
GLOBAL ELECTRONICS

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WE SKIPPED JUNE

Due to a shortage of time and money, we published no issue of **Global Electronics** in June. Since subscriptions are based upon the number of issues, not the date, no subscriber will be shorted.

BOOM AGAIN

Though the U.S. economy as a whole still seems mired in the recession, the semiconductor and semiconductor equipment industries are booming once again. Silicon Valley firms are hiring and reporting significant gains in income. Current trends may exaggerate the size of the upturn, since chip purchasers are rebuilding inventories in anticipation of an eventual shortage. Once inventories reach pre-recession levels, sales may even out.

Still, growth has been large enough to create production bottlenecks. Silicon producers, for instance, report that it may take some time to staff up even to fully utilize their existing capacity. **Electronics** (July 14, 1983) also reports, "For the most part, U.S. integrated-circuit makers seems to agree that the industry is heading for a bottleneck at the back end of manufacturing, where most devices are shipped offshore to be assembled and tested."

KOREANS ABROAD

Three South Korean conglomerates, as part of their efforts to integrate into more advanced electronics technology, have set up shop in Silicon Valley (see issue no. 31). Hyundai has established Modern Electrosystems in Sunnyvale. Samsung has set up a research and development center, also in Sunnyvale. And Gold Star reportedly plans a similar venture.

The **San Jose Mercury** (June 27, 1983) asked Korean executives why they did not go to Japan, which is much closer, and reported, ". . . Japan is not open to them. Historical animosity between the two nations further hinders cooperation."

Electronics (June 16, 1983) found that some of Hyundai's Korean competitors were skeptical about the industrial giant's highly publicized move into high-tech. A Daewoo Electronics executive, for instance, said that "Hyundai lacks the marketing and distribution resources to sell the chips it makes." A Hyundai spokesman responded that the firm will focus at first on supplying its own manufacturing plants, such as auto production, and that it will emphasize systems over components.

TAIWAN

Taiwan, unlike other Asian countries, has managed to create an environment in which Silicon Valley-type start-ups can succeed. In contrast, innovation in Japan and South Korea is generally channeled into branches of massive industrial and trading firms. **Business Week** (August 1, 1983) reports, "In contrast to the lifetime loyalty of many Japanese to their employers, most Chinese aspire to be their own bosses."

Most Taiwanese start-ups, such as Microtek, Mitak, and Advanced Devices Technology, were founded by engineers who returned to Taiwan after working for high-tech firms in the United States. Some, such as Mitak and Multitech International, have relied on importing and marketing U.S.-made components to earn early profits. Operating costs are low, however, since salaries as well as wages are well below the American norm.

Taiwan, however, does not have a developed equity market, so start-ups look to friends and families for financing. The government has invested in some high tech ventures, and it may increase its venture capital activities.

The government and the ruling Kuomintang (KMT) Party also play a role in the operations of larger, established foreign firms. Linda Gail Arrigo ("Economic and Political Control of Women Workers in Multinational Electronics Factories in Taiwan," May, 1983) found, "... upper-level management in the U.S.-owned factories, those directly below the few American managers and over the native Taiwanese laborers, is predominantly Chinese military managers retired from liaison service with the United States Military Assistance Advisory Group. . . . A large foreign company must provide the salaries and offices for four to five 'security agents.' Virtually all of these retired military men and 'security officers' are substantive, not merely nominal members of the ruling party, the Kuomintang."

Arrigo also determined that the government

promotes company unions at foreign-owned plants but not at Taiwanese facilities. She concluded. "First, the exemplary labor regulations on the books do not allow excessive overtime work, do not permit women to work past 10:00 p.m., require paid sick leave and vacations, etc., 'except with the consent of the union.' Secondly, the unions - in-house unions whose main officers are the upper-echelon Chinese managers themselves - are extensions of the ruling party itself." Through the unions, the government can exercise direct control over the policies of the multinational corporations.

ASSEMBLY EQUIPMENT

The U.S. market for semiconductor assembly equipment will more than triple over the next few years, hitting \$214 million (in current dollars) in 1987, projects New York-based market research firm Frost & Sullivan. The assembly equipment-market stood at \$68.3 million last year, down from a high of \$95 million in 1980.

Equipment for wire bonding, the attachment of golden threads to die and chip packages, currently accounts for 41% of the market, but Frost & Sullivan projects that its share will rise to 50% by 1987. Final assembly, including packaging, will fall from its current share of 35% to 23% in 1987. Die bonding, attaching the die to the chip package, will edge to a 15% market share from its current 12%, while die separation, the cutting of wafers into dice, will retain its 12% of the market. (Frost & Sullivan press release No. 1085)

MITSUBISHI U.S.A.

Mitsubishi Electric, one of Japan's second-tier electronics companies, has announced plans to build a \$29 million semiconductor plant in the Raleigh-Durham area, in North Carolina. The plant will employ about 200 people when it opens in 1985. (**San Jose Mercury**, July 15, 1983)

WESTERN ELECTRIC

The deregulation of Western Electric, the manufacturing arm of the Bell System (American Telephone and Telegraph) will profoundly influence the structure of the merchant semiconductor business. Though one of the world's largest producers of chips, Western Electric has never been able to offer its goods on the open market. Experts disagree, however, over the giant firm's ability to compete.

In Western's favor lies its close links to Bell's research branch, the Bell Telephone Laboratories, which invented the transistor, the laser, and many other less known but significant high-tech products and technologies. Bell Labs' Computer Assisted Design (CAD) system will give the company an edge in the semicustom chip business, a niche where many smaller companies hope to prosper.

Western Electric is launching its commercial integrated circuit business by selling the next generation of computer memory chips, the 256K RAM (random access memory). Western beat all the competition, including the Japanese, in perfecting the 256K RAM. By focusing its early marketing efforts on the 256K RAM, which will be sold as a mass commodity to computer manufacturers, Western may overcome its weaknesses in marketing and service.

Reportedly, Western is also weak in production cost control. As a captive producer for the Bell System, it has focused on quality, not price. To succeed on the open market, it may have to re-organize its manufacturing system. A competitor told **Business Week**, "Western's plants in Allentown and Reading, Pa., are saddled with high-cost union labor and that 'they haven't had to scrape to get things down the cost curve.'"

MALAYSIAN UNION

The government of Malaysia, having accepted the right of workers in the electronics industry to unionize, earlier this year (see issue no. 30), has recognized the Electrical Industry Workers' Union at Transelectronics, a subsidiary of ITT in Penang's Bayan Lepas Free Trade Zone. Some 530 workers, mostly women, assemble printed circuit boards and transistor radios, as well as other consumer items. The union claims that 423 employees have joined the union, and the government awarded its sanction when an investigation confirmed that over half the workers did indeed support the labor group.

ITT is the first trade-zone plant organized by the union, but its acceptance may pave the way for successful union drives at plants employing 20,000 additional workers. Thus far, however, the government is unwilling to recognize unions at plants that only assemble semiconductors. An estimated 40,000 are employed in those facilities. (**Asian Wall Street Journal**, May 2, 1983)

DATAMATION STORY

Datamation, one of the computer industry's oldest magazines, ran an article in its May, 1983 issue titled "Our Newest High-Tech Export: Jobs." Highlighting the Atari run-away, writer Laton McCartney summarized the global division of labor in the industry. Much of the information is familiar to readers of this newsletter, but two items, cited here, were new to us.

"In El Salvador armed rebels took over a core memory assembly plant run by the Dataram Corp. and tried to unionize the operation at gunpoint."

"American Airlines recently closed down its data entry operations in Tulsa, Okla., and is in the process of hiring 200 Barbadians to perform this work. American will employ a satellite to link its data entry operations in Barbados with its data processing center in Tulsa."

CARIBBEAN POLICY

Congressional friends of organized labor are pushing a novel policy approach, attached to the legislative package promoted by President Reagan as the Caribbean Basin Initiative, which would limit special duty-free treatment to imports from those countries that don't meet human rights and economic human rights criteria. H.R. 2819, introduced by Richard Gephardt (D-Missouri) called for withholding special trade benefits from Caribbean countries that deny basic human rights, such as free speech and the freedom to travel, or economic human rights, such as the right to organize and bargain collectively and the right to a safe work environment. **Business Week** (July 11, 1983) predicted that the final Caribbean Basin legislation would contain those particular provisions.

DELCO

General Motors' electronics division, Delco, plans to bring back to the U.S. car radio production, the bulk of which is now done in Singapore or Mexico. Delco is establishing an automated assembly plant at its Kokomo, Indiana facility, where "thick film printing" will apply components, such as resistors, to printed circuit boards. The **New York Times** (reprinted in the **San Jose Mercury**, July 10, 1983) reports, "When full production is reach in 1988, about 1,200 blue-collar and white-collar jobs will be added to Delco's payroll, 1,600 fewer than would have been needed for the same level of production using older methods."

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