
GLOBAL ELECTRONICS INFORMATION NEWSLETTER

Issue No. 41

US ISSN 0739-0416

March, 1984

OFFSHORE OFFICE WORK

American Airlines now employs nearly 300 workers in its Barbados, West Indies data processing facility. Each morning American delivers a quarter ton of used ticket coupons to Caribbean Data Services, its Barbadian subsidiary. Caribbean women key information from the coupons into their computer terminals. That data is immediately processed and beamed, via satellite, back to American's central data processing operation in Tulsa, Oklahoma.

American will save up to \$4 million a year by doing its data entry offshore, largely by paying the English-speaking Barbadians from \$1.75 to \$3.00 an hour. American has paid attention to working conditions, supplying expensive "ergonomically" designed chairs for every worker, but its wages are low, even for Barbados.

CDS managing director Samuel Fuchs told free-lance writer David Beers, "We are at the forefront of testing just how efficient this [offshore office] concept can be. We could be pioneering a major trend." But it is much too soon to know whether other companies will find offshore data entry so profitable. After all, it costs American Airlines little to ship the hardcopy source material (ticket coupons, in this case) overseas. (*In These Times*, April 4,

1984; see also Barbados advertising section in *Business Week*, April 16, 1984)

THAI CHIPS

Semiconductor International (September, 1983) described the activities of the three major semiconductor firms manufacturing in Thailand. Synertek, a subsidiary of Honeywell, employs 500 workers. The Thai facility functions as a subcontractor for the firm's larger operation in Singapore. The Thai plant assembles chips into plastic packages only. Singapore handles ceramic and hermetic devices. The company is replacing its manual wire bonders with automatic models.

Data General assembles semiconductors in Thailand for use in its own computers. It also assembles cables, produces printed circuit boards, and manufactures system assemblies there.

Signetics, the Silicon Valley merchant firm owned by Dutch multinational Philips, is by far the largest chip firm in Thailand. When it closed its Manila (Philippines) plant, it boosted its Thai workforce by two to three hundred, to a total of 2,400. (It also added about 150 workers to its Seoul [South Korea] plant.)

Signetics (Thailand) does its own equipment repair, and it tests about 90% of the chips assembled there. The company is working to reduce its cycle time from 10 days to 7 days.

INDIAN SOFTWARE

Five more computer manufacturers have made plans to establish software exporting subsidiaries in India's Santa Cruz Electronics Export Processing Zone (SEEPZ), in Bombay. The five firms are Usha Rectifiers, Digital Innovations, Indian Computing, Ghadiali Ltd., and Kapoors Ltd.

This brings to 12 the number of software exporting outfits in the SEEPZ. Patni Computer Systems, Intime Computer Systems, and Blue Star Ltd have recently set up shop there, and Tata Burroughs, Tata Consultancy, Datamatics, and Systime Computer Systems are well established.

Exports of the last four totalled US\$1 million in the fiscal year ending March, 1983, and they are expected to rise over 50% by the end of fiscal 1984-1985. The new units are expected to generate \$9 million in exports within five years of start-up.

V.S. Gopalakrishnan, SEEPZ Development Commissioner, says that Indian software exports are becoming attractive for two major reasons. First, India has a large pool of technical talent. Second, it is easy for software firms to obtain space at the Zone, even without firm orders.

Manufacturing space in the Zone is hard to get, however. New operations must now wait as long as two years for new buildings to be built.

Some Indian companies are establishing joint ventures for software development and export. Blue Star has teamed up with Hewlett-Packard to provide software to H-P's Middle East and Far Eastern installations, and Thermax is working with Productive Information Management to program in Ada, the U.S. Department of Defense's new high-order standard computing language.

Gopalakrishnan says software represents a great potential for India, if only the country can develop more computer literacy. According to one projection, by 1990 worldwide micro-computer software business could total \$25

billion. He suggests, if India can tap just one percent of that market, "we can earn \$250 million per year in software exports alone."

CHINESE SOFTWARE

SINOAM, a firm headquartered in the northeastern San Francisco Bay Area community of Walnut Creek, is providing American companies with a direct connection to cheap foreign professional labor. SINOAM says it has contracted with three organizations in Beijing and Shanghai, in the People's Republic of China, and that it offers the programming services of over 250 computer science graduates. (*Silicon Valley Tech News*, February 20, 1984)

SUBCONTRACTING SHIFT

Dynetics, a large semiconductor assembly contractor in the Philippines, reported that equipment manufacturers are becoming much more important customers. Formerly, chip manufacturers accounted for 90% of Dynetics' work. Now that has fallen to 60%, with the remainder representing equipment firms, which develop their own chips internally and contract to "silicon foundries" for wafer fabrication. (*Semiconductor International*, August, 1983)

A.T.T. TO SPAIN

ATT, now operating in the international marketplace, is negotiating the installation of a semiconductor manufacturing plant in Spain. It would be a joint venture with minority participation by CTNE (Spain). Western Electric (ATT) will have majority stake and will invest US\$200 million. About 90% of the output will be exported. (*Agence Europe*, February 16, 1984, p. 17, published by Europe Informations Internationales)

HIGH-TECH PROS

The National Science Foundation (**Science Resource Studies HIGHLIGHTS**, February 17, 1984) reports that the reported shortage of Scientists and Engineers is down substantially from 1981 to 1983. Based on a survey of 351 firms, conducted in summer 1983, the NSF reported that the number of firms reporting shortages of computer scientists fell from over 50% in 1981 to less than 10% in 1983. The proportion of companies reporting shortages of electronic and electronic engineers fell from almost 60% in 1981 to less than 10% in 1983. By industry, the share of office equipment/computer companies reporting shortages of scientists and engineers dropped from more than 90% to almost 40%, while electrical machinery/communications equipment firms said shortages had dropped from about 50% to about 40%.

The NSF has also released new information on race and gender employment patterns in scientific and engineering occupations. Women now (1982 figures) account for 489,700 of the 3,588,000 scientists and engineers in the U.S. They are, as expected, well represented in the life sciences, psychology, and social science categories, but the largest number of women "scientists" are classified "computer specialists." 111,600 out of a total of 395,800 computer specialists in the U.S. are female. Only 75,000 of those are employed as computer specialists, however. Very few women are engineers. Only 71,900 out of 1,980,500 are women.

By race, there are 3,278,200 white scientists and engineers. Although blacks make up a much larger portion of the population, black scientists and engineers are outnumbered by Asians, 160,900 to 49,700. Native Americans account for 14,200. Hispanics are divided between white and black in the racial tables, but in a separate section, the NSF reports that there are 74,000 Hispanic scientists and engineers, 25% of whom are Mexican-American. (For

much more detailed data, see "Women and Minorities in Science and Engineering," NSF, January, 1984)

SILICON VALLEY "ALIENS"

The Immigration and Naturalization Service, known popularly as "La Migra," has unleashed a series of raids at Silicon Valley production facilities, deporting scores of workers. The INS just opened an office in San Jose, where it has 31 people on staff. Officials say they are conducting highly publicized raids to win industry's cooperation in their efforts to deny employment to immigrants without proper immigration papers, but employers reportedly are already helping. They have helped identify undocumented immigrants at some of the affected plants.

The INS appears to be focusing its activity on printed circuit board subcontractors, which subcontract with the better known computer, instruments, and communications equipment-makers in the Valley. Among the firms raided recently were CTS Printex, Multiplex, and General Technology. It is likely that so-called "illegal" immigrants are concentrated in such firms, since they represent the bottom of the pay and status scale in Silicon Valley's booming manufacturing plants.

The **San Jose Mercury News** (April 17, 1984) quotes Harold Ezell, INS Western Regional Commissioner, who charged "Probably 25 percent of the working population in this area is here illegally, particularly in the Silicon Valley area." That figure appears exaggerated, for racial minorities, including blacks, made up only 27 percent of the entire Valley high-tech workforce in 1980. (See also **People's World**, March 31, 1984.)

SPECIAL ISSUE

The **Multinational Monitor**, a four-year-old monthly magazine founded by Ralph Nader, has published a report on high technology. The special issue, produced jointly with the Institute for Policy Studies, addresses social, economic, and political questions such as, "Who controls high technology? Who really benefits from it? [and] What are the costs of those benefits and who pays those costs?" Individual copies may be ordered for US\$2.00 from the Multinational Monitor, 1346 Connecticut Ave., NW, room 411, Washington, DC, 20036.

NEWSLETTER TO EXPAND

PSC Director Lenny Siegel, who edits this newsletter, is working with **Byte** magazine's John Markoff on a book tentatively entitled, **Where the Chips May Fall: The Impact of High Technology**, for Harper & Row/Bessie Books. In researching the book, they have moved beyond issues of high-tech production, the focus of the **Global Electronics Information Newsletter**, to questions related to the application of chips, computers, and other high-technology products. When the book is finished this Spring or Summer, PSC will expand this newsletter (in size as well as scope) to cover those "application"-related issues.

SUBSCRIPTIONS

To continue to publish the **Global Electronics Information Newsletter**, PSC needs more paid subscriptions. If your copy is stamped, "Please Renew," that means our records show that you have not paid for current issues. Please do renew, by sending a check or money order to PSC. Our rates remain:

US\$5.00 in U.S.
US\$6.25 in Canada & Mexico
US\$10.00 overseas airmail

**Pacific
Studies
Center**

222B View Street, Mountain View
California 94041 USA
415/969-1545

INSTA  PRINT

Address Correction Requested

BULK RATE
NON-PROFIT ORGANIZATION
U. S. POSTAGE
PAID
PERMIT NO. 155
MOUNTAIN VIEW, CA.