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# GLOBAL ELECTRONICS

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## JAPAN

Top executives at a number of merchant semiconductor firms are taking advantage of the industry's year-long slump to seek government relief from what they call unfair Japanese competition. Charles Sporck, president of National Semiconductor says, "While free trade remains a long-term goal, some short-term manipulations designed to curb the excesses of our overseas competition might be of considerable value. . . . protectionism beats extinction." (*Peninsula Times Tribune*, November 21, 1985)

Micron Technology, Intel, the Semiconductor Industry Association and the Commerce Department have all filed formal complaints against Japanese semiconductor suppliers, and thus far rulings from the U.S. International Trade Commission have backed the American side.

The impression has been created, in the mass media, is that Japan is winning a high technology trade war, but in reality Japanese electronics firms are suffering through a cyclical slump, just like their American counterparts. Japanese firms might not always play by the rules - particularly American rules - but they have become scapegoats for the realities of competitive capitalism.

The San Jose Mercury News, which generally does a good job of covering high-tech industry, ran a misleading banner headline on January 15: "Japanese firm is No. 1 in chip sales." NEC (Nippon Electric), according to information supplied by market researcher Dataquest, had jumped from third to first on the international ranking, despite a drop from \$2,251 million in sales in 1984 to \$1,984 million in 1985. Motorola, at \$1,850 million, placed second.

In fact, the Mercury News mistakenly equated "chips," or integrated circuits, with "semiconductors." The article explains that NEC's sales decline was cushioned by its strong sales in discrete semiconductors, primarily transistors. Motorola, too, is strong in discrete components. It is likely that Texas Instruments, historically the number one producer of integrated circuits, would have topped a "chips only" sales list in 1985.

Japanese companies dominate the market for dynamic random access memory chips, but that domination has hardly been profitable. The Weekly Letter of the Federal Reserve Bank of San Francisco (October 18, 1985) reported, "Since personal computers are a major source of demand for the memory chips in which Japanese producers hold a 70 to 90 percent market share, Japanese firms that export chips to the U.S. were far more devastated than U.S. producers when personal

computer demand slowed. One analyst, who in late July anticipated a 20 percent reduction in total U.S. semiconductor sales for 1985, expected a decrease of 65 percent in the sales of memory chips."

*Electronics* (November 11, 1985) reports, "The Japanese control more than a 90% share of the world market for 256-K random-access memories, but that's 90% of a disaster, say analysts. The average price of a 256-K DRAM was \$13.79 in Japan last year; this month it's \$1.53, and heading lower."

The Japanese were indeed hit hard. Japan's Ministry of Finance projected, based upon the first eleven months of 1985, that Japanese chip exports to the U.S. would fall 40%, from \$1.6 billion in 1984 to \$900 million in 1985. (*Electronics*, January 6, 1986)

However, to bolster its claim that U.S. firms were bearing the brunt of the downturn, the Semiconductor Industry Association told a U.S. Senate hearing in November that U.S. semiconductor employment had fallen 19% since December, 1984 (from 280,000 to 226,000), while Japanese semiconductor employment had declined only 5.5% in the same period. (*San Jose Mercury News*, November 14, 1985)

Anyone who has followed the practices of large Japanese companies, however, knows that they are much less likely to lay off employees during a slump, even at the expense of profits. Idled workers are assigned "gardening" tasks, which include general clean-up, factory, maintenance and repair, painting, and even landscaping." When the recovery comes, they are ready to return instantly to production jobs. (*San Jose Business Journal*, October 14, 1985)

But guaranteed employment covers only full-time permanent employees, not contract (temporary), and part-time workers, who are predominantly women. Toshiba, for example, refused to renew the six-month contracts of 2,000 workers.

The 5.5% reduction reported by the SIA - from figures generated by Dataquest - supposedly included such cutbacks, but San Jose Mercury News business writer Evelyn Richards charged, "even Dataquest's close tracking did not uncover the 2,000 layoffs reported by a Toshiba spokesman." (November 27, 1985)

Smarting from the downturn, Fujitsu, Hitachi, Toshiba, and Oki Electric have stalled plans for expansion in the U.S. In fact Fujitsu has postponed indefinitely its plan to build a wafer-fab plant in

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Gresham, Oregon. (Electronics, November 11, 1985) This is a facility that Fujitsu announced when Oregon abandoned the unitary method of calculating corporate taxes, and its plans were cited by lobbyists trying to get California to do the same.

Meanwhile, Japan's powerful Ministry of International Trade and Industry (MITI) is urging Japanese companies to cooperate to reduce Japan's dependence of foreign supplies of high-grade polysilicon, the raw material from which silicon wafers are made. Presently foreign suppliers, particularly Dow Corning and German-owned Wacker Chemicals, dominate the Japanese market. In addition to a Monsanto project already underway in Japan, several new Japanese-owned ventures are being organized, and if they all go into production, the Japanese market will soon be oversupplied. (Electronics, December 16, 1985)

Though Japanese high-tech companies have not established themselves as major players in the U.S. or worldwide computer market, many are key suppliers of parts and peripheral equipment for personal computers. They have not, however, established themselves in the market for high capacity (over 40 megabyte) 5 1/4" disk drives. One American executive told Electronics (November 18, 1985) that Japanese suppliers had proven ineffective because, "It's the first Japanese product which has no domestic Japanese market."

Other American drive-makers suggest that American computer manufacturers are unwilling to cooperate with Japanese suppliers because the Japanese peripheral manufacturers are merely branches of larger electronics firms that build computers. The U.S. computer companies are afraid that technical data would leak to the computer development divisions of the Japanese firms.

In November, the U.S. Trade Representative's office announced that Japan had agreed to eliminate tariffs on computer parts, computer systems, and peripherals, while the U.S. promised to do away with duties on computer parts - except those incorporating cathode ray tubes (San Jose Mercury News, November 23, 1985). Since IBM supplies the Japanese market from its Japanese plants, it is not clear what the changes will do to the trade balance between the two countries.

Despite all the posturing over trade practices, U.S.-based and Japanese-owned firms continue to form cooperative ventures. Sperry, for example, the company which marketed Univacs, the world's first commercial computers, is buying Hitachi-made subsystems for its mainframe computers. Sperry considers the arrangement temporary, but Fortune (December 9, 1985) warns, "The project would require such intimate collaboration that Sperry might be forced to turn to Hitachi for help with [Sperry's] next-generation Mercury and all its successors."

Mouse Systems has established a joint venture with SMK Corp., a Japanese maker of electromechanical components, to build and sell "mouse" input devices in

Japan (San Jose Mercury News, November 14, 1985). Pyramid Technology will supply supermini-computers to Sharp Corp. of Japan (San Jose Mercury News, November 27, 1985). Siliconix is buying gate array (semicustom chip) design and manufacturing technology from Seiko Epson (San Jose Mercury News, November 12, 1985). And Vitelic is licensing its 1-megabyte dynamic RAM design to NMB Semiconductor.

Though many Americans hope that South Korean electronics firms, using licensed American technology, will undercut the Japanese in many key markets, from RAM chips to video cassette recorders, the Japanese are also cooperating with the Koreans. Electronics lists 28 separate joint ventures and licensing agreements linking firms from the two Asian countries (November 25, 1985).

Finally, the difficulties that Japanese electronics firms are experiencing in the memory chip market are nothing compared to their exposure in video cassette recorders. At some point soon, supply should exceed demand in the U.S. market for home VCR's, which has always been dominated by machines made in Japan - including all "American" brand names. Once that happens, prices will crash, so the business will be unprofitable even if sales continue at a modest pace.

Unlike memory chips, however, the Japanese firms will have no American competitors from which they can gain market share. Unless vast new markets - VCR's to other countries, compact disk audio systems, etc. - develop, a financial bloodbath will ensue.

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## SURVEILLANCE

One of the greatest dangers of the rapid expansion of high-technology electronics is the ease with which would-be "Big Brothers" can collect, scan, and process personal information. A recent Congressional study ("Electronic Surveillance and Civil Liberties," Office of Technology Assessment, October, 1985) shows that the threat of electronic privacy invasion is more than theoretical. The OTA surveyed 142 Federal agencies and bureaus, excluding those assigned national security responsibilities - such as the National Security Agency, the biggest brother of them all - and found that 35 use or plan to use at least one form of electronic surveillance. A total of 36 operate computer record systems on individuals and organizations. However, reports the OTA, "The extent of use of electronic surveillance by the private sector is unknown."

The most common form of Federal electronic surveillance is closed circuit television, which is utilized by 25 separate offices (4 others plan to use that technology). Twenty-one (1 plans) use night-vision systems, while 19 (2) employ miniature transmitters. Thirteen (1) tap ones, while 11 (3) use pen registers to collect telephone dialing information.

Not surprisingly, the use of new surveillance technologies is rising quickly. For example, one agency component currently conducts electronic mail monitoring or interception, but 5 more plan to do it. Three (plus 2) intercept cellular radio conversations, while 1 (plus 3) intercept satellite communications, 1 (plus 1) intercept microwave communications, and 1 plans fiber optic interception. Two (plus 2) use pattern recognition systems, while 3 plan to use expert systems and 3 plan to use voice recognition techniques.

The OTA found that legislation designed to protect privacy has not kept up with the technology. Though Congress has enacted laws designed to restrict the monitoring of telephone communications, cellular and cordless phone calls, telephone dialing information, digitally encoded voice, and electronic mail are not clearly protected by existing law.

Studies such as OTA's may, unfortunately, be counterproductive unless Congress takes action. Thus far, the courts have ruled that many forms of electronic surveillance are legitimate if the communicating parties have no reasonable expectation of privacy. For instance, the Supreme Courts of Kansas and Rhode Island have both ruled, in the past two years, that emissions from a cordless phone may be monitored legally because the phone-user knows the conversation is broadcast.

As the extent of existing surveillance is documented and reported by advocates of better protection, the public is learning that it cannot reasonably expect much privacy anywhere. If new forms of communications are *expected* to be open to interception, then the courts will re-inforce that perception.

Meanwhile, the Reagan administration plans to propose legislation to give certain government agencies

access to individuals' non-government insurance records as well as previously well-guarded files at the Internal Revenue Service. The government would use the data to determine more carefully the eligibility of people applying for student loans, veterans' insurance, or Medicare reimbursement. (New York Times, cited in San Jose Mercury News, October 14, 1985).

## WORKER ACTION

Reports of worker militancy at high-tech firms continue to trickle in from around the world:

Last June, workers at two Tijuana, Mexico factories of Silicon Valley-based Varian Associates struck for a contract and better salaries. The two subsidiaries, Pul and Krantz, were two of the area's largest employers, with 800 and 500 workers respectively. Roughly two-thirds were women. After ten days, the strikers returned to work without a contract. Strike activists were fired, and Varian shifted 350 jobs to another subsidiary in Chihuahua. (Bridge Over the Border Bulletin, August-October, 1985)

At the Philippines' largest electronics employer, locally owned Stanford Microsystems, workers walked off the job last June 13 to protest the reduction of their work week. In early July, following picket-line violence, one of the plant's unions settled. Four thousand of SMI's 7,000 workers returned to work. The remaining workers continued their strike. Despite continuing attacks upon strikers, reportedly by police as well as SMI security guards, the strike was still going on as of our last communication, in mid-September. (Asia Labor Monitor, October, 1985, plus correspondence)

In December, 14 workers from the bankrupt Incheon Dongbo Electronics Co. in Incheon, South Korea occupied government offices at their export processing zone to demand that the company be forced to pay 180 idled workers their last two months pay. After nearly four hours, the police dispersed the demonstration. Eleven protesters jumped from the office's second story window. Four of those were hospitalized; the other ten demonstrators were arrested and sentenced to 3-5 days in jail. (Korea Weekly Report, January 3, 1986)

Over three thousand military electronics workers, including 1,910 engineers, at Sperry Corporation's Lake Success, New York plant appear to have won a 53-day strike, the longest in the company's history. Workers represented by four locals of the International Union of Electronic, Electrical, Technical, Salaried, and Machine Workers (IUE) voted in early November to accept a settlement that included a five percent annual pay increase for the three years of the contract and language ensuring that the contract could not be voided if the division were bought out. Most of the company's proposed givebacks were defeated. (Electronic Engineering Times, November 11, 1985)

### O.P.I.C. LABOR RIGHTS

As predicted in *Global Electronics* (September, 1985), Congress has enacted legislation designed to forbid the Overseas Private Investment Corporation (OPIC) from operating in countries which are not taking steps to protect "internationally recognized workers rights." OPIC, a semi-autonomous U.S. government agency, insures U.S.-based multinational corporations against war, insurrection, expropriation, and currency inconvertibility in foreign countries. Many offshore electronics assembly plants have been backed, from the start, by OPIC coverage.

Internationally recognized rights are defined as "the right of association; the right to organize and bargain collectively; a prohibition on any form of forced or compulsory labor; a minimum age for the employment of children; and acceptable conditions of work with respect to minimum wages, hours of work, and occupational safety and health." Whether a country meets those standards is obviously up to interpretation, but the legislation creates a forum for debating such issues. OPIC, in consultation with the Labor and State Departments, must annually review labor rights policies in each country where it is active.

The House-Senate conference committee that finalized the bill's language wrote, "The conferees note that promoting respect for internationally recognized worker rights is vital to insuring that the populations of the host countries benefit from OPIC programs. Denial of worker

rights in developing countries tends to perpetuate poverty and to limit the benefits of economic growth to a narrow segment of the population, thereby retarding economic development and increasing social and political instability in these countries." They failed to note, but undoubtedly they realized, that steps enforcing labor standards and rights would reduce the threat to American jobs posed by companies paying extremely low wages in the Third World.

It is too soon, of course, to measure any impact from the OPIC legislation. It left one major loophole, allowing the President to waive the prohibition if he determines that OPIC's program in a particular country is vital to American economic interests. (*Congressional Record*, December 10, 1985, p. H11674)

### TERMINAL LIMITS

The Telecommunications Workers Union, representing workers at British Columbia Telephone (a Canadian subsidiary of GTE), has won a demand that management use of video display terminals be limited. To prevent executives from carrying out work normally done by employees in the TWU's bargaining unit, managers will be assigned passwords providing access only to computer applications consistent with management tasks. (*TWU Transmitter*, December, 1985)

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