Ideas for Action

Developments, trends & useful proposals for the attention of managers

Edited by
Timothy B. Blodgett

Marketing strategies to maintain full employment

Fred K. Foulkes and Anne Whitman

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A growing number of U.S. companies are experimenting with the notion of employment security. Test programs are under way in, for example, the can-manufacturing, telecommunications, steel, aluminum, and auto industries.

Leading companies that have long experience with employment security claim that the benefits are loyalty and low costs. Their turnover averages only a fraction of the national figure. These companies claim that they meet less internal resistance to technological change, incur lower training costs, enjoy greater recruiting advantages, and pay much less for unemployment insurance.

A commitment to employment security obliges the company to stabilize production so that employees have a steady, reliable flow of work. How does the company iron out the peaks and fill in the valleys of fluctuating demand so that it can hold that flow steady? Our recent examination of 30 full-employment corporations demonstrates that certain long-range marketing strategies can contribute to the ability to maintain employment security programs. (The companies are listed in the insert.)

Five policies

We identified five policies that can help make employment security feasible:

1. Avoid dependence on a single market or a few customers.
2. Protect and augment the sales department.
3. Plan distribution and promotion to smooth demand.
4. Introduce and withdraw products gradually.
5. Try to dominate a market or a market niche by producing at low cost.

While it would be impossible to prove, conceivably the fixed costs that a full-employment posture incurs spur corporate efforts to boost sales, find new markets, and thereby ensure steady growth. As for the employees, they should lack no incentive to work hard for the company if the poor performers are fired.

Let us discuss the five listed policies in order.

Seek a diverse customer group. The president of one of the 30 companies explained his policy this way: "From the beginning we wanted a diverse customer group because, for our own security, we didn't want to be dependent on any particular customers or sectors of the economy." This company sells to more than 400,000 accounts, none of which represents more than .05% of volume. So fluctuations in any single customer's purchases have little impact on production.

To avoid large windfalls or slowdowns in orders, some of the companies we studied put a ceiling on the amount of business they conduct with government agencies. For instance, Gorman-Rupp, a manufacturer of pumps, for many years limited its government sales to 5% of its total

business. (Recently Gorman-Rupp adjusted this limit to 12% to 15% because of a poor outlook in several industries it serves.)

Once, in its infancy, Hewlett-Packard rejected a large government contract for reasons of employment stability. A company officer recalled: "The $7 million contract would have been completely out of our bracket. It would have meant hiring a lot of people and firing them at the end of the contract. It was clear that this would affect not only the temporary people but also those who were permanent. They would know that any time we saw an opportunity to make money we would grab it, regardless of the results for people."

The contract would have been a good money maker for HP, but the disruption it would have caused contradicted company philosophy. According to this executive, the philosophy is: "When you come to work at Hewlett-Packard we hope we are offering you a permanent job. You do your work well and we will provide the employment."

Another way to minimize large temporary increases in labor requirements is to seek government business for items that resemble the company's off-the-shelf products. An initial government request for a product may list a hundred or more specifications. HP, for one, tries to satisfy the federal requirements with a regular product, so it negotiates with the government agency to trim the number of specifications. Sometimes this process produces modification of government requirements, and sometimes the would-be contractor decides not to submit a bid because the specifications remain unsatisfactory.

Protect the sales effort. Because the sales, engineering, and research functions are viewed as the means of obtaining orders, companies concerned with employment security avoid cutting back these departments during a recession. In fact, several companies move people from manufacturing and other functions to the sales area during economic downturns.

When the Bank of America recently closed several smaller branches, it transferred some of the tellers and administrative support staff to telemarketing and retrained others to work in its discount brokerage subsidiary. During recessions Lincoln Electric Company transfers office and factory workers to sales or sales support positions. Lincoln posts these opportunities as it would any job, interviews and selects from among the applicants, and puts those selected through a six-week training program in the sales department.

Adjust distribution and promotion. Procter & Gamble, an early proponent of employment security, reorganized its distribution system in the 1920s in an effort to steady demand. The company had found that wholesalers were causing wide fluctuations in sales by buying soap and stockpiling it when prices were low or when special promotions were offered. To stabilize demand, P&G began to market its products directly to retailers and consumers and to curtail promotions. With direct distribution, P&G improved its sales forecasting and inventory control and thereby steadied the demand curve. The company also stepped up promotion toward the customers most consistent in placing orders.

In its effort to maintain a predictable flow of revenues, one company we studied offers attractive leasing options to customers. By leasing a certain amount of product rather than selling it, the company has opted for certainty over the long run and therefore employment stability.

Be slow to introduce and withdraw products. Some corporations committed to employment security, especially high-tech organizations, refuse to run to the market with a new product that is superior technically but whose reliability is untested. They do not wish to see their market share peak early and then fall when it could have grown deliberately to a healthy percentage. Such companies prefer a six-month delay to iron out the bugs before bringing the product out.

Digital Equipment, for example, reports that it lets its leading customers, such as government research labs, push new products. After getting pressure from its customers – in other words, making sure that demand exists – the company works hard to develop a reliable product. Hewlett-Packard has been described as a "counterpuncher." When a competitor offers a new product, HP engineers making service calls ask their customers what they like or dislike about the new device. Soon the HP salespeople are calling on customers again with a design that answers their needs more exactly (HP hopes) than the competitor's does. The result, the company claims, is satisfied and loyal customers and more stability in its product lines.

IBM also tries to learn from others' mistakes. This company is rarely the first to adopt a technical advance; rather, it stresses better design and more effective marketing. In the early stages of product introduction, IBM also tries to maximize customer satisfaction with respect to parts, service, warranty, operator training, maintenance, and delivery. IBM's rationale is that a well-tested product, delivered on time, backed by a well-trained service force, and supplemented with prompt shipment of repair parts, will be appreciated long after the splash of glamorous new technology has subsided. This measured approach to the marketplace supports long-term growth and employment stability.

Likewise, the "people factor" comes to bear at the time headquarters decides to withdraw a product from the market. One official at a company we studied commented: "I can remember times when the decision had been made to withdraw a product from the market. But someone objected that there were x number of people involved, so we decided to keep the item on the price list for another year or so and gradually phase it out. This gave us time to move the affected employees into other areas."

Try to dominate a market. For many companies, domination of a market or market niche helps insulate them from the variations in demand due to competition and guarantees a steady level of work for their employees. Even in their formative stages, Federal Express and People Express moved fast to commanding positions in their industries, and they have expanded the definition and nature of their markets. Federal Express has dramatically boosted the demand for rapid delivery. People Express has raised the number of passengers choosing air travel as their mode of transportation, at the expense of rail, bus, and car travel.

Low-cost production is also a main strategy of companies seeking market dominance. Federal Express and People Express are the low-cost producers in their respective markets, partly through their pioneering of the concept of sorting hubs. Central sorting facilities enhance shipment reliability and give these carriers more flexibility in use of equipment and availability of personnel.

Full-employment companies like Lincoln Electric, Chaparral Steel, IBM, Nucor, and Quill illustrate the advantage of being the low-cost producers in their industries. Representatives at Chaparral and Nucor, also a steel producer, reported that during the recent economic downturn they gained market share because of their cost advantages. [If a company overprices its products, it of course runs the risk of having a competitor seize a large share of the market very fast.]

The long view

Jan Erteszek, president of Olga Company, has said, "Once you decide that a primary goal is to plan for full employment and not for short-term kills, then everything you do is subtly different." According to Sheldon Weinig, chairman of Materials Research Corporation, the most important difference in running a full-employment company "is that management learns to develop a much longer term strategy."

The decision to commit the organization to stable employment is probably not appropriate for big government contractors, highly cyclical companies, captive suppliers, or companies scrambling to get established in new markets. But companies that have a diverse customer base and enjoy flexibility in the functions we have described are in a good position to stabilize their work loads and provide employment security. And many of the large successful companies that provide employment security today began the practice when they were quite small.

[More Ideas for Action on page 36]

Committed companies

We have identified 30 U.S. companies that offer employment security:

- Advanced Micro Devices
- Bank of America
- Chaparral Steel
- Data General
- Delta Air Lines
- Digital Equipment
- Eli Lilly
- Federal Express
- Fel-Pro
- Fort Howard Paper
- Gorman-Rupp
- Hallmark Cards
- Herman Miller
- Hewitt Associates
- Hewlett-Packard
- H.P. Hood
- IBM
- Lincoln Electric Company
- Manufacturers Hanover
- Materials Research
- Morgan Guaranty
- Nucor
- Olga Company
- People Express
- Piggly Wiggly Carolina
- Quill Corporation
- R.J. Reynolds Tobacco
- S.C. Johnson
- Tandem Computers
- Upjohn

The number of workers in these companies ranges from 500 at Quill, an office products distributor, to more than 350,000 at IBM. Some of the companies are manufacturers and some provide services.

Several of these organizations have had a long-standing commitment to employment security that started when they were quite small. At Fel-Pro, for example, the policy goes back 65 years. The adoption of a full-employment strategy at the Bank of America, IBM, and R.J. Reynolds dates back more than 50 years. The founder of R.J. Reynolds, to avoid laying off workers, once undertook a sales trip that created an immediate market for the company's surplus of process plug tobacco. While the commitment at Eli Lilly was not put into writing until 1950, the practice began in 1928.

Some companies never put their policies in writing or even call them policies; rather, they are simply accepted practice. According to one Digital Equipment executive, full employment "is just part of our company's culture." At Johnson Wax, employment security was described as "almost a given." Other companies, like Hewlett-Packard and Materials Research, make their belief in employment security explicit.

Employment security does not always, of course, extend to everyone. Protection may depend on position, seniority, or location. At many companies coverage includes only regular hourly people. At H.P. Hood and Herman Miller, for example, people with less than two years of service can be furloughed.

Some companies extend coverage just to regular employees working at U.S. facilities. During a recession these organizations will retrench their international operations to maintain full employment at home. At Xerox the new labor agreement applies only to Rochester, New York employees, while at IBM the commitment is worldwide. Some companies, like Eli Lilly, extend full-employment coverage to companies they acquire; others do not.

Some organizations guarantee full pay and 40 hours. Eli Lilly does so even if the employee is moved to a lower-level job. Other companies retain a work-sharing or a pay-cut proviso (or both) as part of maintenance of employment security; Nucor workers will not get laid off, but their normal 40-hour week may be reduced to 32 or even 24 hours.

Some large U.S. corporations have abandoned their historic commitment to full employment because of a depressed economy, a change in competitive situation, or a new management philosophy. Intel is one of them; the company recently laid off 900 workers.

On the other hand, some companies, both new and established, have lately introduced employment security programs. People Express offers security to its full-time employees. American Airlines' last labor contract with its pilots includes a no-furlough guarantee for the current group. Xerox's most recent labor agreement, covering its Rochester, New York workers, features a three-year employment guarantee. The guarantees at American Airlines and Xerox were granted in exchange for big union concessions.

SJ Mercury News (morning)
July 1, 1985 pSE

Cover Story

Tandem factory has eliminated the paper shuffle

By Mary A.C. Fallon
Mercury News Business Writer

AUSTIN, Texas — Waltzing parts across a factory floor usually is a paper shuffle.

From the time it arrives at a plant, a printed circuit board could be tagged with 45 pieces of paper before being nestled inside a computer.

But at Tandem Computers, the parts-to-product spin is a technology tango that has swept paper virtually off the factory floor.

A "paperless" factory gives Tandem more control of the manufacturing process, saving time and money.

"I believe we're 10 percent more productive than the traditional computer manufacturer," said Pete Primavera, Tandem's manufacturing manager.

The Cupertino-based company relies on its own fault-tolerant minicomputers to make computer terminals, power supplies and printed circuit boards in Austin and other peripherals in its newer Watsonville plant.

What used to take 45 documents in traditional computer manufacturing has been reduced to two computer programs and two pieces of paper.

"There isn't any manufacturing plant that couldn't go paperless," Primavera said.

Tandem hasn't done an analysis on how much paperless production saves the company. But the computerized system requires fewer employees.

For instance, a plant the size of Tandem's Austin operation traditionally would need 20 production-control employees. Tandem gets the same job done with 10 people, Primavera said.

As a side benefit, using computers to track work in progress and the flow of parts out of inventory can make an assembly job more challenging for the plant's nearly 300 employees.

"Employees on the floor are making decisions that used to be handled by supervisors," Primavera said.

At the employees' request, they were put in teams of two and rotate jobs.

"We thought teams would improve productivity," production worker Kathy Grubbs said. "It gives everyone a chance to do different jobs and keeps your motivation going."

Employees finish off each product with their signature, inspect each other's work for defects and repair bad parts on the spot.

"We weren't getting feedback before (this system was initiated)," she said. "Now, you learn from your mistakes because you have to fix them."

Tandem thinks the combination of an electronic factory and production-worker involvement is part of the reason that the company's turnover rate is 7.7 percent, compared with an industry average of 12 percent.

In line with the action in the gleaming, cavernous factory, Tandem has attempted to "go electronic" by having clerical and management employees tap out messages, memos and do other chores on computers.

"We don't believe we can eliminate all the paper . . . (but) we're 95 percent paper-free," Primavera said. "At first, older workers chose to cling to the paper. . . . I was a doubting Thomas myself."

The only two pieces of paper Tandem can't get rid of are the bill of lading that acknowledges goods shipped and the shipping label that's glued to the box.

Once parts are received and a small sample is tested for quality, they are moved onto the floor as needed.

As parts come in, each one gets an identifying bar code label — the same kind of label found on canned fruits or bags of chips at the local grocery store — that lets the computer know its shop-floor destination.

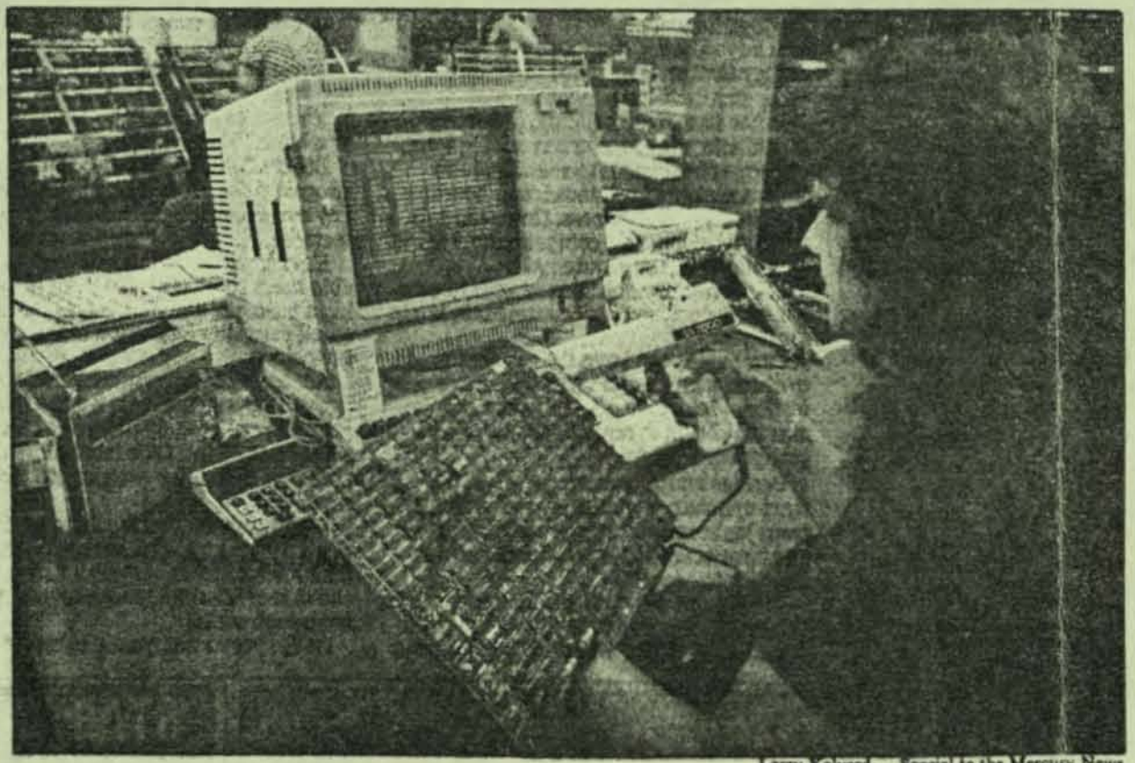
As parts pass through various processes, a laser reads their bar codes and the parts are deducted from inventory. On a standard manufacturing line, workers must tell supervisors when they are running short of parts. On Tandem's line, the computer automatically orders replenishments when it recognizes that a mound of parts at a worker's station is getting low.

Tandem is able to forecast how many products it expects to make in a certain time period, and that allows production to keep moving smoothly, Primavera said.

Customizing an order — adding a different cable or keyboard — normally would slow the flow because it's done after the product is finished and means replacing a standard part with a custom-made one. However, "hooks" in Tandem's software allow for products to be customized while manufacturing is in progress.

Tandem finds that using computers to make peripherals isn't only more efficient for the factory, but helps its salespeople.

"Our sales office in Dallas can call up the system and see when an order for a particular customer will ship," said Robert A. Shoop, marketing manager. That responsiveness goes a long way in keeping a customer happy, he said.



Larry Kolvord — Special to the Mercury News

Materials handler Terry Swen reads a bar number with a laser scanner

LEVEL 1 - 4 OF 4 STORIES

ABA Banking Journal

July, 1985

SECTION: NEW PRODUCTS AND SERVICES; Pg. 96

LENGTH: 121 words

HEADLINE: Computer system helps cut POS expenses

BODY:

Tandem Computers is marketing a transaction-processing computer system that allows owners to have their on-line applications closer to local users. Called the NonStop EXT, the system can be used by financial institutions and retailers to provide distributed terminal interface systems.

A basic package consists of two processors. Features include four megabytes of main memory, two 168-megabyte disk drives and controllers, a 45-inch-per-second tape drive and controller, a diagnostic operations and service processor, battery backup to main memory, synchronous and asynchronous communications controllers, and a Tandem 6530 terminal.

Write: Tandem Computers, Inc., 19191 Vallco Parkway, Cupertino, Calif. 95014.

Computer Systems News

July 29, 1985 p46

Tandem Income Drops 74 Percent

CUPERTINO, CALIF. — Tandem Computers Inc. last week reported a 74 percent drop in net income on a slight rise in revenue for its third quarter ended June 30.

The company said that revenue for its latest quarter was $144,165,000, up from $141,925,000 posted in the same period a year ago. Net income stood at $2,388,000, or 6 cents a share—a sharp drop from the $9,250,000, or 23 cents a share, earned in third quarter 1984.

The latest revenue figures were only slightly below those shown in the most recent second fiscal quarter, ended March 31. However, during the second quarter, Tandem earned almost $7 million, or 16 cents a share.

After the report came out last Wednesday, Tandem stock dropped 1-3/4 points to 16-1/2. It was the most heavily traded issue in the over-the-counter market.

Tandem blamed the lower net income figures on the computer industry slowdown as well as a strong U.S. dollar, which it said adversely affected overseas sales.

However, the company noted that certain expenditures also have grown during the past year, mainly the result of the recent development and introduction of the new NonStop EXT fault-tolerant computer. Product development during the latest quarter cost approximately $18 million, $5 million higher than during the same period a year ago.

For the first nine months of fiscal 1985, Tandem's revenue was $450,307,000, compared with revenue of $379,530,000 in the comparable period of fiscal 1984. Net income increased slightly, to $23,257,000 or 56 cents a share, from $21,278,000, or 51 cents a share, earned in the first nine months of fiscal 1984.

Data General Reports Loss In Quarter

(Continued from Page 36)

expectations that the company may operate at a loss in its fourth fiscal quarter ending Sept. 29.

"While we will continue to maintain stringent controls on hiring and costs, we will proceed with new product development, automation and capital investment plans as scheduled," he said.

Data General will shut some of its manufacturing operations for as little as several days or as much as two weeks in late August or September, he said. It halted manufacturing in July for a week owing to a slowing of customer orders.

The company also said its employee layoff June 17 was about 100 persons larger than the previously disclosed 1300. A spokesman said the company plans no further layoffs and plans no change in its move into retail markets with the Data General/One.

The spokesman said the order slowdown has been particularly severe in the U.S. and in industrial automation markets. However, it has been felt across all 16- and 32-bit product lines and marketing divisions, he said. The inventory write-down similarly involved components and systems among the entire product line.

For the nine-month period, income from operations plummeted 49 percent to $33.6 million from $65.8 million the same period last year. Net income was $23.8 million compared with $46.4 million in the like period a year ago.

Nine-month revenue rose 15 percent to $939.4 million from $818.5 million in the like period last year. Equipment sales as a portion of the total rose 14 percent, and service revenue was up 18 percent in the same period.

LEVEL 1 - 1 OF 8 STORIES

July 26, 1985, Friday, Final Edition

SECTION: First Section; A3

LENGTH: 50 words

HEADLINE: CORRECTION

KEYWORD: FIX

BODY:

An article in yesterday's Business section, based on information supplied by Tandem Computers Inc., said the planned shutdown of the firm's manufacturing operations in Reston would be the first in the company's history. The company discontinued production at its Bensonville, Ill., plant last year.

Tandem Profit Slides 74% in 3d Quarter

CUPERTINO, Calif. — Tandem Computers, Inc., reported a 74 per cent decline in third-quarter earnings to $2,388,000, or 6 cents a share, compared with the $9,250,000, or 23 cents a share, netted in the like period of fiscal 1984.

On a pre-tax basis, profit plunged 96 per cent to $540,000, from $14,342,000.

Sales for the 3 months ended June 30 were down 2 per cent to $116,868,000, compared with the $119,064,000 grossed last year.

Because of the decline in earnings and stagnant sales, Tandem has instituted a hiring freeze and other cost-cutting measures, management said, but declined to specify what those other measures are, noting that employes had not yet been notified of them.

Tandem officials said they will reassess the company's financial situation after July's financial results are known, and take additional cost-cutting measures if sales do not improve.

At the end of the quarter Tandem employed 5,515 worldwide.

James G. Treybig, president, said "results in the third quarter were affected by the general slowdown being experienced throughout the computer industry. The strength of the U.S. dollar compared with year-ago levels also adversely affected both revenue and earnings."

According to the company, international sales accounted for about one-third of total sales, with European sales being particularly strong.

While total revenue for the latest quarter was up, product revenue was off 2 per cent to $116,868,000, from $119,064,000 a year ago, but service and "other revenue" grew 19 per cent to $27,297,000, compared with $22,861,000.

For the first 9 months of fiscal 1985, Tandem's profit gained 9 per cent to $23,257,000, or 56 cents a share, compared with $21,278,000, or 51 cents a share, in the year-earlier period, while operating earnings slipped 1.4 per cent to $32,752,000, against $33,226,000.

Revenue was up 19 per cent to $450,307,000, from $379,530,000.

Electronic News
July 29, 1985 p61

European companies' worldwide microprocessor revenues in 1983-84 in $ m.

SGS	$35	46%
Philips	$29	93%
Thomson	$21	110%
Siemens	$19	217%
Matra-Harris	$11	1000%
Total	$115	68%

Top 10 worldwide suppliers ($2.1bn)

Source: Dataquest

European semiconductor demand

Consumption per capita in US$

	1984	1985
Benelux	12.12	12.22
France	12.41	12.71
Italy	8.27	8.09
Scandinavia	17.29	17.88
UK and Eire	20.65	20.76
W. Germany	20.99	21.25
Rest of Europe	6.12	6.15
Total Europe	13.73	13.83
U.S.	55.41	53.25
Japan	66.65	70.03
Rest of world	0.48	0.51
Total world	5.73	5.69

Source: Dataquest, May 1985

GRAPHIC: Graph, The most frequent application of computer systems in the UK is for handling credit and debit accounts, while word processing is, however, the most common application for companies in the financial services sector. The use of computers for personal records is given a very low priority in many sectors of business, according to the findings of a recent survey by the Management Studies Group of Cambridge University's Engineering Department

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quarter ended June 30, included a $137 million pre-tax write-off on inventory.

The company had a net earnings of $73.7 million, or 52 cents a share, for its fourth quarter in 1984.

Many analysts had predicted the company's loss for the quarter would be in the $35- to $65-million range.

Revenues for the quarter were $635.12 million, a decrease of 11 percent, compared to $718.8 million for the company's 1984 final quarter.

Meanwhile, Wang has reportedly set a layoff plan in motion that might mean as many as 2,500 more employees will be laid off before Labor Day (see story, page 7). The company let go 1,600 employees last month to cut costs.

In addition to the tax write-off, Wang said results for the quarter were also adversely affected by the strenth of the U.S. dollar. The company said that had the current monetary rates remained constant, compared to last year, its revenues would have only decreased 6 percent for the quarter.

Wang said that despite the fourth-quarter loss, net earnings for somewhere between $50 million and $60 million."

Colony attributed the deep plunge in earnings to "very soft" business in June and the tax write-off.

"Wang had a lot of old 2200s (2200 Series small-business computer systems) which it had to write off. I think it was best to take the write-off now. If you're going to have a bad quarter anyway, you might as well get rid of the inventory now and try to forge ahead," the analyst said.

Thomas R. Billadeau, president of TRB & Associates consulting firm of Ogunquit, Maine, also pointed out that the loss included the write-off, "one that had been building for some time."

Billadeau said the write-off was necessary as the company couldn't "carry a full value forever."

Colony said Wang needs outside management to reverse its financial plight. "They've got to bring in some outside management at this point. They need a new champion, someone who can come in and be objective about business decisions and make hard decisions for the company."

"I think what Wang needs now is for someone to come in and be a mover and shaker . . . someone Cunningham was really the leader of that group and now, with his departure, someone has got to step into that role. I don't think Carl Masi (who is reportedly heading the company's marketing) or Fred Wang (An Wang's son and a company vice president) can do that," Colony added. Both have been mentioned as presidential candidates.

Billadeau said the 11 percent decline in revenues for the quarter is being compared to "substantial business last year. So if you look at it from just a revenue perspective, it's not as awful as it could be."

"International Business Machines Corp. showed a bad quarter too, as their quarter goes, and so has everybody else. When you look at all the other companies, you can see how economic conditions would allow them to recover quickly. When you look at Wang, you don't see the same picture," Billadeau said.

"Wang's problem," Colony said, "will be to keep their customer confidence up. They don't want customers departing in hordes from the Wang ranks, they've got to keep that customer base."

Tandem Earnings Skid 74% In 3rd Qtr.

By JULI CORTINO

CUPERTINO, Calif.—Tandem Computers Inc. posted a sharp 74 percent drop in its third fiscal quarter earnings, on revenue that rose only slightly in the period.

The manufacturer of on-line transaction processing systems reported net income of $2.38 million, or 6 cents per share, for the quarter ended June 30. During its 1984 third quarter, Tandem posted net income of $9.25 million, or 23 cents per share.

Third-quarter revenue was $144.16 million, compared with 1984 third-quarter revenue of $141.92 million.

Tandem president James G. Treybig said in a statement, "Results in the third quarter were affected by the general slowdown being experienced throughout the computer industry. The strength of the U.S. dollar compared with year-ago levels also adversely affected both revenue and earnings." Some 33 percent of Tandem's sales are in international markets.

For the nine months ended June 30, net income was $23.25 million, or 56 cents a share. Income for the first nine months of 1984 was $21.27 million, or 51 cents a share, by comparison.

Revenue for the first nine months of 1985 was $450.30 million, versus $379.53 million for the like period in 1984.

"Worldwide revenue for the first nine months grew 19 percent over the same period in fiscal 1984," said Treybig. "However, this performance was below our expectations."

Analysts noted that Tandem had expected a 25 percent revenue growth for the nine-month period.

A Tandem spokeswoman attributed the fault-tolerant computer maker's low third-quarter earnings to three factors, one of which was research and development expenses that were 33 percent higher than last year. In the most recent quarter, R&D was 12.5 percent of revenue.

Costs associated with hiring 148 new employees also contributed to lower earnings, as well as costs associated with promoting three new products, the Guardian 90, EXT and IMT systems.

Rowe & Pitman Inc. analyst Louis M. Brizzolara said of Tandem's reduced earnings, "I can't accept the fact that it's just the slow economy and a general weakness in computer spending. What concerns me is that Tandem's EXT or TXP programs might be in trouble in terms of demand or customer satisfaction. Earnings could be reduced for quite some time, if that's the case."

Brizzolara, a Tandem follower since the late 1970s, said he has "put the stock on hold" because of uncertainty surrounding the company and the computer industry in general. But he noted that one plus for Tandem is the fact that it has $102 million in cash at its disposal.

Brizzolara speculated that Tandem did not shy away from increased R&D and other expenditures because it expected to make up the costs with revenue from products introduced this year.

"Tandem's cost of sales is less than 40 percent—so 60 percent is pre-tax profit," said Brizzolara. "The fact that revenue did not increase that much this quarter leads me to believe products introduced this year have not contributed significantly to sales."

July 31, 1985

THE NETWORK

Data General Corp. will announce this week several new products, including an enhanced version of its Eclipse MV/Family 4000DC (departmental computer) minicomputer, the Dasher/One series of intelligent workstations which can use the same **International Business Machines Corp.** compatible software used on Data General's One portable computer, a modified version of its Comprehensive Electronic Office (CEO) word processing package for IBM personal computers called CEOwrite, a Model 4467 printer designed to work with the new workstations, and a new version of CEO Connection which allows the sending and retrieval of files to and from an IBM PC in the MS/DOS environment.

Perkin-Elmer Corp., Norwalk, Conn. last Friday cut its work force by 240 employees, about 1.5 percent of its total 15,700 work force and gave advance notice to employees at its Oak Park, Ill., facility that it will close the plant next year and move its activities to Connecticut. Recently it reduced its levels of management by two across the board, slashed several corporate officer positions and cut the number of operating divisions by four.

McCormack & Dodge will announce Version 2.0 of its Millenium Series Software this week and will demonstrate it at its upcoming annual user group meeting in Boston.

Pathway Design Inc. has come out the winner in a trademark infringement suit brought against it by **Tandem Computers Inc.** filed in May 1984. The U.S. District Court for the Northern District of California disagreed with Tandem's claim that defendant Pathway Design's corporate name infringed on its own Pathway application development software trademark. It ruled that, though both corporation's products may be used in the same environment, they are not technically related or competitive. Pathway Design develops micro-to-mainframe links and network gateways.

The Soviet Union has placed a $1.2 million order for 4,000 systems of **Yamaha**-made MSX personal computer and **Star** printer systems, an order which trading representatives in Tokyo hope will be the first of a long-range PC purchase plan reaching 1.2 million systems by 1990. Hajime Kato, director of international operations of Tokyo-based **Shin-Jidaisha Co. Ltd.**, an information-oriented trading firm, said he signed a contract with the **Electrono Orgte Teknika,** the Soviet's computer import corporation, for 4,000 Yamaha YIS 503 Mark-88 PCs and Star Manufacturing's Gemini 10X printer. In so doing, Shin-Jidaisha beat a number of American, European and Japanese bidders, including **Commodore International, Apple** and **NEC,** for 8-bit PCs for the Soviet Union's junior high school students.

NCR Corp. has begun a program offering substantial discounts on its line of **International Business Machines Corp.** PC-compatible personal computers to authorized dealers selling to schools. The new "Education Accounts Program" is designed to give dealers a competive advantage in obtaining large volume orders from educational institutions. NCR would like to see the educational market eventually account for 10 percent of PC sales, said Vernon W. Yates, vice president and general manager of NCR's Personal Computer Division. Yates declined to specify the amount of the discount, but said "it's greater than the discount we offer dealers for non-education markets, because we know they can't compete without this." The discount program applies to NCR's PC-to-PC local area network. To participate, dealers must actively pursue the educational market. The dealer must dedicate one full-time empolyee to educational sales, participate in local trade shows and actively solicit and respond to requests for proposals.

Dr. J. Donald Millar, director of the **Public Health Service's National Institute for Occupational Safety and Health (NIOSH),** has reported to Congress that most of the video display terminals (VDTs) being produced today incorporate features that respond to health complaints originating with users. He advised a **House Health & Safety Subcommittee** that NIOSH is currently conducting a retrospective study involving some 3,000 communications workers, concentrating on possible reproductive effects of VDT use. Interviewing begins next fall with results due two years later.

MIS Week July 31, 1985 p4

FCC 'Tests

By PAUL McCLOSKEY

WASHINGTON—Federal regulators last week formally proposed to overhaul 1980 rules requiring dominant carriers to supply data processing and enhanced network services only through an arm's-length, separately financed subsidiary.

The revision, called the Third Computer Inquiry, would permit AT&T and the Bell operating companies to upgrade network intelligence based on a finding that the enhancements met various tests of marketplace competition.

Central to the new rules is an agreement among Federal Communications Commission officials that accelerating technological change demands regulatory treatment based on marketplace rather than "definitional" tests.

Computer II, designed to prevent dominant carriers from monopolizing ancillary markets, required arm's-length treatment for customer premises equipment and any service defined as enhanced under the commission's rules.

FCC common carrier bureau official Michael Slomin said that under the new proposal, regulatory treatment would be determined by the competitive nature of a service rather than its Computer II definition.

"We had a horribly inefficient result under Computer II," he said

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Philips Merges Data, Telecom

PARIS (FNS)—The telecommunications systems and data systems divisions of Philips International B.V. have been formally merged into a single new unit that will be called the Telecommunications and Data Systems (TDS) Division, effective June 1.

Jack Pelgrom, who formerly headed up the data systems division, has been named senior managing director and chairman of the new division. He will be assisted by three managing directors: W. Gert Bindels, Claude O. Fossepret and Felix A. Van Tienhoven.

Philips has already implemented a merger of its audio and video products divisions.

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Writer printer. EtherShare costs $695 per server, EtherPrint is priced at $395 per server and EtherMac user software costs $50 per user.

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REDWOOD CITY—Kontron Electronics introduced its Series III family of logic analyzers for electronic engineers, systems integrators and software designers. Hardware and software modularity allows users to reconfigure the new logic analyzers through keyboard commands or pre-set programs stored on disk. Sample rates, channel depth and all operating parameters are software configurable. The analyzers are available either as dual-floppy standalone systems or as plug-in modular systems integrated with the IBM PC. The Series III Logic Analyzers range in cost from $11,400 to more than $26,000 for installation in a dual drive standalone system.

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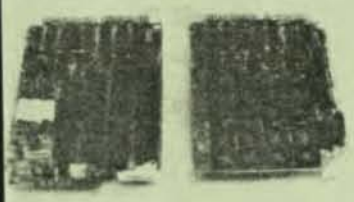

MONTEREY—Two versatile STD BUS memory cards — one providing up to 64K RAM and optional battery backup, and the other providing up to 512K EPROM — are available from Pro-Log Corp. The 7709 is a RAM card suited for applications involving data acquisition and manipulation. It is expandable in 8K byte-wide increments to 64K RAM. The 7710 is an EPROM card expandable to a maximum of 512K bytes for program storage capability. Both memory cards work with the STD BUS systems using either a 20-bit or 16-bit address bus. The 7709 is available in several different configurations and prices vary. The 7710 is priced at $265.

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MILPITAS—LSI Logic Corp. introduced the LSA 2000 family of semiconductor devices for use in military aircraft, data processing equipment and personal computers. The devices are made to speed the process of designing complex chips and reduce manufacturing costs. The chips, called structured arrays, allow designers to customize a single chip to contain functions that previously required several chips or a custom chip. The LSA 2000 family consists of six model numbers LSA2001 through LSA2007.

***

MONTEREY—Version 4.1 of the Concurrent DOS operating system is available from Digital Research. The updated version is designed to run on high-end machines such as the AT&T 6300, the Compaq Deskpro and the IBM PC AT, and to handle MS-DOS 2.1 and GEM applications. Retail versions of Concurrent DOS 4.1 allow a microcomputer to run MS-DOS or CP/M application programs simultaneously. The system has a suggested retail list price of $295.

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SANTA CLARA—Siliconix expanded its line of DC/DC voltage converters with the addition of the Si7661AA. The monolithic CMOS voltage converter provides an output voltage of -4.5 to -20.0 volts in response to an input of +20.0 volts over the full military temperature range. The Si7661AA contains a voltage regulator, an RC oscillator, a voltage level translator, four power MOS switches and a logic network on a single chip. Si7661AA components are available in two packages — the TO-99 and an 8-pin plastic mini DIP. For 100-piece quantities, the cost of the Si7661AA in a TO-99 package is $6.58 each.

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SUNNYVALE—A series of isolation voltage testers was introduced by Applied Optoelectronic Technology. The VISO-600 Series Isolation Voltage Tester is designed to provide manual or production testing of optocouplers, optoisolators, optotriacs, optorelays, reed relays and other devices for compliance with I/O voltage isolation specifications. This series of AC testers offers test voltage adjustment from zero to 7000 volts RMS and test duration that can be set from 0.1 seconds to 99.9 seconds of applied voltage.

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CUPERTINO—Tandem Computers Inc. introduced a multi-vendor system integration strategy which allows users to use their Tandem networks to provide company-wide electronic information sharing between a variety of incompatible personal computers, workstations, terminals, facsimile devices and local area networks. The strategy, Information Management Technology (IMT), includes five new products which include PS MAIL, PS TEXT EDIT, PS TEXT FORMAT, PC LINK, and FAXLINK.

Corporate Times July 1988 p 46

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CUPERTINO—A full-function financial management and accounting program for the Macintosh family was introduced by Sierra Information Systems Inc. Called Accountant's Choice, the package consists of seven modules: general ledger, accounts payable, accounts receivable, sales order processing, fixed assets, purchasing and inventory control. Accountant's Choice is designed to meet the financial and management needs of small to medium sized businesses. The single-user version is available for $695. The multi-user version is priced at $995.

***

CUPERTINO—TANDEM COMPUTERS INC. introduced a more powerful version of its Guardian operating system. Guardian is a multi-processor, network-oriented operating system that supports the NonStop architecture of all Tandem systems. Guardian 90 is compatible with Guardian, and all application software used with the previous releases of Guardian can be run with the new operating system. GUARDIAN 90 allows greater flexibility to run larger application programs by increasing user code and library space up to four megabytes, 32 times the previous amount.

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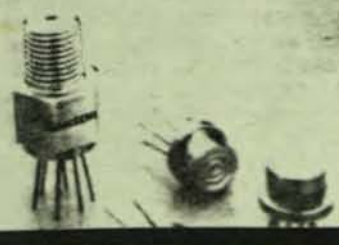
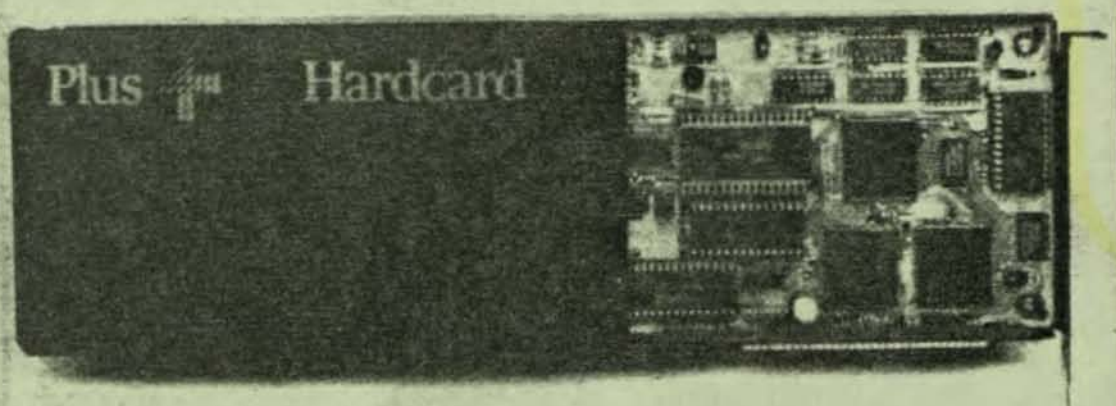


Plus Development Introduces IBM Plug-In Board



MILPITAS—Plus Development Corp. introduced Hardcard, a 3 1/2-inch hard disk add-on board that

LEVEL 1 - 4 OF 4 STORIES

ABA Banking Journal

July, 1985

SECTION: NEW PRODUCTS AND SERVICES; Pg. 96

LENGTH: 121 words

HEADLINE: Computer system helps cut POS expenses

BODY:

Tandem Computers is marketing a transaction-processing computer system that allows owners to have their on-line applications closer to local users. Called the NonStop EXT, the system can be used by financial institutions and retailers to provide distributed terminal interface systems.

A basic package consists of two processors. Features include four megabytes of main memory, two 168-megabyte disk drives and controllers, a 45-inch-per-second tape drive and controller, a diagnostic operations and service processor, battery backup to main memory, synchronous and asynchronous communications controllers, and a Tandem 6530 terminal.

Write: Tandem Computers, Inc., 19191 Vallco Parkway, Cupertino, Calif. 95014.

LEVEL 1 - 12 OF 18 STORIES

Corporate EFT Report

July 10, 1985

SECTION: IN BRIEF; Vol. 5, No. 14; Pg. 6

LENGTH: 179 words

BODY:

Tandem Computers Inc. has been busy recently penning joint marketing agreements with software vendors. The computer firm has agreed to help jointly market Customized Information Systems' (CIS) on-line accounting systems as well as Schonfeld & Associates' business modeling software to Tandem NonStop system users. CIS' on-line accounting packages include an accounts receivable system, accounts payable system, general ledger system, fixed assets system, payroll/labor distribution systems, and a project cost system (18093 Prairie Ave., Torrance, CA 90504, 213/542-6670). Schonfeld's Ignot decision support system boasts a host of applications, from simple budgeting and spread sheets to manufacturing optimizations (2556 Crawford Ave., Evanston, IL 60201, 408/725-6000). Impetus for Tandem's latest joint marketing agreements stems from Tandem Alliance, a program the computer firm launched in 1983 to encourage the development of software for Tandem users for applications such as factory automation and financial services, according to Tandem officials.

the monopoly on the system – and a US firm at that.

"The suppliers in particular are well aware that the system is crucial to their operations."

Istel's Edict marketing manager, Phillip Coathup, says: "We fully support the standards produced by the Society of Motor Manufacturers and Traders for Motornet. But we believe companies should be able to choose a system supplier, using those standards, and not have the standards forced on them by a monopolistic supplier."

Coathup insists his comments do not arise from sour grapes at having lost the contract to Geisco. But one BL source says Ford has been driving the system along from the start and wanted Giesco as the supplier.

General Motors and Peugeot-Talbot say they are fully committed to Motornet.

rom council

planning this phase was crucial, given the council's lack of experience in distributed systems.

"It was a factor in our choice, though what really won IBM the order was the wide choice of solutions it offered," he adds. A pilot scheme will start next February.

Among the areas of special interest is data security, Tombs says, through IBM's RAC/F security package on the mainframe, which runs the MVS/XA operating system. The latter was chosen "to save conversion problems later on".

Cad/Cam needs

extra Cad/Cam funding is needed, and has written to higher education institutions asking them to detail their facilities.

Replies are expected by the end of this month and the working party considering the extra funds will meet again in September.

Shift is a three-year project which will operate until 1988.

with the ICL Series 39, 2900 and ME29 mainframes and the DRS 20 minis.

Versatec is supplying its V80 printer plotters and colour wide-format plotters to **Intergraph,** supplier of turnkey Cad/Cam/CAE systems, after signing an £8 million OEM contract. The plotter will be used in Intergraph's engineering and mapping systems.

Microvitec has signed a £4 million deal with **ICL** to supply it with colour monitors for the One Per Desk voice/data workstation. The contract follows a year of discussions. The monitors will be made at Microvitec's UK plant.

Systems house Logica is the prime contractor in a £1.4 million contract with **Shell Pipeline Systems** in the Netherlands to provide a central control system for the 250 miles of a petrochemical supply network. Logica will supply hardware and software, with a telemetry system for sub-contractor AEG-Telefunken.

Norwegian minicomputer maker Norsk Data is supplying a 32-bit ND-570 computer to handle oil and gas reservoir simulation, along with other petroleum engineering programs, at **Energy Resource Consultants** in London. The £350,000 system will run the government-funded £3.5 million Pores simulator program.

Tandem's fault-tolerant Nonstop II processors have been chosen in a £400,000 contract by **Travicom,** which provides an airline reservation service for UK travel agents and an automated cargo-processing facility at Heathrow, Gatwick and Manchester airports.

British Telecom's Touchdown touch-screen computer is to be used by **British Rail** in a £350,000 system to identify the place of the train. A Waterloo installation of 28 terminals will let operations controllers direct train movements.

DALE . . . Users prefer cheaper machines with fewer functions.

Copyright Bill has Fast success

by George Black

The private members' Bill to amend the copyright law to cover software had its final Commons reading last week. It is expected to receive the Royal Assent within the next fortnight, which means it should be on the statute book by the end of September.

This represents a big success for the Federation Against Software Theft (Fast) and the computer industry lobby behind it, perhaps a unique case of the industry uniting to succeed in changing the law. It has also been accomplished with no more than a nod of approval from the government itself.

Fast says it will not be retiring at the end of this campaign but will continue to ensure that the benefits of the change are reaped in full.

According to a spokesman, Ranald Robertson of CAP, this means a role in co-ordinating enforcement of the legislation. One problem is tha the police have little expertise of their own in this field. Fast is expected to appoint a senior ex-police officer to head its liaison effort.

The international campaign goes on. Taiwan has just announced it will set up a body to stamp out piracy, after amending its law to fall in line with overseas trends. It has been much criticised as a principal culprit in piracy, but has now imposed stiff penalties against offenders.

Earlier this year Japan said it would tighten up on copyright. Many other countries are doing the same. But Singapore, still much blamed, says it will not change its law for several years.

Plessey plans to axe 700 Liverpool jobs

by Dave Madden

Plessey is to close its telephone exchange factory at Huyton, Liverpool, in a reorganisation of its telecommunications division; 700 jobs will go.

Huyton built the TXE4 electro-mechanical exchanges. British Telecom (BT) has not bought one for over a year and production has ceased.

At the same time Plessey is to concentrate manufacture of System X digital exchanges at Edge Lane in Liverpool. Plessey Telecommunications Products has been formed as a specialist payphone business, based at Chorley, Lancashire.

Plessey blames the Huyton closure in part on BT's decision not to proceed with orders for new call-logging equipment, which upgrades existing exchanges.

TASS, the Technical Administrative and Supervisory Section of the engineering workers' union, AUEW, condemns the move.

National organiser Larry Brooke claims "this disastrous decision" is a clear indication that British telecommunications manufacturing industry is being "destroyed on a systematic basis by the policies of BT supported by the government".

He fears "much worse to come". Joint union officials are due to meet today to discuss a possible response.

Leigh Weimers

Hill dwellers happy to bask in shade

SILVER LINING: When was the last time you heard of thousands of sun-loving Californians looking at overcast skies in the middle of summer and saying, "Don't you just love it?" This hasn't been a week for courting sunburns here — coping with more permanent burns in our mountains is the more pressing problem — and the sudden appearance of airborne moisture Wednesday and Thursday was an answered prayer. People weren't even angry at the Weather Bureau. "Heck, the forecasters earlier in the week were calling for clear skies and high temperatures right through the weekend," one Santa Cruz Mountains resident told me. "When the cloud cover showed up, they were as surprised as the rest of us. And you know what? I don't mind that a bit" . . . Nor do I, even though the clouds and fog Thursday held the smoke close to the ground and turned much of the Lexington hills area into a giant barbecue kettle. I've always been a ham, so being a smoked one isn't that bad. Just as long as it's not overdone.

HOT STUFF: A sense of humor helps during trying times like these. Especially if you happened to be watching the Channel 4 fire coverage at 11 p.m. Tuesday and saw the station switch to a commercial — for Kingsford charcoal, complete with a tree going up in flames. Oops . . . Among the firefighters battling the Lexington fire: **Dave Chaney**, San Jose State's best-known All- America football player in the '70s and now a Carmel schoolteacher and volunteer fireman. He was in the Soda Springs area when the fire jumped his line — one of the few times linebacker Chaney couldn't make the stop . . . The emergency is proving one thing conclusively: that Silicon Valley people aren't the tight, cold, self-centered folks some reports have made us out to be. Companies like Tandem and IBM donated equipment and materials to help the firefighters and evacuees. Non-profit groups like the Red Cross and Salvation Army did yeoman work. Individuals swamped authorities with help and offers of aid. "I couldn't believe the level of support and organization," marvels **Candy Roney** of San Jose Hospital, one of the organizations offering assistance. "When we showed up at the Vasona fire headquarters, people there knew just where we should go and what we could do. And we certainly weren't alone." A good show all around . . . And appreciated. On the Summit Road overpass above Highway 17 a spontaneous banner sprouted Thursday, decorated with balloons and put there by grateful area residents. "Thanks, firefighters — and all," it read simply. That says it completely.

ACHTUNG: Silicon Valley hasn't exactly lost its reputation for acquisitiveness, mind you, which is why German auto racer/designer **Erich Bitter** will pop into the Falore car dealership in Burlingame this afternoon. He's tabbed our territory as a key market for his Bitter auto — a German-designed, Italian-built sedan designed to compete for the BMW-Maserati-Mercedes bucks. How much is that? If you have to ask (upwards of $50K) . . . Maybe we can thank Saturday's annual Christmas in July barbecue for the cooler weather. In past years, participants shivered at Park Center Plaza, so earlier this week (when the temperature was above 100) **Kay Linquist** arranged to have outdoor heaters brought in. Hope they're needed . . . Villa Montalvo, which doesn't ordinarily encourage picnicking on its grounds, will make an exception Sunday for its concert-on-the-green with **George Cleve** and the Midsummer Mozart Festival Orchestra. (What goes with "Eine Kleine Nachtmusik?" Wurst is best.)

Columns by Leigh Weimers appear in the Mercury News Monday through Friday.

San Jose Mercury News, Friday afternoon, July 12, 1985

The Business Journal
Serving San Jose and the Santa Clara Valley

Special Section
July 15, 1985

Dear Readers,

Our "Top 25" lists are one of the weekly paper's most popular and useful features.

Now, for the second year in a row, we're pleased to bring you the preceding year's lists in book form.

If you're a Busineess Journal subscriber, the book comes as a bonus.

It's a $9.95 retail value—and is being sold for that price around the valley. The lists in it have been corrected or updated when appropriate.

* But please note that the numbers used generally date back to the week that specific list was published.

This book is just one of the additional sources of useful business-to-business information being published now by The Business Journal. As we've grown, our product—or service—to the valley has grown.

President and publisher
San Jose
Summer 1985

And a P.S.: If a colleague or friend borrows your copy, you can always get more copies of this book by calling The Business Journal direct. Just ask for our Circulation Department.

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50 HIGHEST PAID EXECUTIVES OF PUBLICLY HELD COMPANIES

Ranked by 1984 Cash Compensation In Santa Clara County
(in millions)
(close)

Executive (rank last year)	Company	Position(s)	Age	Salaries, fees, bonuses	Options, insurance, personal benefits	Contingent forms of payment	Shares of company stock owned	Cash dividend 1984	Corporate revenue 1983	Corporate revenue 1984	Share price 4/30/85
1. John Sculley (1)	Apple Computer Inc.	President, chief executive officer	46	$2,164,068	$5,910*	‡	124,700	0	$982.7	$1,515.8	$21 1/4
2. Erik O. Salbu (—)	Maxstor Systems Corp.	President, chairman	47	$1,165,000[1]	none listed	none listed	487,491*	0	$20.1	$26.2	$4
3. W.J. Sanders III (5)	Advanced Micro Devices Inc.	Chairman of the board, president, chief executive officer	47	$947,794	none listed	none listed	778,121[2]	0	$358.3	$538.3	$27 1/8
4. John A. Young (2)	Hewlett-Packard Co.	President, chief executive officer	52	$798,210	$372	none listed	204,721	$ .19	$4,710	$6,044	$31 1/4
5. Albert Bowers (4)	Syntex Corp.	Chief executive officer, chairman	54	$672,083	none listed	$383,800	70,165	$1.60	$870.2	$916.4	$57
6. Thomas D. Sege (6)	Varian Associates Inc.	Director, chairman of the board and chief executive officer	58	$654,740	$52,765	none listed	49,401	$ .26	$760.3	$928.7	$30 3/8
7. Raymond F. O'Brien (3)	Consolidated Freightways Inc.	President, chief executive officer, chairman	62	$635,590	$37,130*	$344,083*	89,533*	$ .97	$1,365	$1,704.9	$28 1/8
8. Charles A. Lynch (7)	Saga Corp.	President, Chief executive officer, chairman	57	$596,635	$59,772*	$200,000*	89,114	$ .14	$978.8	$1,131	$27 3/4
9. David T. Mitchell (—)	Seagate Technology Inc.	President, chief operating officer	42	$503,986	none listed	none listed	618,333	0	$110.4	$343.9	$6 1/2
10. Parker G. Montgomery[3] (9)	Cooper Laboratories Inc.	Chairman of the board	56	$496,875[4]	none listed	none listed	652,852	$ .06	$101.7	$155.8	$14 1/8
11. John C. Lewis (11)	Amdahl Corp.	President, chief executive officer	49	$489,567*	none listed	none listed	128,946*	$ .20	$777.7	$779.4	$12 3/4
12. Finis F. Conner (—)	Seagate Technology Inc.	Vice chairman of the board	41	$470,735	none listed	none listed	1,874,000	0	$110.4	$343.9	$6 1/2
13. Irwin Federman (50)	Monolithic Memories Inc.	President and chief executive officer	49	$455,007	none listed	none listed	232,106	0	$105.3	$187.2	$12 3/4
14. Dean O. Morton (14)	Hewlett-Packard Co.	Chief operating officer, executive vice president	52	$450,779	$131,152	none listed	92,847	$ .19	$4,710	$6,044	$31 1/4
15. Gordon E. Moore (10)	Intel Corp.	Chief executive officer, chairman	56	$435,093	none listed	none listed	6,589,456	0	$1,121.9	$1,629.3	$27 1/8
16. Anthony Holbrook (27)	Advanced Micro Devices Inc.	Executive vice president, chief operating officer	44	$434,327	$89,730	none listed	0	0	$358.3	$583.3	$27 1/8
17. Andrew S. Grove (11)	Intel Corp.	President, chief operating officer	48	$430,689	none listed	none listed	432,567	0	$1,121.9	$1,629.3	$27 1/8
18. Eugene R. White (14)	Amdahl Corp.	Chairman of the board	52	$425,897*	none listed	none listed	336,000*	$ .20	$777.7	$779.4	$12 3/4
19. Douglas K. Mahon (—)	Seagate Technology Inc.	Senior vice president, chief financial officer	‡	$425,413	none listed	none listed	not listed	0	$110.4	$343.9	$6 1/2
20. David A. Bossen (32)	Measurex Corp.	President, chief executive officer	58	$410,000	none listed	none listed	467,564	$ .20	$122.7	$160.2	$17 1/4
21. Charles E. Sporck (65)	National Semiconductor Corp.	President, chief executive officer	56	$397,610	none listed	none listed	1,116,731	0	$1,210.5	$1,666.1	$10 1/8
22. William E. Terry (—)	Hewlett-Packard Co.	Executive vice president	51	$395,614	$73	none listed	103,105	$ .19	$4,710	$6,044	$31 1/4
23. Robert L. Boniface (18)	Hewlett-Packard Co.	Executive vice president	60	$392,224	$132,647	none listed	226,374	$ .19	$4,710	$6,044	$31 1/4
24. Paul C. Ely Jr. (17)	Hewlett-Packard Co.	Executive vice president	52	$379,806	$228,488	none listed	80,942	$ .19	$4,710	$6,044	$31 1/4
25. Richard G. Rogers (16)	Syntex Corp.	President, chief operating officer	55	$373,533	none listed	$571,600	17,985	$1.60	$870.2	$916.4	$57
26. Hans A. Wolf (20)	Syntex Corp.	Executive vice president, chief administrative officer	56	$368,833	none listed	$556,000	41,007	$1.60	$870.2	$916.4	$57
27. Dean A. Watkins (21)	Watkins-Johnson Co.	Chairman of the board	62	$352,502	$12,152*	0	243,000*	$ .32	$186	$210.5	$25 1/4
28. Lary R. Scott (12)	Consolidated Freightways Inc.	Executive vice president, subsidiary officer	‡	$350,113	$8,822*	$86,472*	not listed	$ .97	$1,365	$1,704.9	$28 1/8
29. James B. Downey (46)	Advanced Micro Devices Inc.	Senior vice president	43	$345,945	none listed	none listed	0	0	$358.3	$583.3	$27 1/8
30. H. Richard Johnson (—)	Watkins-Johnson Co.	President, chief executive officer	58	$344,381	$12,755*	0	‡	$ .32	$186	$210.5	$25 1/4
31. Henri A. Jarrat (—)	VLSI Technology Inc.	President, chief operating officer	46	$340,000	none listed	none listed	‡	0	$35.8	$69.5	$11
32. Steven P. Jobs (67)	Apple Computer Inc.	Executive vice president, chairman of the board	29	$338,931	$14,221*	$40,000	6,900,000*	$0	$982.7	$1,515.8	$21 1/4
33. Larry L. Hansen (35)	Varian Associates Inc.	Executive vice president	56	$338,831	$1.23 mil.	none listed	52,296	$ .26	$760.3	$928.7	$30 3/8
34. Charles Ian R. McDonald (25)	Syntex Corp.	Vice president	51	$332,433	none listed	none listed	not listed	$1.60	$870.2	$916.4	$57
35. Kenneth W. Simmonds (25)	Amdahl Corp.	Executive vice president	49	$330,583*	none listed	none listed	‡	$ .20	$777.7	$779.4	$12 3/4

50 HIGHEST PAID EXECUTIVES OF PUBLICLY HELD COMPANIES

Executive (rank last year)	Company	Position(s)	Age	Salaries, fees, bonuses	Options, insurance, personal benefits	Contingent forms of payment	Shares of company stock owned	Cash dividend 1984	Corporate revenue 1983	Corporate revenue 1984	Share price 4/30/85
36. Lester L. Colbert Jr. (40)	Xidex Corp.	President, chief executive officer, chairman	50	$327,000	$30,388*	$41,762*	379,318*	0	$104.3	$178.12	$13
37. Alfred J Stein (42)	VLSI Technology Inc.	Chief executive officer, chairman	52	$325,000	none listed	none listed	900,000 (approx.)	0	$35.8	$69.5	$11
38. David N. Martin (98)	National Semiconductor Corp.	Vice President, subsidiary officer	39	$323,302	none listed	$82,856	not listed	0	$1,210.5	$1,665.1	$10 1/2
39. Malcom B. Northrup (49)	Verbatim Corp.	President, chief executive officer	45	$320,769	$46,124*	$14,000*	130,894	0	$119.8	$170.8	$7 1/2
40. William Campbell (—)	Apple Computer Inc.	Executive vice president	‡	$317,314	none listed	none listed	not listed	0	$982.7	$1,515.8	$21 1/4
41. Fernand Ostiguy (45)	Measurex Corp.	Subsidiary officer	44	$317,000	none listed	none listed	not listed	$ .20	$122.7	$160.2	$17 7/8
42. Jack C. Carsten (31)	Intel Corp.	Senior vice president	44	$316,362	none listed	none listed	‡	0	$1,121.9	$1,629.3	$27 1/2
43. George W. O'Dair (28)	Varian Associates Inc.	Director and executive vice president	54	$314,429	none listed	none listed	32,062	$ .26	$760.3	$928.7	$30 3/8
44. Donald E. Moffitt (34)	Consolidated Freightways Inc.	Executive vice president	52	$312,236	$17,474*	$73,687*	‡	$ .97	$1,355	$1,704.9	$28 1/8
45. Alan F. Shugart (—)	Seagate Technology Inc.	Chief executive officer, chairman	53	$306,469	none listed	none listed	1,406,000	0	$110.4	$343.99	$6 1/2
46. John C. Gingerich (48)	Measurex Corp.	Executive vice president	48	$301,000	none listed	none listed	not listed	$ .20	$122.7	$160.2	$17 7/8
47. Stephen J. Zelenick (—)	Advanced Micro Devices Inc.	Senior vice president	49	$293,633	none listed	none listed	not listed	0	$358.3	$583.3	$27 7/8
48. John H. Fried (41)	Syntex Corp.	Senior vice president	55	$292,167	none listed	$413,500	21,477	$1.60	$870.2	$916.4	$57
49. William F. O'Connell Jr. (51)	Amdahl Corp.	Senior vice president	56	$290,486	none listed	none listed	not listed	$ .20	$777.7	$779.4	$12 3/4
50. James G. Treybig (95)	Tandem Computers Inc.	President, chief executive officer and director	44	$290,051	none listed	none listed	296,447	0	$418.3	$532.6	$19 1/8

NOTE:
Information for this list was obtained from each company's most recent annual report, proxy statement, or 10K form and from Disclosure II.
Seagate Technology, Inc. is the only company listed that is outside of the Santa Clara Valley.
FOOTNOTES:
* 1983
‡ Unavailable

1. Source: Disclosure II.
2. Includes 882,700 shares subject to options that are exercisable since the last proxy statement.
3. Also chairman of the board of CooperBiomedical, Inc. and of CooperVision, Inc.
4. Includes cash compensation from Cooper Laboratories, Inc., CooperVision, Inc. and CooperBiomedical, Inc. taken from the February 1984 proxy statements.

Research by Diana Garcia

NEXT HIGHEST PAID EXECUTIVES OF PUBLICLY HELD COMPANIES

Ranked by 1984 Cash Compensation In Santa Clara County

Executive (rank last year)	Company	Position(s)	Age	Salaries, fees, bonuses	Options, insurance, personal benefits	Contingent forms of payment	Shares of company stock owned	Cash dividend 1984	Corporate revenue 1983 (in millions)	Corporate revenue 1984 (in millions)	Share price 4/30/85 (close)
51. Richard G. Meise (61)[1]	Convergent Technologies Inc.	Vice president—sales	49	$649,000			not listed	0	$163.7	$361.7	$7¾[2]
52. Richard E. Lee (33)[1]	Siliconix Inc.	President, chief executive officer	55	$422,542				0	$69.5	$96.3	$18⅝[2]
53. M. Kenneth Oshman (13)[1]	Rolm Corp.	President, chief executive officer	44	$302,227				0	$503		
54. Alan R. McMillen (—)[1]	Cooper Vision Inc.	Executive vice president		$297,331					$198.6		$24½
55. James F. Toreson (—)[1]	Xebec	President, chief executive officer, chairman	42	$294,999			‡	0	$57.48	$157.7	$4½[2]
56. Gary B. Filler (44)	Xidex Corp.	Executive vice president, treasurer, secretary	43	$289,000	$13,830		360,197	0	$112.6	$178.15	$13
57. E. Oran Brigham (—)	Avantek Inc.	President, chief executive operator, chairman	44	$278,775			18,939	0	$119.38	$159.2	$21½[2]
58. Laurence R. Hootnick (—)	Intel Corp.	Senior vice president	‡	$278,523			not listed	0	$1,121.9	$1,629.3	$27½
59. Leslie L. Vadasz (23)	Intel Corp.	Senior vice president	48	$278,523			not listed	0	$1,121.9	$1,629.3	$27½
60. Phillip R. Boyce (70)	Pacific Western Bancshares	President, chief executive officer, chairman	41	$275,100	$56,317		185,864	$ .11	$31.2[3]	$45.7[3]	$5⅞[3]
61. George M. Scalise (82)	Advanced Micro Devices Inc.	Senior vice president, secretary, chief administrative officer	44	$274,435	$26,730			0	$358.3	$585.3	$27⅜
62. Douglas R. Sullivan (75)	Siliconix Inc.	Executive vice president, chief executive operating officer	50	$273,043				0	$69.5	$96.3	$18⅝[2]
63. Bart L. Zaccaria (60)	Xidex Corp.	Executive vice president	40	$272,800	$11,147	none listed	456,047	0	$112.6	$178.15	$13
64. Delbert W. Yocam (—)	Apple Computer Inc.	Executive vice president	40	$272,507			not listed	0	$982.7	$1,515.8	$21½
65. Herbert M. Dwight, Jr. (43)	Spectra-Physics	Chief executive officer, chairman	54	$269,511	$1,388		174,666	0	$143.2	$170.6	‡
66. Raymond E. Jacobson (40)	Anderson Jacobson Inc.	President, chairman	62	$268,188[4]	$22,567[4]		536,912	0	$54.2	$51	‡
67. Henry E. Gauthier (—)	Coherent Inc.	President, chief executive officer	44	$267,419	$358,193	$201,298	30,101	0	$91.3	$111.4	$19[2]
68. John L. Edwards (—)	Cooper Biomedical Inc.	President	43	$266,668			‡	0	$50.8	$87.7	$3¼[2]
69. A. Blaine Bowman (62)	Dionex Corp.	President, chief executive officer, director	38	$264,727			139,836	0	$21	$27	$33¼[2]
70. Kenneth R. Zerbe (92)	Apple Computer Inc.	Executive vice president, finance and administration	49	$259,431	$25,833		not listed	0	$982.7	$1,515.8	$21½
71. Gary J. Sbona (—)	Siliconix Inc.	Vice president	‡	$257,704				0	$69.5	$96.3	$18⅝[2]
72. James W. Morrell (47)	Saga Corp.	Executive vice president	53	$255,000	$13,682		not listed	$ .44	$978.8	$1,131	$27⅝
73. Walter Senges (—)	Siliconix Inc.	Vice president	‡	$253,104				0	$69.5	$96.3	$18⅝[2]
74. James H. Levy (—)	Activision	President	39	$251,250			‡	0	$69.98	$271.92	⅞[2]
75. Jack W. Connor (64)	Plaza Commerce Bank	President, chief executive officer	45	$249,018			170,171	$ .10	$17.3	$13.7	‡
76. Harold G. Molyneaux (—)	Siliconix Inc.	Senior vice president		$248,898				0	$69.5	$96.3	$18⅝[2]
77. Gregory Harrison (—)	National Semiconductor Corp.	Vice president	50	$247,360	$4,190		not listed	0	$1,210.5	$1,665.1	$10½
78. William E. Finney (—)	Varian Associates Inc.	Vice president	60	$244,509	$4,877		not listed	$ .26	$780.3	$928.7	$30⅜
79. James C. Morgan (—)	Applied Materials Inc.	President	46	$243,021			148,802	0	$105.5	$169.4	$23½[2]
80. Robert C. Marshall (—)	Tandem Computers Inc.	Senior vice president, chief operating officer and director	53	$242,968	none listed	none listed	182,000	0	$418.3	$532.6	$19½
81. Michael R. Clementa (50)	Amdahl Corp.	Vice president, engineering and planning	41	$232,975[5]				$ .20	$777.7	$779.4	$12¼
82. W. Roger Curry (—)	Consolidated Freightways Inc.	Subsidiary officer	‡	$226,645	$42,645		not listed	$ .97	$1,356	$1,704.9	$28½
83. Samuel D. Colella (76)	Spectra-Physics Inc.	President	45	$225,954	$735		not listed	0	$143.2	$170.6	‡
84. Dr. Alejandro Zaffaroni (73)	Alza Corp.	Chief executive officer, chairman	62	$225,774			747,497	0	$22.5	$21.4	$24⅜
85. Robert McAdams Jr. (—)	Measurex Corp.	Senior vice president	45	$225,000	none listed	none listed	not listed	$ .20	$122.7	$160.2	$17⅞

NEXT HIGHEST PAID EXECUTIVES OF PUBLICLY HELD COMPANIES

Executive (rank last year)	Company	Position(s)	Age	Salaries, fees, bonuses	Options, insurance, personal benefits	Contingent forms of payment	Shares of company stock owned	Cash dividend 1984	Corporate revenue 1983 (in millions)	Corporate revenue 1984 (in millions)	Share price 4/30/85 (close)
86. Jerrome Raffell (94)	Measurex Corp.	Senior vice president	59	$225,000	none listed	none listed	not listed	$ .20	$122.7	$160.2	$17⅞
87. Michael J. Callahan (—)	Monolithic Memories	Executive vice president and chief operating officer	‡	$224,404	none listed	none listed	not listed	0	$105.3	$187.2	$12¾
88. William W. Stevens (—)	Triad Systems Corp.	President, chairman	53	$223,300	none listed	none listed	not listed	0	$90.8	$120.4	$7½[2]
89. W. Keith Kennedy Jr. (—)	Watkins-Johnson Co.	Vice president	‡	$222,262			not listed	$ .32	$186	$210.5	$25⅛
90. Clements E. Pausa (—)	National Semiconductor Corp.	Vice president	53	$215,831	$5,073		not listed	0	$1,210.5	$1,665.1	$10½
91. James M. Smaha (—)	National Semiconductor Corp.	Vice president	‡	$215,831	$4,865		not listed	0	$1,210.5	$1,665.1	$10½
92. Jeffrey O. Henley (90)	Saga Corp.	Executive vice president	40	$215,000	$2,393		not listed	$ .44	$978.8	$1,131	$27¾
93. Wilfred J. Corrigan (—)	LSI Logic Corp.	President, chief executive officer	47	$212,289			3,180,484	0	$34.8	$84.4	$17¼[2]
94. Carl H. Randall (89)	Saga Corp.	Executive vice president	45	$212,000	$22,856		not listed	$ .44	$978.8	$1,131	$27¾
95. John P. Kelly (—)	Consolidated Freightways Inc.	Vice president, general counsel, secretary	‡	$210,836			not listed	$ .97		$1,074.9	$28⅛
96. Kenneth Levy (91)	KLA Instruments Corp.	President, chief executive officer	43	$209,960			406,834*	0	$23.4	$42.8	$18[2]
97. Gerald M. Starek (57)	Silicon Valley Group Inc.	Chairman of the board	43	$208,150			832,776	0	$17	$30.4	$15¾
98. Ralph A. Pica (80)	Saga Corp.	President, Black Angus Division	50	$207,000	$13,327		not listed	$ .44	$978.8	$1,131	$27¾
99. C. Norman Dion (30)	Dysan Corp.[4]	Chairman of the board	53	$200,547	none listed	none listed	1,417,969	0	$180	$214	$13
100. Sandra J. Kurtzig (—)	Ask Computer Systems Inc.	Chief executive officer, chairman	37	$200,396	$143,673		2,935,100	0	$65	‡	$14¾[2]

NOTE:
Information from the list was obtained from each company's latest proxy statement, annual report, or 10K form and from Disclosure II.

FOOTNOTES:
* 1983
‡ Unavailable

1. These executives would have been ranked as follows: Richard G. Meise, 7; Richard E. Lee, 20; M. Kenneth Oshman, 46; Alan R. McMillen, 47; James F. Torranson, 48
2. Wednesday, 5/8/85 close
3. Interest income
4. Dysan has recently merged with Xidex Corp. All information is prior to the merger, except shares of company stock owned.

Research by Diana Garcia

25 LARGEST AREA PUBLIC COMPANIES

RANKED BY 1983 CORPORATE REVENUE

Name, address (rank last year)	Revenues fiscal 1983 (in millions)	Revenues fiscal 1982 (in millions)	Net income fiscal 1983/82 (in millions)	Fiscal year end	Chief executive officer	Products	Number of shares of stock outstanding	Exchange traded on	Percent of stock controlled by officer and directors	Number of employees
1. Hewlett-Packard Co. (1) 3000 Hanover St. Palo Alto 94304	$4,710	$4,189	$432/383	Oct. 31	John A. Young	Computers, calculators and peripheral products	254,914,000	NYSE	34.6%	72,000
2. Consolidated Freightways Inc. (2) 3240 Hillview Ave. Palo Alto 94304	$1,355.1	$1,203.8	$65.5/54.8	Dec. 31	Raymond F. O'Brien	Trucking and transportation services	13,506,860	NYSE	1.65%	18,100
3. National Semiconductor Corp. (3) 2900 Semiconductor Drive Santa Clara 95051	$1,210.5	$1,104	($14.1)/(10.6)	May 31	Charles E. Sporck	Semiconductors, integrated circuits and IBM-compatible computer products	23,931,000	NYSE	1.76%	35,640
4. Intel Corp. (5) 3065 Bowers Ave. Santa Clara 95051	$1,121.9	$899.8	$116.1/30	Dec. 31	Gordon E. Moore	Electronic components for original equipment manufacturers	111,836,470	OTC	13.3%	21,500
5. Apple Computer Inc. (8) 20525 Mariani Ave. Cupertino 95014	$982.7	$583	$76.7/61.3	Sept. 30	John Sculley	Personal computer systems	59,198,397	OTC	25.4%	4,545
6. Saga Corp. (4) One Saga Lane Menlo Park 94025	$978.8	$901	$22.4/16.8	June 25	Charles A. Lynch	Restaurant chains, contract food service management	10,400,000	NYSE	24.9%	50,000
7. Syntex Corp. (6) 3401 Hillview Ave. Palo Alto 94304	$870.2	$813.3	$149.3/134	July 31	Albert Bowers	Pharmaceuticals and other health-care products	33,797,000	NYSE	1.8%	10,900
8. Amdahl Corp. (10) 1250 E. Arques Ave. Sunnyvale 94086	$777.7	$462.2	$46.5/6.7	Dec. 31	John C. Lewis	Computer and communications equipment and related services	44,114,000	ASE	2.69%	6,600
9. Varian Associates Inc. (7) 3401 Hillview Ave. Palo Alto 94304	$760.3	$691.2	$44.9/26.5	Sept. 30	Thomas D. Sege	High-technology systems and components	21,511,168	NYSE	1.61%	13,600
10. Raychem Corp. (9) 300 Constitution Drive Menlo Park 94025	$582.7	$534.9	$30.5/37.2	June 30	Paul M. Cook	Polymeric and metallic products for various industries	9,551,496	OTC	5.49%	8,618
11. Rolm Corp. (11) 4900 Old Ironsides Drive Santa Clara 95050	$502.6	$380.6	$35.5/29.8	July 2	M. Kenneth Oshman	Computerized business communications systems and military-specification computers	19,791,000	NYSE	12.9%	7,049
12. Tandem Computers Inc. (13) 19333 Valco Parkwa Cupertino 95014	$418.3	$312.1	$30.8/29.8	Sept. 30	James G. Treybig	Computer data processing and information systems	40,784,000	OTC	6.5%	5,025
13. Advanced Micro Devices Inc. (15) 901 Thompson Place Sunnyvale 94088	$358.3	$281.5	$20.9/8.9	March 27	W.J. Sanders III	Integrated circuits for electronics systems manufacturers	28,647,000	NYSE	4.79%	13,000
14. Cooper Laboratories Inc. (12) 3145 Porter Drive Palo Alto 94304	$232.5	$195.5	$25.5/16.9	Oct. 31	A. Kenneth Nilsson	Drugs, devices and diagnostics for medical and dental practices	15,947,000	NYSE	5%	2,950
15. CooperVision Inc. (21) 3145 Porter Drive Palo Alto 94304	$198.6	$134.3	$20/13.2	Oct. 31	John Williford	Drugs, devices and diagnostics for opthalmology and optometry	20,130,000	NYSE	4.5%	3,300
16. Watkins-Johnson Co. (17) 3333 Hillview Ave. Palo Alto 94304	$186	$156	$17.7/10.3	Dec. 31	H. Richard Johnson	Electronic communications and guidance equipment and automatic test equipment	9,620,874	NYSE	5%	2,850
17. Dysan Corp. (18) 5201 Patrick Henry Drive Santa Clara 95050	$180	$142.7	$48.9/9	Oct. 29	William L. Harry	Rigid and flexible disk memory systems	17,138,116	OTC	27.92%	4,000 (approx.)
18. TeleVideo Systems Inc. (—) 550 E. Brokaw Road San Jose 95134	$168.7	$98.5	$22.3/12.7	Oct. 31	K. Phillip Hwang	Microcomputer systems and video display terminals	41,583,000	OTC	71.8%	867
19. Convergent Technologies (—) 2500 Augustine Drive Santa Clara 95051	$163.5	$96.4	$14.9/11.9	Dec. 31	Allen H. Michels	Microprocessor-based computers and computer systems	36,262,447	OTC	23.8%	878
20. Spectra-Physics Inc. (20) 3333 N. First St. San Jose 95134	$143.2	$136.9	($8.4)/1	Sept. 30	Herbert M. Dwight Jr.	Laser devices and components	5,841,046	NYSE	6.02%	2,102
21. Diasonics Inc. (19) 1708 McCarthy Blvd. Milpitas 95035	$125.1	$109.8	($59.7)/11.3	Dec. 31	Albert Waxman	Medical diagnostic imaging systems	51,586,000	OTC	28%	1,244
22. Measurex Corp. (22) 1 Results Way Cupertino 95014	$122.7	$116.1	$4.8/(0.3)	Nov. 30	Paul Bancroft III	Computer integrated process management systems	7,237,000	NYSE	19.7%	2,050
23. Verbatim Corp. (—) 323 Soquel Way Sunnyvale 94086	$119.8	$85	$14.2/9.3	July 1	Malcolm B. Northrup	Flexible magnetic storage disks and microcomputer aids and services	22,821,716	ASE	20.03%	2,179
24. Avantek Inc. (24) 3175 Bowers Ave. Santa Clara 95051	$119.3	$100.3	$11.9/11.1	Dec. 31	E. Oran Brigham	Microwave products for defense and communications industries	18,758,000	OTC	6.7%	2,230
25. Plantronics Inc. (23) 1782 Technology Drive San Jose 95110	$114.3	$110.8	$8.3/9.7	May 29	Neil J. Hynes	Telecommunications and factory automation equipment	6,538,000	NYSE	1.22%	1,680

NOTE: Information obtained from each company's most recent annual report, proxy and Form 10-K. Where a company does not have a chief executive officer, the firm's president is listed. The following firms were on last year's list of largest public companies, but did not qualify for inclusion this year: Pizza Time Theatres Inc., Activision Inc. and Tymshare Inc.

Local divisions of companies based outside the valley are not included.

FOOTNOTES:
1. Includes a net gain on real property of $3.3 million.

Research by Jeffrey Krasner

A bird's-eye view of the NCC '85 show floor at McCormick Place

By Kathleen Sullivan
CW West Coast Bureau

CHICAGO — Although the 1985 National Computer Conference here attracted 8,000 more attendees than last year's show, it will leave behind an otherwise undistinguished record. Since few companies chose this city as the backdrop for product introductions, the show lacked the excitement of previous NCCs.

When asked to comment on their impressions of NCC '85, visitors interviewed by *Computerworld* gave the show — both the exhibits and the technical seminars — mixed reviews. NCC lacked excitement, many said. Though some visitors gave the technical seminars high marks, others complained that the quality of the presentations was uneven.

Vendors registered a different set of complaints, centering on their dealings with the city's trade unions (see story page 6). Representatives from several firms told stories of mishandled equipment, damaged computer systems and abrasive contact with union members.

Yet a spokesman for the American Federation of Information Proces ies, Inc., the prime sponsor o said that, in his estimation, were pleased overall with NC reaction to this year's NCC ha positive than I've seen in years ald G. Dowd, NCC '85 com chairman.

Dowd said the show's incre dance could be interpreted as

Se

Wang to offer bridge to IBM?

By John Desmond
CW Staff

LOWELL, Mass. — Wang Laboratories, Inc. here has developed products that allow the IBM Personal Computer to run Wang Word Processing and the IBM Personal Computer to link to Wang VS minicomputers, according to Wang internal documents obtained by *Computerworld*.

Wang Word Processing for the IBM Personal Computer would include a Wang keyboard and software for a price of $695.

See **WANG** page 4

Slump snares mainframe mal

By Peter Bartolik
and Clinton Wilder
CW Staff

Evidence of the continuing computer industry slump was in sharp focus last week as IBM and four of the five Bunch mainframe vendors reported second-quarter profit declines. Sperry Corp. was the three-month period's lone winner, posting a 23% earnings gain over its results from one year ago.

IBM reported that second-quarter profits were down almost 13% from the year-earlier quarter, as revenue growth continued at the dismal pace set in the first quarter. Results from the four other Bunch companies showed that profits 5.6% at Burroughs Corp.; 13 Corp.; 84% at Control Data Co $24.9 million operating loss fro sales; and 29% at Honeywell, In

IBM's financial results for t months of the year reflected th downturn that has thrown th into turmoil following two year record growth.

Although much of this year adversity was attributed to the the U.S. dollar abroad, IBM said ed that if currency rates had eq of the first half of 1984, the

See RES

ComputerWorld
pl 7/22/85

Poll shows mini mart saturated

Sales drop-off attributed to heavy 1984 purchases

By Tom Henkel
CW Staff

DELRAN, N.J. — For mini and supermicrocomputer vendors wondering why their products have suffered a sales drop-off recently, the answer may rest in the heavy sales of the past year.

Datapro charts on pp. 24-26

A recent survey conducted here by Datapro Research Corp. of 1,702 minicomputer users revealed that most of these users replaced an older system during the past 11 months. A Datapro survey of mainframe users [CW, July 15] turned up similar results. The mainframe users said the average age of their systems was less than 10 months.

By contrast, when surveyed by Datapro on the same question last year, minicomputer and mainframe users said their then-current systems averaged slightly more than 40 months old.

On the whole, the minicomputer users polled this year said they were more pleased with their systems now than they were last year. This conclusion is derived from Datapro's "overall satisfaction" category, a composite score based on several factors, including ease of operation, reliability, vendor services and vendor-supplied software. Most minicomputer vendors included in the 1985 Datapro survey showed a moderate improvement in overall user satisfaction. Some, like Harris Corp. and Honeywell, Inc., showed significant improvements.

Asked whether their systems fulfilled expectations, 85.9% of the mini users polled by Datapro said that they did. But as with the survey's overall satisfaction rating, most vendors' scores showed lit-

See **SURVEY** page 23

TOP OF THE NEW

The U.S. Navy is scrutin computerized inventory con tem following the arrests of fi charged with diverting stolen j parts to Iran. **Page 2.**

■

Net results. Apple lost $17 the second quarter as its rever meted nearly $50 million f year's figure. **Page 4.**

■

Communications standard cial to the future of networ NCC-goers view the short-term tions critically. **Page 8.**

■

Seek and ye shall not find trying all sorts of ways to pro user access to mainframe data managers are finding there is n solution. **Page 10.**

■

Can the Macintosh make i corporate world? Some NCC a think it might. **Page 12.**

■

SURVEY from page 1

tle change in this category over the previous year.

There were a few notable exceptions, however. As the rise in its users' overall satisfaction rating indicated, Harris appears to have made a remarkable turnaround during the past year. In the 1984 survey, only 57.14% of Harris users polled said their systems met expectations. This year, that percentage rose to 85.71%.

The news was not as rosy for McDonnell Douglas Corp.'s Microdata division and Sperry Corp. Both showed dramatic declines in the category, according to Datapro. In 1984, 91.03% of Microdata users polled said their systems fulfilled expectations. This year, that percentage slipped to 88%. In 1984, 81.36% of Sperry users polled said their systems lived up to expectations. This year, 74.29% said they did.

Datapro also asked the respondents to its 1985 minicomputer user survey whether they were willing to recommend their systems to others. Eighty-seven percent said they would. There were two exceptions to the generally positive response, however: Sperry's System 80 and Digital Equipment Corp.'s VAX-11/785.

According to Datapro, its survey disclosed that 65.71% of System 80 users responding were willing to recommend that system to others, while 14% said they would not. Twenty percent said they were undecided. Of VAX-11/785 users who responded, 63.64% said they would recommend their system, while 27.27% said they were undecided.

Three vendors were omitted from this year's Datapro survey. MAI/Basic Four, Inc. and MDS Qantel Corp. processors were not included because, according to Datapro, these vendors were not listed on at least five responses to its questionnaire, as the survey firm requires. A total of 9000 questionnaires were sent to minicomputer users. Motorola/Four Phase Systems, Inc. was also eliminated from this year's survey because, a spokesman said, Datapro felt Four-Phase was no longer a major contender in the minicomputer market.

The Datapro survey, "User Ratings of Computer Systems," costs $29 and is available from the company at 1805 Underwood Blvd., Delran, N.J. 08075.

September Report eyes mini issues

Are superminicomputers crowding the mainframe market? Are supermicros encroaching on the minicomputer market? *Computerworld*'s Special Report on minicomputers and small business systems will address these and other questions in the September issue.

Article contributions are now being considered for publication in the report. Submissions should take one of two forms: a tutorial article discussing a related issue or trend, or an application story outlining a user's experience with a minicomputer or small business system.

Users rate their minis

Survey Item / Manufacturer and Model	IBM System/34	IBM System/36	IBM System/38	McDonnell Douglas Automation Co (Microdata, Inc.) Reality	McDonnell Douglas Automation Co (Microdata, Inc.) Series	NCR Corp. I-9150	NCR Corp. 9300	Perkin-Elmer Corp. All models
Number of User Responses	131	198	149	15	10	25	42	24
Average Life of System (in months)	12.0	8.8	9.9	12.7	7.5	10.3	9.2	9.8
Acquisition Method (%)								
Purchase	77.86	69.70	73.83	86.67	90.00	60.00	66.67	87.50
Rental or Lease from Manufacturer	9.92	10.61	7.38	0.00	0.00	24.00	16.67	8.33
Lease from Third Party	10.69	18.69	18.79	13.13	10.00	16.00	14.29	4.17
System Ratings[1]								
Ease of Operation	3.44	3.58	3.48	3.60	3.70	3.48	3.71	3.00
Reliability of System	3.75	3.83	3.82	3.60	3.40	3.28	3.83	3.58
Reliability of Peripherals	3.65	3.65	3.57	3.40	3.20	3.28	3.59	3.08
Manufacturer's Maintenance Service								
Responsiveness	3.42	3.42	3.51	3.57	3.00	3.46	3.43	3.29
Effectiveness	3.47	3.50	3.58	3.36	2.90	3.21	3.49	2.95
Manufacturer's Technical Support								
Troubleshooting	3.07	3.13	3.16	3.27	2.60	2.96	3.19	2.76
Education	3.05	3.12	3.17	3.00	2.50	2.76	3.21	2.76
Documentation	3.13	3.10	3.19	3.20	2.60	2.56	2.93	2.39
Manufacturer's Software								
Operating System	3.39	3.51	3.64	3.67	3.67	3.16	3.48	2.91
Compilers and Assemblers	3.38	3.45	3.57	3.55	3.67	3.28	3.54	2.95
Applications Programs	2.92	2.99	2.96	3.00	2.88	2.63	2.91	2.39
Ease of Programming	3.18	3.31	3.61	3.31	3.89	3.24	3.21	3.09
Ease of Conversion	3.00	3.40	2.74	3.44	3.44	2.88	3.47	3.04
Overall Satisfaction	3.28	3.47	3.54	3.54	3.67	3.08	3.56	3.00
Additional Ratings[1]								
Ease of Expansion	3.10	3.51	3.74	3.79	3.60	3.44	3.74	3.21
Compatibility of Hardware Carried Over from Other Systems	2.75	3.19	2.88	3.09	3.00	3.00	3.31	2.86
Compatibility of Programs/ Data Carried Over from Other Systems	2.71	3.17	2.51	3.18	2.90	3.04	3.46	2.90
Power and Energy Efficiency	2.96	3.33	3.24	3.36	3.20	2.87	3.49	3.27
Productivity Aids Help Keep Programming Costs Low	2.89	3.13	3.62	3.15	3.20	2.56	2.79	2.54
Software Support Delivered by Vendor	2.83	3.02	3.17	2.92	2.63	2.42	2.92	2.52
Keeping Up with and Implementing Vendor Changes to Hardware/Software[2]	3.12	3.24	3.19	3.43	3.00	3.08	3.13	2.80
Delivery/Installation of Equipment[3]	3.01	3.03	2.97	3.00	3.00	2.80	2.88	2.83
Delivery of Required Software[3]	2.99	3.05	3.04	2.71	3.00	2.92	3.05	2.74
Did the system do what you expected it to do? (%)								
Yes	93.13	95.45	93.96	93.33	80.00	92.00	92.86	87.50
No	4.58	2.53	2.68	6.67	20.00	4.00	0.00	12.50
Undecided	2.29	2.02	3.36	0.00	0.00	4.00	4.76	0.00
Would you recommend the system to another user? (%)								
Yes	85.50	96.97	97.99	93.33	90.00	84.00	95.24	83.33
No	9.92	0.50	0.00	6.67	10.00	8.00	0.00	8.33
Undecided	2.29	2.53	2.01	0.00	0.00	8.00	0.00	8.33

[1] Ratings are from 4.0 to 1.0, with 4.0 high.

[2] Ratings are from 4.0 to 1.0, with 4.0 = very easy and 1.0 = very difficult.

[3] Ratings are from 4.0 to 1.0, with 4.0 = ahead of schedule and 1.0 = very late.

DATAPRO RESEARCH CORP. CHARTS

Survey Item / Manufacturer and Model	Prime Computer, Inc. 50 series	Sperry Corp. System 80	Tandem Computers, Inc. All models	Texas Instruments, Inc. All models	Wang Laboratories, Inc. VS systems	Other Models	
Number of User Responses	150	35	12	12	88	31	
Average Life of System (in months)	10.7	9.9	10.3	10.9	11.3	10.3	
Acquisition Method (%)							
Purchase	66.00	51.43	66.67	75.00	69.32	67.74	
Rental or Lease from Manufacturer	24.67	37.14	0.00	12.50	12.90		
Lease from Third Party	8.67	11.43	33.33	25.00	18.18	19.35	
System Ratings[1]							
Ease of Operation	3.48	2.84	3.55	3.42	3.69	3.42	
Reliability of Mainframe	3.65	3.13	3.91	3.58	3.55	3.52	
Reliability of Peripherals	3.37	2.87	3.64	3.55	3.38	3.42	
Manufacturer's Maintenance Service							
Responsiveness	3.31	3.29	3.73	3.83	3.20	3.52	
Effectiveness	3.13	3.00	3.64	3.92	3.14	3.45	
Manufacturer's Technical Support							
Troubleshooting	2.88	2.57	3.18	3.36	2.70	3.10	
Education	2.83	2.15	3.36	3.09	2.73	2.76	
Documentation	2.69	2.29	3.09	2.83	2.57	2.67	
Manufacturer's Software							
Operating System	3.50	3.09	3.67	3.80	3.36	3.28	
Compilers and Assemblers	3.20	3.18	3.50	3.44	3.38	3.24	
Applications Programs	2.76	2.22	3.30	3.10	2.89	3.00	
Ease of Programming	3.40	2.86	3.17	3.44	3.64	3.21	
Ease of Conversion	3.21	2.91	3.10	3.11	3.34	3.21	
Overall Satisfaction	3.35	2.83	3.58	3.60	3.38	3.28	
Additional Ratings[1]							
Ease of Expansion	3.70	3.21	3.92	3.27	3.57	3.35	
Compatibility of Hardware Carried Over from Other Systems	3.30	2.58	3.27	2.90	2.73	3.04	
Compatibility of Programs/ Data Carried Over from Other Systems	3.02	2.94	2.89	3.00	3.11	2.87	
Power and Energy Efficiency	3.07	2.78	3.17	3.36	3.13	3.10	
Productivity Aids Help Keep Programming Costs Low	2.80	2.38	3.00	3.11	3.51	2.87	
Software Support Delivered by Vendor	2.68	2.40	2.83	3.10	2.67	2.86	
Keeping Up with and Implementing Vendor Changes to Hardware/Software[2]	2.97	2.60	3.25	3.42	3.02	3.17	
Delivery/Installation of Equipment[3]	3.02	2.80	3.00	2.83	2.71	3.16	
Delivery of Required Software[3]	2.89	2.83	2.92	2.83	2.73	3.07	
Did the system do what you expected it to do? (%)							
Yes	89.33	74.29	100.00	91.67	94.32	93.55	
No	5.33	14.29	0.00	8.33	3.41	3.23	
Undecided	4.67	11.43	0.00	0.00	1.14	0.00	
Would you recommend the system to another user? (%)							
Yes	89.33	65.71	91.67	83.33	92.05	87.10	
No	8.00	14.29	0.00	0.00	0.00	87.10	
Undecided	2.67	20.00	8.33	8.33	7.95	0.00	

[1] Ratings are from 4.0 to 1.0, with 4.0 high.

[2] Ratings are from 4.0 to 1.0, with 4.0 = very easy and 1.0 = very difficult.

[3] Ratings are from 4.0 to 1.0, with 4.0 = ahead of schedule and 1.0 = very late.

Users rate their minis

Survey Item / Manufacturer and Model	Burroughs Corp. B90	Burroughs Corp. B900	Burroughs Corp. B1900	Data General Corp. Eclipse MV	Datapoint Corp. All models	Digital Equipment Corp. PDP-11	DEC VAX-11/730	DEC VAX-11/750
Number of User Responses	15	17	100	62	27	114	10	87
Average Life of System (in months)	10.3	11.6	11.3	9.3	11.3	12.5	10.1	9.5
Acquisition Method (%)								
Purchase	60.00	70.59	65.00	82.26	85.19	83.33	90.00	70.11
Rental or Lease from Manufacturer	20.00	17.65	25.00	0.00	3.70	2.63	0.00	8.05
Lease from Third Party	20.00	11.76	9.00	17.74	11.11	14.04	10.00	20.69
System Ratings[1]								
Ease of Operation	3.36	3.41	3.53	3.53	3.31	3.41	3.40	3.46
Reliability of System	3.60	3.53	3.48	3.47	3.33	3.51	4.00	3.65
Reliability of Peripherals	3.47	3.47	3.28	3.52	3.41	3.38	3.70	3.57
Manufacturer's Maintenance Service								
Responsiveness	3.33	3.41	3.51	3.53	3.41	3.47	3.70	3.56
Effectiveness	3.13	3.18	3.27	3.31	3.19	3.40	3.70	3.45
Manufacturer's Technical Support								
Troubleshooting	3.33	2.76	2.84	2.98	2.65	3.08	3.11	3.30
Education	3.27	2.82	2.81	2.92	2.46	2.95	3.33	3.15
Documentation	2.67	2.59	2.56	2.70	2.46	2.85	3.00	3.24
Manufacturer's Software								
Operating System	3.13	3.35	3.64	3.48	3.04	3.39	3.70	3.69
Compilers and Assemblers	3.21	3.27	3.40	3.29	3.13	3.20	3.70	3.58
Applications Programs	2.82	2.59	2.83	2.92	2.80	2.98	3.20	3.08
Ease of Programming	3.13	3.00	3.28	3.32	3.26	3.19	3.30	3.44
Ease of Conversion	2.93	2.88	3.26	3.20	2.67	3.03	3.20	3.21
Overall Satisfaction	3.07	3.06	3.34	3.46	3.04	3.27	3.60	3.55
Additional Ratings[1]								
Ease of Expansion	3.36	3.24	3.32	3.63	3.56	3.09	3.80	3.57
Compatibility of Hardware Carried Over from Other Systems	3.00	3.18	2.90	3.29	2.71	3.32	3.56	3.32
Compatibility of Programs/Data Carried Over from Other Systems	2.86	3.06	2.92	3.22	2.50	2.88	3.30	2.99
Power and Energy Efficiency	2.92	3.06	2.94	3.22	3.08	2.71	3.22	3.22
Productivity Aids Help Keep Programming Costs Low	2.42	2.81	2.84	2.87	2.43	2.64	3.13	3.19
Software support delivered by Vendor	2.77	2.65	2.68	2.73	2.44	2.65	3.13	3.14
Keeping Up with and Implementing Vendor Changes to Hardware/Software[2]	3.00	3.12	3.03	2.95	2.77	2.77	2.80	3.05
Delivery/Installation of Equipment[3]	2.71	2.88	2.81	2.85	2.88	2.88	2.70	2.78
Delivery of Required Software[3]	2.93	2.81	2.85	2.98	2.83	2.77	3.00	2.87
Did the system do what you expected it to do? (%)								
Yes	100.00	76.47	91.00	95.16	92.59	90.35	100.00	95.40
No	0.00	11.76	5.00	0.00	7.41	3.51	0.00	3.45
Undecided	0.00	11.76	4.00	4.84	0.00	3.51	0.00	1.15
Would you recommend system to another user? (%)								
Yes	73.33	70.59	85.00	95.16	74.07	79.82	100.00	98.85
No	6.67	11.76	4.00	0.00	7.41	13.16	0.00	0.00
Undecided	13.33	17.65	10.00	4.84	18.52	7.02	0.00	1.15

[1] Ratings are from 4.0 to 1.0, with 4.0 high.

[2] Ratings are from 4.0 to 1.0, with 4.0 = very easy and 1.0 = very difficult.

[3] Ratings are from 4.0 to 1.0, with 4.0 = ahead of schedule and 1.0 = very late.

Survey Item / Manufacturer and Model	Digital Equipment Corp. VAX-11/780	Digital Equipment Corp. VAX-11/785	Harris Corp. All models	Hewlett-Packard Co. HP 250	Hewlett-Packard Co. HP 1000	Hewlett-Packard Co. HP 3000	Honeywell, Inc. DPS 6	IBM Series/1
Number of User Responses	91	11	7	6	8	174	40	11
Average Life of System (in months)	11.8	8.2	11.3	12.8	13.1	10.0	10.9	13.6
Acquisition of Method (%)								
Purchase	76.92	90.91	100.00	100.00	100.00	69.54	75.00	90.91
Rental or Lease from Manufacturer	5.49	0.00	0.00	0.00	0.00	15.52	5.00	0.00
Lease from Third Party	17.58	9.09	0.00	0.00	0.00	13.79	17.50	9.09
System Ratings[1]								
Ease of Operation	3.51	3.36	3.57	3.33	2.83	3.49	3.10	3.27
Reliability of System	3.60	3.36	3.29	3.50	3.67	3.71	3.45	3.55
Reliability of Peripherals	3.34	3.55	3.14	3.50	3.33	3.68	3.18	3.55
Manufacturer's Maintenance Service								
Responsiveness	3.43	3.45	3.29	2.83	3.63	3.58	3.30	3.36
Effectiveness	3.36	3.55	3.29	3.00	3.50	3.54	3.20	3.55
Manufacturer's Technical Support								
Troubleshooting	3.16	3.09	3.00	2.80	3.13	3.22	2.82	3.11
Education	3.06	3.11	3.14	2.67	3.25	3.15	2.90	2.80
Documentation	3.16	3.00	2.43	2.83	3.00	2.99	2.77	3.00
Manufacturer's Software								
Operating System	3.57	3.60	3.71	3.17	3.25	3.54	3.07	3.44
Compilers and Assemblers	3.49	3.60	3.43	3.17	3.25	3.41	3.18	3.11
Applications Programs	2.94	2.71	3.00	2.17	2.71	3.00	2.81	3.17
Ease of Programming	3.46	3.22	3.43	3.50	2.75	3.33	2.89	2.89
Ease of Conversion	3.19	2.88	3.43	2.50	2.75	3.37	2.91	2.17
Overall Satisfaction	3.48	3.30	3.29	2.83	2.88	3.47	3.15	3.11
Additional Ratings[1]								
Ease of Expansion	3.61	3.73	3.29	3.20	3.29	3.61	3.44	3.45
Compatibility of Hardware Carried Over from Other Systems	3.41	3.55	3.00	2.25	2.43	3.00	3.03	3.11
Compatibility of Programs/ Data Carried Over from Other Systems	3.21	3.44	3.29	2.00	2.29	3.16	2.79	2.38
Power and Energy Efficiency	3.14	3.40	3.29	2.33	3.14	3.20	3.03	3.11
Productivity Aids Help Keep Programming Costs Low	3.11	3.44	2.86	3.20	2.57	3.07	2.58	3.00
Software Support Delivered by Vendor	2.85	3.11	2.86	2.00	3.14	3.09	2.49	3.00
Keeping Up with and Implementing Vendor Changes to Hardware/ Software[2]	3.07	3.00	3.29	3.00	2.71	3.29	2.87	3.10
Delivery/Installation of Equipment[3]	2.81	2.73	3.00	2.60	2.88	3.10	2.92	2.91
Delivery of Required Software[3]	2.85	2.90	2.86	2.80	2.75	3.03	2.79	3.09
Did the system do what you expected it to do? (%)								
Yes	95.60	90.91	85.71	83.33	100.00	95.40	90.00	81.82
No	0.00	0.00	0.00	0.00	0.00	1.72	7.50	0.00
Undecided	4.40	9.09	14.29	16.67	0.00	2.87	2.50	9.09
Would you recommend the system to another user? (%)								
Yes	87.91	63.64	100.00	66.67	87.50	94.83	90.00	81.82
No	2.20	0.00	0.00	33.33	12.50	1.15	2.50	9.09
Undecided	9.89	27.27	0.00	0.00	0.00	4.02	7.50	9.09

[1] Ratings are from 4.0 to 1.0, with 4.0 high.

[2] Ratings are from 4.0 to 1.0, with 4.0 = very easy and 1.0 = very difficult.

[3] Ratings are from 4.0 to 1.0, with 4.0 = ahead of schedule and 1.0 = very late.

DATAPRO RESEARCH CORP. CHARTS

Users rate the vendors

Survey Item / Manufacturer	Burroughs Corp.	Data General Corp.	Datapoint Corp.	Digital Equipment Corp.	Harris Corp.	Hewlett-Packard Co.	Honeywell, Inc.	IBM	McDonnell Douglas Automation Co. (Microdata, Inc.)	NCR Corp.	Perkin-Elmer Corp.	Prime Computer, Inc.	Sperry Corp.	Tandem Computers, Inc.	Texas Instruments, Inc.	Wang Laboratories, Inc.	
Number of User Responses	132	62	27	313	7	188	40	489	25	67	24	150	35	12	12	88	31
Average Life of System (in months)	11.3	9.3	11.3	11.3	11.3	10.3	10.9	10.1	10.6	9.6	9.8	10.7	9.9	10.3	10.9	11.3	10.3
Acquisition Method (%)																	
Purchase	65.15	82.26	85.19	78.27	100.00	71.81	75.00	73.62	88.00	64.18	87.50	66.00	51.43	66.67	75.00	69.32	67.74
Rental or Lease from Manufacturer	23.48	0.00	3.70	4.79	0.00	14.36	5.00	9.20	0.00	19.40	8.33	24.67	37.14	0.00	0.00	12.50	12.90
Lease from Third Party	10.61	17.74	11.11	16.61	0.00	12.77	17.50	16.36	12.00	14.93	4.17	8.67	11.43	33.33	25.00	18.18	19.35
System Ratings[1]																	
Ease of Operation	3.50	3.53	3.31	3.45	3.57	3.46	3.10	3.50	3.64	3.62	3.00	3.46	2.84	3.55	3.42	3.69	3.42
Reliability of System	3.50	3.47	3.33	3.59	3.29	3.71	3.45	3.80	3.52	3.62	3.58	3.65	3.13	3.91	3.58	3.55	3.52
Reliability of Peripherals	3.33	3.52	3.41	3.44	3.14	3.66	3.18	3.62	3.32	3.47	3.08	3.37	2.87	3.64	3.55	3.38	3.42
Manufacturer's Maintenance Service																	
Responsiveness	3.48	3.53	3.41	3.49	3.29	3.56	3.30	3.45	3.33	3.44	3.29	3.31	3.29	3.73	3.83	3.20	3.52
Effectiveness	3.24	3.31	3.19	3.42	3.29	3.52	3.20	3.52	3.17	3.38	2.95	3.13	3.00	3.64	3.92	3.14	3.45
Manufacturer's Technical Support																	
Troubleshooting	2.89	2.98	2.65	3.17	3.00	3.20	2.82	3.12	3.00	3.10	2.76	2.88	2.57	3.18	3.36	2.70	3.10
Education	2.86	2.92	2.46	3.06	3.14	3.14	2.90	3.11	2.80	3.04	2.76	2.83	2.15	3.36	3.09	2.73	2.76
Documentation	2.58	2.70	2.46	3.06	2.43	2.98	2.77	3.14	2.96	2.79	2.39	2.69	2.29	3.09	2.83	2.67	2.67
Manufacturer's Software																	
Operating System	3.54	3.48	3.04	3.54	3.71	3.52	3.07	3.51	3.67	3.36	2.91	3.50	3.09	3.67	3.80	3.36	3.28
Compilers and Assemblers	3.37	3.29	3.13	3.43	3.43	3.39	3.18	3.46	3.60	3.44	2.95	3.20	3.18	3.50	3.44	3.38	3.24
Applications Programs	2.78	2.92	2.80	2.99	3.00	2.95	2.81	2.97	2.94	2.80	2.39	2.76	2.22	3.30	3.10	2.89	3.00
Ease of Programming	3.23	3.32	3.26	3.35	3.43	3.31	2.89	3.36	3.55	3.22	3.09	3.40	2.86	3.17	3.44	3.64	3.21
Ease of Conversion	3.17	3.20	2.67	3.13	3.43	3.32	2.91	3.08	3.44	3.25	3.04	3.21	2.91	3.10	3.11	3.34	3.12
Overall Satisfaction	3.27	3.46	3.04	3.42	3.29	3.42	3.15	3.44	3.59	3.38	3.00	3.35	2.83	3.58	3.60	3.38	3.28
Additional Ratings[1]																	
Ease of Expansion	3.32	3.63	3.56	3.42	3.29	3.58	3.44	3.47	3.71	3.63	3.21	3.70	3.21	3.92	3.27	3.57	3.35
Compatibility of Hardware Carried Over from Other Systems	2.95	3.29	2.71	3.36	3.00	2.96	3.03	2.98	3.05	3.19	2.86	3.30	2.58	3.27	2.90	2.73	3.04
Compatibility of Programs/Data Carried Over from Other Systems	2.94	3.22	2.50	3.04	3.29	3.09	2.79	2.84	3.05	3.30	2.90	3.02	2.94	2.89	3.00	3.11	2.87
Power and Energy Efficiency	2.95	3.22	3.08	3.02	3.29	3.18	3.03	3.20	3.29	3.27	3.27	3.07	2.78	3.17	3.36	3.13	3.10
Productivity Aids Help Keep Programming Costs Low	2.80	2.87	2.43	2.97	2.86	3.06	2.58	3.22	3.17	2.70	2.54	2.80	2.38	3.00	3.11	3.51	2.87
Software Support Delivered by Vendor	2.69	2.73	2.44	2.87	2.86	3.06	2.49	3.02	2.81	2.73	2.52	2.68	2.40	2.83	3.10	2.67	2.86
Keeping up with and Implementing Vendor Changes to Hardware/Software[2]	3.04	2.95	2.77	2.94	3.29	3.26	2.87	3.19	3.00	2.85	2.83	3.02	2.80	3.00	2.83	2.71	3.16
Delivery/Installation of Equipment[3]	2.81	2.85	2.88	2.82	3.00	3.08	2.92	3.00	3.25	3.11	2.80	2.97	2.60	3.25	3.42	3.02	3.17
Delivery of Required Software[3]	2.86	2.98	2.83	2.84	2.86	3.01	2.79	3.03	2.83	3.00	2.74	2.89	2.83	2.92	2.83	2.73	3.07
Did the system do what you expected it to do? (%)																	
Yes	90.15	95.16	92.59	93.61	85.71	95.21	90.00	94.07	88.00	92.54	87.50	89.33	74.29	100.00	91.67	94.32	93.55
No	5.30	0.00	7.41	2.24	0.00	1.60	7.50	3.07	12.00	1.49	12.50	5.33	14.29	0.00	8.33	3.41	3.23
Undecided	4.55	4.84	0.00	3.19	14.29	3.19	2.50	2.66	0.00	4.48	0.00	4.67	11.43	0.00	0.00	1.14	0.00
Would you recommend system to another user? (%)																	
Yes	81.82	95.16	74.07	87.54	100.00	93.62	90.00	93.87	92.00	91.04	83.33	89.33	65.71	91.67	83.33	92.05	87.10
No	5.30	0.00	7.41	5.43	0.00	2.66	2.50	3.07	8.00	2.99	8.33	8.00	14.29	0.00	0.00	0.00	9.68
Undecided	11.36	4.84	18.52	6.71	0.00	3.72	7.50	2.45	0.00	2.99	8.33	2.67	20.00	8.33	8.33	7.95	0.00

[1] Ratings are from 4.0 to 1.0, with 4.0 high.

[2] Ratings are from 4.0 to 1.0, with 4.0 = very easy and 1.0 = very difficult.

LEVEL 1 - 1 OF 1 STORY

July 24, 1985, Wednesday

DISTRIBUTION: Business Editors

LENGTH: 1049 words

HEADLINE: TANDEM-COMPUTERS; Financial results

DATELINE: CUPERTINO, Calif.

BODY:

Tandem Computers Inc. (OTC:TNDM) Wednesday announced operating results for the three-month and nine-month periods ended June 30.

In figures releases today, the California-based manufacturer of NonStop (TM) computer systems reported that revenue for the third fiscal quarter of 1985 was $144,165,000, compared with $141,925,000 posted in the same period a year earlier.

Net income for the three months was $2,388,000, or 6 cents per share vs. $9,250,000, or 23 cents per share, earned in the comparable period of fiscal 1984.

For the nine months ended June 30, revenue was $450,307,000, compared with revenue of $379,530,000 for the first nine months of fiscal 1984. Net income for the nine-month period was $23,257,000, or 56 cents per share vs. $21,278,000, or 51 cents per share, earned in the first nine months of fiscal 1984.

Commenting on the quarter, President James G. Treybig said, ''Worldwide revenue for the first nine months grew 19 percent over the same period in fiscal 1984. However, this performance was below our expectations.

''Results in the third quarter were affected by the general slowdown being experienced throughout the computer industry. The strength of the U.S. dollar compared with year-ago levels also adversely affected both revenue and earnings.

''We have maintained our investment in product development in support of our aggressive schedule of new product introductions for the coming year,'' Treybig stated. ''In addition, we continue to see good results from our high-priority marketing programs to attract third-party applications software allies and to develop new customers.

''In the third quarter, the number of software houses posted a very strong increase with 21 additions, and the number of new customers was up significantly from the second quarter level. We are continuing our program to improve manufacturing productivity and are taking steps to achieve similar efficiencies in marketing and support.''

Tandem Computers Inc. manufactures and markets computer systems and networks for the on-line transaction processing market. The company is headquartered at 19333 Vallco Parkway, Cupertino, Calif. 95014. Telephone is 408/725-6000.

Tandem Computers Inc. and Subsidiaries
Consolidated Interim Statement of Incomme
(Unaudited)
(In thousands, except per share amounts)

	3 Months Ended 6/30 1985	1984
Revenue		
Product revenue	$116,868	$119,064
Service and other revenue	27,297	22,861
Total revenue	144,165	141,925
Costs and expenses		
Cost of revenue	56,116	56,563
Product development	18,027	13,514
Marketing, general & administrative	69,482	57,506
Total costs and expenses	143,625	127,583
Operating income	540	14,342
Interest income, net	1,298	1,243
Income before income taxes	1,838	15,585
Provision for income taxes	(550)	6,335
Net income	$ 2,388	$ 9,250
Earnings per share	$.06	$.23
Weighted average shares earnings	41,896	41,039

Prior period amounts associated with cost of service and other revenue have been reclassified in order to conform to the current period presentation.

Tandem Computers Inc. and Subsidiaries
Consolidated Interim Statement of Income
(In thousands, except per share amounts)
(unaudited)

	9 Months Ended 6/30 1985	1984
Revenue		
Product revenue	$371,091	$318,761
Service and other revenue	79,216	60,769
Total revenue	450,307	379,530
Cost and expenses		
Cost of revenue	175,850	155,749
Product development	50,229	37,216
Marketing, general and administrative	191,476	153,339
Total costs and expenses	417,555	346,304
Operating income	32,752	33,226
Interest income, net	4,759	3,461
Income before income taxes	37,511	36,687
Provision for income taxes	14,254	15,409

Net income	$ 23,257	$ 21,278
Earnings per share	$ .56	$ .51
Weighted average shares outstanding	41,812	41,558

Prior period amounts associated with cost of service and other revenue have been reclassified in order to conform to the current period presentation.

Balance sheet available from Business Wire.

CONTACT: Tandem Computers Inc., Cupertino
Cacey Tangney, 408/725-7555
or
Pat Becker, 408/725-6035

(morning)

Earnings

Tandem net drops

Tandem Computers Inc. of Cupertino reported Wednesday lower profits and higher sales for its third quarter ended June 30 compared to the similar quarter a year ago.

Operating profits were $540,000, down 96 percent from the $14.3 million of a year ago.

The company had a tax credit of $550,000 in the recent quarter, compared to a tax payment of $6.3 million of a year ago.

Including the effect of interest and taxes, profits were $2.4 million, or 6 cents a share, a drop of 74 percent from $9.3 million, or 23 cents a share.

Sales were $144.2 million, up 2 percent from $141.9 million of a year ago.

Tandem makes computers for the on-line transaction processing market.

Businessland gains

Businessland Inc. of San Jose reported Wednesday higher profits and sales for its fourth quarter ended June 30 compared to the similar quarter a year ago.

Operating profits were $1.8 million, compared to a loss of $3.7 million for the year-ago quarter.

The company had a $195,000 credit for tax loss carryforwards in the recent quarter and no credit a year ago.

Including the effect of interest income and taxes, the company had profits of $1.3 million, or 6 cents a share, compared to a loss of $2.9 million or 13 cents a share, a year ago.

Sales were $86.9 million, up 184 percent from the $30.6 million for a year ago.

The company had an operating loss for the year ended June 30 of $126,000, down 98 percent from the operating loss of $7.1 million for the previous year.

Including the effect of taxes, interest income and the fourth quarter's tax credit, profits for the year were $239,000, or 1 cent a share, compared to a loss of $4.8 million, or 34 cents a share, for the previous year.

Sales for the year were $267.4 million, up 198 percent from the $89.6 million of a year ago.

Businessland sells computer systems.

Stanford Telecom

Stanford Telecommunications Inc. of Santa Clara Wednesday reported higher profits and sales for its first quarter ended June 30 compared to the similar quarter a year ago.

Profits were $450,000, up 83 percent from the $246,000 of a year ago. On a per-share basis, profits were 13 cents, up 86 percent from 7 cents of a year ago.

Sales were $8.8 million, up 24 percent from the $7.1 million of a year ago.

Stanford Telecommunications makes communications software and earth terminal electronic systems.

Datacopy losses rise

Datacopy Corp. of Mountain View reported Wednesday larger losses and higher sales for its second quarter ended June 30 compared to the similar quarter a year ago.

The net loss was $598,147, or 14 cents per share, up about 7 percent from the loss of $557,783, or 13 cents a share, from a year ago.

Sales were $1.2 million, up 35 percent from the $896,971 of a year go.

Datacopy makes scanners and imaging systems.

Circadian net rises

June 30	1985	1984	%chg
Sales	$4,535,000	$2,275,000	+99%
After tax op inc	296,000	111,000	+176
Per share	.08	.03	+167
Net income	522,000	175,000	+198
Per share	.14	.05	+180
	1985	1984	%chg
Sales	$13,003,000	$6,423,000	+102%
After tax op inc	626,000	132,000	+374
Per share	.18	.04	+350
Net income	1,107,000	408,000	+171
Per share	.32	.14	+129

Circadian, which makes heart monitoring and other medical diagnostic equipment, raised about $5 million in an initial public stock offering in June.

VU/TEXT INFORMATION SERVICES, INC.
A KNIGHT-RIDDER COMPANY
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RANK 1 OF 1, PAGE 1 OF 2, DOCUMENT NUMBER 50590
DATE: THURSDAY July 25, 1985

THE WASHINGTON POST
PAGE: E01 EDITION: FINAL

SECTION: BUSINESS & FINANCE LENGTH: MEDIUM

*TANDEM*PLANS END TO RESTON PRODUCTION

SOURCE: By Michael Schrage
Washington Post Staff Writer

*Tandem*Computers Inc. of Cupertino, Calif., yesterday said that it will stop manufacturing breakdown-resistant computer systems in Reston.

The announcement came as*Tandem*released its latest earnings report, which showed an unexpectedly large drop of 73.9 percent-from 23 cents a share during the second quarter of 1984 to 6 cents a share in the latest quarter on revenue of $144.1 million.

The steep earnings decline makes*Tandem*the latest corporate victim of the industrywide slump afflicting computer companies from International Business Machines Corp. to Wang Laboratories Inc. to Apple Computer Co.

The shutdown will affect at least 55 manufacturing workers in the Reston site who build*Tandem´s*Non-Stop brand of "fault-tolerant" computer systems. Fault-tolerant computers are favored by banks, newspapers and other companies heavily reliant on computer processing because they are specially designed to minimize breakdowns and the loss of valuable data.

The shutdown will be the first in*Tandem´s*11-year history, but spokeswoman Pat Becker stressed that only manufacturing operations will be eliminated at the company´s East Coast division headquarters in Reston.

The phase-out in part "reflects our manufacturing productivity enhancement, and it also reflects the overall slowdown in the industry," Becker said.

According to the company, the Reston site, which began operations in 1982, is the smallest of*Tandem´s*four manufacturing facilities. The two largest plants are in the San Francisco Bay area, and a third is in Germany.

Becker said that efforts would be made to relocate the 55 manufacturing employes rather than releasing them.

*Tandem*said it also is considering consolidating its Falls Church service and marketing offices, which employ 79 people, with the Reston facility, which employs 158 people, but Becker insisted that no layoffs are planned.

"The people from Falls Church have different functions than the people in Reston, and they would utilize the space that was used by the manufacturing operation," she said.

LEVEL 1 - 1 OF 6 STORIES

July 25, 1985, Thursday, Final Edition

SECTION: Business; E1

LENGTH: 343 words

HEADLINE: **Tandem Plans End to Reston Production**

BYLINE: By Michael Schrage, Washington Post Staff Writer

KEYWORD: TANDEM

BODY:

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