
GLOBAL ELECTRONICS

Issue No. 115

August, 1992

KEEPING P.C.-BOARD WASTE OUT OF THE S.F. BAY

Historically in Silicon Valley, one of the easiest ways to identify *printed circuit board* (PC-board) suppliers has been to check the list of violators of Clean Water laws. Printed circuit boards are the laminated boards to which chips, resistors, and other electronic components are attached to form the guts of most forms of electronic equipment.

On each board, metallic circuit patterns are printed, usually through an electroplating process. Components are joined to the boards with solder and similar materials. Consequently, traditional forms of PC-board fabrication generate large quantities of heavy metal wastes, including copper, lead, nickel, and cadmium.

Though on-site pre-treatment is supposed to eliminate most of the heavy metal wastes from the plant wastewater, many firms conveniently ignore that portion of process. Even those that treat their discharges release hazardous quantities of toxic wastes.

Toxic wastewater discharges threaten the viability of the bacteria-based publicly owned treatment works, or sewage plants—there are three in Silicon Valley—to which the sewage flows. More important, heavy metals from the electronics industry have accumulated in the San Francisco Bay.

The southern San Francisco Bay, in particular, is highly vulnerable to toxic wastewater. It's a shallow estuary fed only by seasonal streams. The area's shrimp industry has all but disappeared due to "black spot" disease, triggered by environmental contamination. Other fish show visible lesions. The Health Department has warned against eating ducks from the Bay, and the accumulation of toxics is threatening endangered species such as the California Clapper Rail, a bird whose habitat is the disappearing South Bay wetlands.

Pollution control and source reduction technologies already exist to dramatically cut the environmental discharges by printed circuit board manufacturers, but the structure of the industry has held back progress. Though some major electronics firms do PC-board work in-house, and there are a few major subcontractors such as Flextronics and Solectron, most of the industry consists of

small, "garage-shop" subcontractors. Computer manufacturers tend to farm out their dirty work to these firms, which compete vigorously to get the contracts—often by cutting "non-productive" environmental investments.

Typically small, these companies usually do not even have the environmental expertise to understand, let alone comply with the rubric of environmental laws that now apply in California. Thus, they are regularly cited for Clean Water Act violations. Some have been ordered to close. At times, company officials have been jailed.

Even many of the more responsible PC-board fabricators are caught in a bind. If they spend money to achieve environmental goals, their competitors—including firms in the Far East, where environmental controls are weaker—may steal their business.

On the surface, at least, an important stratum of Silicon Valley manufacturing is threatened. But it doesn't have to be that way.

San Francisco-based Citizens for the Better Environment, the leading voice identifying the problem of toxic Bay contamination, has developed a "clean safe jobs" strategy to clean the bay and protect local jobs. CBE proposes a technical and financial assistance program to:

- Fund pollution prevention audits and business plans that recommend the best process changes to eliminate waste water pollution at the source;
- Provide technical experts to help assure that the pollution prevention business plans are successfully carried out;
- Help the firms finance their pollution prevention business plans through loan guarantees, buy-down of interest rates, and other actions; and
- Ensure worker retraining and involvement in the development and operation of nonpolluting processes or tasks.

In the depths of a state and local fiscal crisis and a nationwide recession, funding such new programs could be a challenge. However, this pollution prevention strategy should be much less costly than the public and private pollution control

(continued on page 2)

measures that would be necessary if waste is not cut at the source.

CBE believes that PC-board manufacturers stand to gain from pollution prevention: "Actions that virtually eliminate toxic sewer pollution from these shops are not just feasible; they are good business. Toxic metals can be recaptured before they become wastes using electrolytic, evaporative, and ion exchange recovery methods. Some metal finishing and printed circuit board shops have already achieved zero discharge by reducing rinse water, separating waste streams, using longer-lasting copper etching chemicals, and closing the loop so that water and copper go back into production lines instead of down the drain. These actions save so much in raw materials, water, and hazardous waste disposal that shops may start making money on pollution prevention investments in as little as three to five years." (*CBE Environmental Review*, June, 1992)

For more information, contact CBE, 501 Second Street, Suite 305, San Francisco, CA, 94107. (415/243-8373)

H-P TO HOLD SUPPLIERS ACCOUNTABLE

The contracting out of dirty work, such as printed circuit board fabrication, is one of the greatest obstacles to cleaning up the electronics industry. Since Silicon Valley groundwater contamination spurred new chemical and waste storage technologies a decade ago, big-name computer manufacturers have had *relatively* good—but by no means spotless—environmental records. Their little known suppliers, however, have continued polluting as usual.

At least one major Valley company, Hewlett-Packard, is beginning to address that problem. H-P is now asking its suppliers whether their products were made with ozone-depleting substances? Can the product or its packing be recycled? Is the vendor taking part in the EPA's pollution prevention program? For now, it is merely surveying its vendors, but it may eventually include their environmental practices in its purchasing criteria. (*Electronics News*, June 15, 1992)

POWERING DOWN

The Environmental Protection Agency estimates that a full five percent of all electricity used in the United States is consumed by personal computers! What's more, unless countermeasures are

taken, it should increase to a whopping ten percent by the end of the decade.

Much of that power consumption is wasted on idle machines, computers plugged in and turned on around the clock, but used for only a portion of that time. Screen-saver utilities, designed to prevent damage to video display tubes by darkening them, do little to conserve power.

EPA, working with six top U.S.-owned computer manufacturers, has established the Energy Star Computer Program with the goal of cutting PC power use in half. It estimates that the new feature could save computer users up to \$1 billion a year in electricity charges.

Beginning 1993, the participants plan to build power management chips and software into their desktop machines that work off AC wall current. Currently, such technology is used only in battery-powered machines. In essence, all PC functions, not just the display, go to "sleep" when the machine is out of use.

The six initial participants, which account for the lion's share of U.S.-built desktop computers, are Apple Computer, Compaq, Digital Equipment, Hewlett-Packard, IBM, and NCR (now a part of AT&T). (*San Jose Mercury News*, June 17, 1992)

WORKFORCE POLARIZATION

The polarization of the U.S. workforce, a trend we have been warning about for several years, has become so noticeable that even *Fortune* magazine recognizes the problem. In a recent cover story

GLOBAL ELECTRONICS

edited by Lenny Siegel

Issue No. 115

published by the Pacific Studies Center

222B View Street

Mountain View, CA

94041 - USA

Phone: 415/969-1545

Fax: 415/968-1126

US ISSN 0739-0416

subscription rates (12 issues)

United States: \$12.00

Canada and Mexico: US\$14.00

Overseas: US\$18.00

all back issues are available

Copyright ©, August, 1992

Mountain View, California

(August 24, 1992), *Fortune* concluded, "Solid middle-class jobs, the kind that allow a single worker to be the family breadwinner, have been disappearing in record numbers and are being replaced more often than not by lower-wage jobs, many of them astonishingly inadequate."

The median wage of U.S. full-time workers, adjusted for inflation, actually fell from \$409.13 per week in 1979 to \$398.88 in 1989. *Fortune* reports, "The Census Bureau calculates that 18.9% of full-time workers had low-wage jobs in 1979. Ten years later this dismal figure had risen to 23.1% of the work force, and the recent recession has since pushed it up to 25.7%."

Fortune also found that five million jobs added in the U.S. from 1979 to 1989, of the 13.6 million total, paid less than \$250 a week. It concluded, "That's below the official poverty level for a family of four. More than 1.6 million of those low-paying jobs were positions in restaurants, stockrooms, and retail sales, where the chances for promotion are low."

Fortune gives some lip-service to high-performance work organization—defined as a workplace that "combines high skills, high productivity, and relatively high wages." But it fails to analyze how technology strategies, such as automation, work against the upgrading of production and service work.

For example, *Fortune* lauds a Boston-area fish processor that computerized its traditionally labor intensive operation, boosting sales nearly eight-fold and raising employment. While this firm was able to hire new, skilled workers, the automation strategy breaks down when applied to an entire industry. If all fish processors were to efficiently implement the new processes, there would be even fewer jobs.

When technology is used merely to do old jobs more productively, it tends to drive down wages. For the workforce as a whole to take advantage of new technologies, there must be an emphasis on new products and services.

Furthermore, there is no reason to expect most employers to raise wages unless they need to attract workers with rare skills or training. The professionals who program and control high-tech equipment may be in a position to insist upon decent salaries, but production and service workers—like their predecessors—will be paid well only if they act collectively, through unions or by passing laws to boost minimum wages, will they be able to get their fair share of the wealth they help generate.

JANITORS WIN AGAIN AT H-P

SEIU Local #1877, the same union that won union recognition for contractor-employed janitors at Apple Computer, has won another important victory. Hewlett-Packard, one of the largest employers in Silicon Valley, has awarded a maintenance contract to ISS, a unionized firm. The wages of 300 janitors will rise up to \$1.00 above the current \$5.25 per hour, and for the first time they will receive full family health coverage.

Though the Cleaning Up Silicon Valley Coalition did not mount the high profile corporate campaign it organized at Apple, it was gearing up for a repeat had H-P not come to terms. H-P has a tradition of opposing unionization of its direct-hire workforce, it has relied upon above average pay and benefits to prevent even the beginning of organizing efforts.

While no single campaign can overcome structural inequities in workers' pay—described above—the janitors will find life in Silicon Valley a little bit more affordable as a result of the Coalition's efforts.

FEDERAL COMPUTERS

Since the earliest days of digital computing, the U.S. government has been a huge, critical market for information technology products. Historically, the Department of Defense has dominated the government market. With the Cold War over, however, and other requirements expanding, the military's importance is declining.

Overall, civilian Federal agencies plan to spend \$15.5 billion on information technology in fiscal year 1993. The defense sector expects to spend \$9.5 billion. According to the Electronics Industry Association (EIA), reports *Aviation Week & Space Technology* (June 29, 1992), "The Internal Revenue Service and the Federal Aviation Administration will become the largest U.S. government purchasers of information technology systems by 1997, displacing the Air Force and the Navy from the top two slots." The EIA anticipates a 3.1% decline in defense information technology spending over a five-year period, while civilian expenditures rise 2.1%—netting out to a 0.2% annual real growth.

The trend toward civilian procurement reinforces a trend away from custom systems to commercial, off-the-shelf products. In fact, even the military is moving toward the procurement of more technically advanced civilian systems for many applications.

IBM VS. GERMAN UNIONS

Though successfully anti-union in the U.S., computer industry giant IBM has historically been forced to accept union representation in Germany. At the end of June, IBM-Germany's Chief Executive announced that the firm planned to divide the firm into four operating companies. Only one, the 7,000-worker manufacturing division, would retain its contract with the powerful metalworkers' union, IG Metall. The other three divisions, employing 17,500 people, would go non-union.

IBM says it offers above average pay, but it lacks the flexibility it wants to reward productive workers. It also fears moves toward a 35-hour workweek.

Business Week (July 13, 1992) says that IBM "still is obliged to deal with the company's workers' council. That requirement has enabled IG Metall to force 1,500 other breakaway employers into deals similar to ones reached by bigger companies. But there's no guarantee that the metalworkers will succeed against the powerful IBM."

SEC SELLS DATA BASE

In June, consumer advocate Ralph Nader and more than 200 others asked the Securities and Exchange Commission (SEC) to modify a \$68 million contract for its new computerized corporate report data base, EDGAR. EDGAR, the Electronic Data Gathering Analysis and Retrieval system, is designed to store and process the SEC's massive collection of corporate reports, such as "10K" filings and stock prospectuses. EDGAR will receive

about 11 million pages a year in filings from the thousands of corporations that trade securities in the U.S.

Nader said, "The records that will be collected and stored by the EDGAR system represent one of the world's most important and valuable databases on corporate activities." Yet the SEC's arrangement with BDM International and Mead Data Central, "publisher" of LEXIS and NEXIS, limits public access to the EDGAR data. Nader added, "The current EDGAR subcontract with Mead is woefully inadequate in terms of public access to the information system, and in fact, does little more than subsidize Mead's own business of selling access to public records."

MEAD will provide 650 SEC-owned terminals with on-line access to the database, but it will not provide the government with a complete data set in electronic form—only microfiche.

Alarmed by the SEC's contract with Mead, more than 200 journalists, economists, librarians, business professionals, and citizens groups joined Nader in signing a letter asking SEC Chair Richard Breeden, Representative Ed Markey (D-Massachusetts), and Senator Herbert Kohl (D-Wisconsin) to expand access to the EDGAR system. They are asking the SEC to allow the public to obtain access to the \$13.5 million Mead text retrieval service by purchasing subscriptions at the incremental costs of supplying the service. Government depository libraries, they requested, should have free access. EDGAR filings, they asked, should also be available on CD-ROM. (For more information, contact the Taxpayers Assets Project, Box 19367, Washington, DC, 20036. Phone: 609/683-0534.)

BULK RATE
Non-Profit Organization
U.S. POSTAGE
PAID
PERMIT NO. 155
MOUNTAIN VIEW, CA

Pacific Studies Center
222B View Street
Mountain View, CA
94041 - USA

Address Correction Requested