods has minimized the effect of higher replacement costs on earnings. For these reasons the Company believes the effect of inflation on its financial statements is not significant.

REPORT OF INDEPENDENT CERTIFIED PUBLIC ACCOUNTANTS

The Board of Directors and Shareowners
Hewlett-Packard Company:

We have examined the consolidated statement of financial position of Hewlett-Packard Company and subsidiaries as of October 31, 1977 and 1976, and the related consolidated statements of earnings, capital in excess of par value, retained earnings and changes in financial position for the years then ended. Our examinations were made in accordance with generally accepted auditing standards and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, such financial statements present fairly the consolidated financial position of Hewlett-Packard Company and subsidiaries at October 31, 1977 and 1976, and the consolidated results of their operations and the changes in their financial position for the years then ended, in conformity with generally accepted accounting principles applied on a consistent basis.

Main Lafrentz & Co.

San Francisco, California
December 28, 1977

Management's Discussion and Analysis of the Consolidated Summary of Earnings

Net sales for 1977 increased 22 percent over 1976, compared to a 13 percent increase in 1976. All of the product groups contributed to increases in net sales for the three years ended October 31, 1977. Growth greater than the Company average was achieved in 1977 by the analytical instrumentation and electronic data products groups, and in 1976 by the medical electronic equipment and electronic data products groups. The rate of growth in medical electronic equipment declined in 1977, due in part to recently enacted and pending federal and state legislation designed to contain medical costs.

Orders for 1977 increased 25 percent over the prior year compared to a 15 percent increase in 1976. In both years domestic markets grew faster than international markets. In 1977, domestic orders increased 30 percent over 1976 while international orders increased 19 percent. In 1976, domestic orders increased 18 percent while international orders increased 11 percent.

In 1977, the net earnings increase of 34 percent exceeded growth in orders and net sales due primarily to substantially improved performance in all product groups except medical electronic equipment. Medical electronic equipment margins declined due to higher expenditures in research and development. A major factor in the Company's earnings improvement was the introduction of many new products which were well received in the marketplace at very satisfactory margins. The success of new products contributed to the lowest cost of goods sold ratio in any of the last five years. Otherwise, the Company's total expenses were at lower proportional levels than in 1976 except for the adoption of a supplemental retirement plan for its U.S. employees which increased administrative and general expense approximately $12 million.

In 1976, net earnings improved 9 percent over 1975. Medical electronic equipment and test, measuring and related items groups experienced pre-tax earnings above the Company average. Electronic data products' pre-tax earnings declined in 1976 due to reduced margins in hand-held calculators. The decline in hand-held calculator margins was due to increased competition and substantially lower price levels throughout the industry. Higher research and development expenditures in analytical instrumentation reduced pre-tax earnings slightly in 1976 but pre-tax earnings were restored in 1977 due to new product introductions. The overall cost of goods sold ratio increased from 46.8 percent in 1975 to 47.7 percent in 1976 due to price pressures mentioned above. All other expense levels and taxes on income remained at the same relative levels as 1975 except interest expense. The interest expense increase reflected a higher level of short-term borrowings utilized primarily to finance the startup period in the Brazil manufacturing operation and a more active borrowing program to minimize exposure to fluctuations in foreign currencies.

Net earnings as a percent of net sales increased in 1977 over 1976 and decreased in 1976 compared to 1975 as a result of the above listed factors.

PRICE RANGE OF HEWLETT-PACKARD STOCK

Quarter ended	High	Low
January, 1976	$113	$ 91⅜
April, 1976	117¾	104¾
July, 1976	117½	99⅝
October, 1976	109⅜	80
January, 1977	95⅜	75⅝
April, 1977	78¼	68⅛
July, 1977	83⅝	68⅞
October, 1977	84⅞	69⅛

The company's stock is traded on the New York Stock Exchange and the Pacific Stock Exchange. Cash dividends have been paid semiannually each year since 1965. Per share amounts are included in the Ten-Year Summary on pages 38-39.

TEN-YEAR CONSOLIDATED SUMMARY

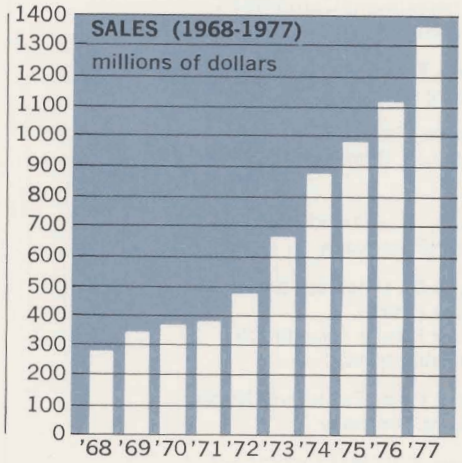
(Millions)

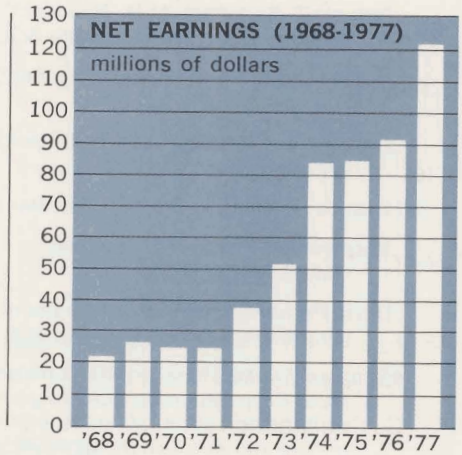
Years ended October 31

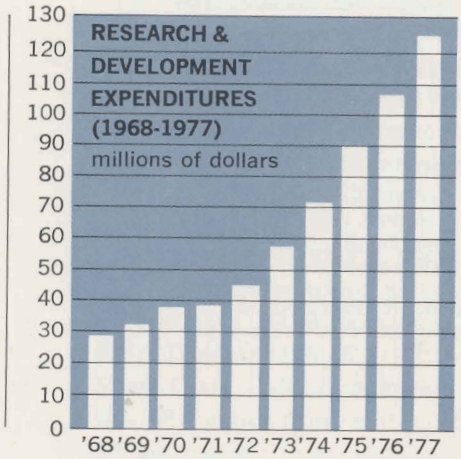
	1977	1976	1975	1974	1973
Net sales	$1,360	$1,112	$ 981	$ 884	$ 662
Other income, net	14	12	9	9	12
Total revenues	1,374	1,124	990	893	674
Costs and expenses:					
Cost of goods sold	622	535	463	422	313
Research and development	125	108	90	71	58
Marketing, administrative and general	394	316	286	247	203
Interest	4	4	2	9	5
Total costs and expenses	1,145	963	841	749	579
Earnings before taxes on income	229	161	149	144	95
Taxes on income	108	70	65	60	44
Net earnings	$ 121	$ 91	$ 84	$ 84	$ 51
Per share[a]:					
Net earnings	$ 4.27	$ 3.24	$ 3.02	$ 3.08	$ 1.89
Cash dividends	$ .40	$ .30	$ .25	$ .20	$ .20
Common shares outstanding at year-end[a]	28	28	28	27	27

[a] *Based on the shares of common stock outstanding at the end of each year, giving retroactive effect for the 2 for 1 stock split in February, 1970.*

1972	1971	1970	1969	1968
479	$ 375	$ 364	$ 336	$ 277
4	4	3	—	2
483	379	367	336	279
223	185	174	157	134
44	39	37	32	29
139	108	106	90	71
2	1	2	1	1
408	333	319	280	235
75	46	48	56	44
37	22	24	30	23
38	$ 24	$ 24	$ 26	$ 21
1.45	$ .92	$ .92	$ 1.03	$ .84
.20	$ .20	$ .20	$ .10	$ .10
26	26	26	25	25







DIRECTORS

Luis W. Alvarez, Professor of Physics, University of California

Ernest C. Arbuckle, Retired Chairman of the Board, Wells Fargo & Company

†**George F. Bennett,** President and Chief Executive Officer, State Street Investment Corporation (investment company)

Robert L. Boniface, Executive Vice President, Hewlett-Packard Company

Robert Minge Brown, Partner, McCutchen, Doyle, Brown and Enersen (law firm)

William P. Doolittle, Vice President, Hewlett-Packard Company

Robert J. Glaser, M.D., President and Chief Executive Officer, Henry J. Kaiser Family Foundation (private charitable trust)

William R. Hewlett, Chief Executive Officer, Hewlett-Packard Company

James D. Hodgson, Business Consultant

Antonie T. Knoppers, M.D., President, St. Luke's Institute for Health Sciences, New York

Ralph E. Lee, Executive Vice President, Hewlett-Packard Company

Dean O. Morton, Executive Vice President, Hewlett-Packard Company

†**Francis Moseley,** Technical Consultant

Bernard M. Oliver, Vice President, Hewlett-Packard Company

David Packard, Chairman of the Board, Hewlett-Packard Company

†**Thomas P. Pike,** Honorary Vice Chairman, Fluor Corporation (engineering and construction of oil refineries, offshore drilling, mining and petro-chemical facilities)

Edwin E. van Bronkhorst, Vice President and Treasurer, Hewlett-Packard Company

John A. Young, President and Chief Operating Officer, Hewlett-Packard Company

Emeritus Directors

Harold H. Buttner, Retired Vice President, International Telephone and Telegraph Corporation

Frederick E. Terman, Vice President and Provost Emeritus, Stanford University

† *Audit Committee*

OFFICERS

David Packard, Chairman of the Board

William R. Hewlett, Chief Executive Officer and Chairman of the Executive Committee

John A. Young, President and Chief Operating Officer

Robert L. Boniface, Executive Vice President

Ralph E. Lee, Executive Vice President

Dean O. Morton, Executive Vice President

Jean C. Chognard, Vice President, Patents and Licenses

Raymond M. Demere, Jr., Vice President, Corporate Manufacturing Services

William P. Doolittle, Vice President, International

John L. Doyle, Vice President, Personnel

Paul C. Ely, Jr., Vice President and General Manager, Computer Systems Group

Bernard M. Oliver, Vice President, Research and Development

Alfred P. Oliverio, Vice President, Marketing

William E. Terry, Vice President and General Manager, Instrument Group

Edwin E. van Bronkhorst, Vice President and Treasurer

W. Bruce Wholey, Vice President, Corporate Services

Ray L. Wilbur, Jr., Vice President, Human Resources

S. T. Jack Brigham III, Secretary and General Counsel

CORPORATE OFFICES
1501 Page Mill Road, Palo Alto, California 94304

DOMESTIC OPERATIONS

Manufacturing

California: Cupertino, Mountain View, Palo Alto, San Diego, Santa Clara, Santa Rosa, Sunnyvale
Colorado: Colorado Springs, Fort Collins, Loveland
Idaho: Boise
Massachusetts: Andover, Waltham
New Jersey: Rockaway
Oregon: Corvallis, McMinnville
Pennsylvania: Avondale

Marketing

Regional Headquarters: North Hollywood, California; Atlanta, Georgia; Rolling Meadows, Illinois; Rockville, Maryland.
Sales and Service Offices: In more than 60 cities throughout the United States.

INTERNATIONAL OPERATIONS

Manufacturing

Campinas, Brazil
Grenoble, France
Böblingen and Karlsruhe, German Federal Republic
Tokyo, Japan
Penang, Malaysia
South Queensferry, Scotland
Singapore

Marketing

Regional Headquarters: Palo Alto, California; Geneva, Switzerland.
Sales and Service Offices: More than 100 in 64 countries.

TRANSFER AGENT AND REGISTRAR
Crocker National Bank, San Francisco

FORM 10-K REPORT
Information concerning the company's operations and financial position is provided in this report, and in the Form 10-K report filed with the Securities and Exchange Commission. A copy of the 10-K report will be furnished on request to the Corporate Secretary, Hewlett-Packard Company, 1501 Page Mill Road, Palo Alto, California 94304.

ANNUAL MEETING OF SHAREOWNERS
The annual meeting will be held at 2 p.m., Tuesday, February 28, 1978, at Hewlett-Packard's Santa Clara Division plant, 5301 Stevens Creek Boulevard, Santa Clara, California. A formal notice of the meeting, with a proxy statement and form of proxy, will be mailed to each shareowner separately from this report.

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