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WHO'S DOWN ON THE VALLEY NOW?

The following column, by Global Electronics *editor Lenny Siegel, appeared, in shorter form, in the January 3, 1993, "Perspective" section of the* San Jose Mercury News.

A few years back, I was visited by two Italian labor leaders and their State Department translator. I explained to them why I felt, contrary to rumors they had heard, that Silicon Valley was likely to flourish as the world's foremost high-tech center for years to come. Startled, they replied, "But Mr. Siegel, we were told that you are a Leftist."

Indeed it is ironic. Social critics such as myself recognize Silicon Valley's economic strength, while the chief executives and other spokespersons for high-tech firms find every opportunity to bemoan the Valley's decline. To develop the best prescription for the Valley's future, it is important to first understand that the patient—in overall economic terms—is healthy.

Silicon Valley-based firms and the Silicon Valley economy are doing remarkably well right now, considering the national recession, Pentagon cutbacks, and the Bush Administration's unwillingness to address the problems of commercial high-tech industry. They Valley may never return to its fantastic growth rates of recent economic booms, but it is unlikely to become an industrial ghost town.

Not surprisingly, the dynamism of Silicon Valley is inextricably linked to the fundamental physics of the silicon chip. Every two or three years the fabricators of integrated circuits manage to quadruple the amount of digital information that can be stored or processed on a single chip. While that process is becoming increasingly expensive, it appears likely to continue for years to come.

Each new generation of chips has brought new processes, new products, and even new companies. The first microprocessors, developed in the early 1970's were used in simple pocket calculators and digital watches. With the next generation came home video games, followed by personal computers. With even newer chips came graphics-capable computers and later workstations. Other high-tech markets, from machine tools to telecommunications, evolved in the same fashion.

Silicon Valley, with its educated workforce, ample infrastructure, and network of support services for business, was well prepared to take advantage of this innovative whirlwind. Some of the best known names in high-tech, such as Apple Computer, Sun Microsystems, and Atari—now a shadow of its former self—were born here after the invention of the microprocessor. Of the 44 California companies in the *Fortune* 500, 17 are high-tech electronics and computer firms based in Silicon Valley. Nine of those 17 were established in the last twenty years.

In fact, as progressively greater portions of a computer's circuitry were embedded in chips, the computer industry gravitated here. Not only are strongest workstation producers based here, but even other players such as DEC and Fujitsu increased their presence in the Valley.

As software rose in importance over hardware, production employment—particularly in chip manufacture—leveled off, but the Valley kept growing. In fact, the mysterious employment growth in "business services" which has recently compensated for losses in "electronics manufacturing" merely reflects the transformation of high tech. The value-creating software industry, doing the same work as most of the local employees of so-called manufacturers such as Apple and Sun, has been lumped with real estate, law, and other service businesses by an antiquated system of labor statistics.

Thus, Silicon Valley remains the number one address in high-technology. It's the best place in the world to start up a high-tech company. Foreign firms, whether from Japan or Boston, can't compete unless they set up shop in Silicon Valley.

The highly publicized exodus of high-tech from Silicon Valley is largely a mirage (or in current terms, a figment of virtual reality). Mature locally based firms are expanding elsewhere, as they have done for years. But Silicon Valley firms have long led the way in the globalization of production. Ever since Fairchild Semiconductor set up its assembly plant in Hong Kong in the early 1960's, companies here have located routine production in the countries, states, and cities where costs were likely to be lowest.

To recognize the Valley's strength does not mean, of course, that it has no dark side. Its vitality is threatened by sky-high housing prices, congested roadways, environmental degradation, and

(continued on page 2)

severe economic shortfalls for education and other public services. Santa Clara County was visionary to establish the Strategic Vision process, which recently recommended policies for strengthening the future Valley's economy and quality of life. Despite dozens of meetings involving leaders from industry, government, academia, labor, and community organizations, Strategic Vision has been overshadowed by industry's more glitzy planning vehicle, Joint Venture Silicon Valley.

Joint Venture Silicon Valley, a pet project of some of the Valley's top chief executives, could develop momentum for public-private initiatives to overcome problems shared by all Valley residents. But the penchant that many corporate leaders have for deprecating the Valley's investment climate is cause for concern. Joint Venture, I fear, could fall into the tired old beggary for handouts and divisive demands for environmental leniency.

Silicon Valley's future does not lie in trying to match the low taxes, low pay, and supposedly lax regulatory climate of Austin, Albuquerque, Hong Kong, or Penang (Malaysia). Rather, it means developing a strategy that maximizes the Valley's historical strengths.

The most important ingredient in Silicon Valley's remarkable success has been brainpower. To maintain its position, it must strengthen its ability to generate, attract, and retain an incredible collection of high-tech professionals and, though less recognized, a new stratum of skilled software workers. Fortunately for the hundreds of thousands of other denizens of the Valley, that means improving the quality of life.

There are literally dozens of policies that government, business, and other parties can implement toward that end. The following three strategies embody some of the most important actions that can be taken.

1) Provide expanded housing opportunities with easy access to employment centers.

Silicon Valley is a victim of its own success. So many high-tech professionals came here over the past few decades that housing prices and rents, especially near employment centers in northern Santa Clara County, are among the highest in the nation. Many talented people are reluctant to move to Silicon Valley because of the costs; others are "cashing out," moving to Sacramento, Seattle, or Denver. Still others buy houses on the fringes of the Valley or beyond, jamming the freeways during commute hours.

Housing must be planned for employment centers and along transportation corridors. The cities of Mountain View and Sunnyvale should abandon the ridiculous notion that Moffett Field is integral to the local economy, and urge the federal government to turn the property over for housing development, instead of supporting NASA's takeover of the entire Naval Air Station. Housing should be developed, where appropriate, at other planned light rail stops, but the county should do a better job ensuring that increased local traffic does not threaten existing neighborhoods.

2) Devise ways to produce chips and electronics systems that minimize the use and release of hazardous materials.

After fifteen years of complaints by activists such as myself, the semiconductor industry finally admits that its workers are being hurt by on-the-job chemical exposure. The printed circuit board and metal finishing industries are dumping dangerous levels of copper and other metals into the sensitive southern end of the San Francisco Bay. Strong hazardous materials ordinances have stemmed the flow of toxic solvents into our precious groundwater supplies, but cleanup of the nation's greatest numerical concentration of Superfund sites remains stodgy.

Given the long-term costs—liability as well as cleanup—incurred by industry before the days of careful environmental regulation, it would be remarkably shortsighted to ease up on pollution standards. But there is a win-win solution: pollution prevention. Both the semiconductor industry and plating industries can benefit economically from the development and implementation of "green" processes for making electronic equipment. That is, they can protect the environment and public health by using and releasing less hazardous material.

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Industry needs help from government for research, technical assistance, and even loans, but within a few years the public sector should find its investment paid back, too.

3) Ensure that all segments of the population receive the basic education and familiarity with computers necessary to achieve mid-level employment in high-tech industry.

The Silicon Valley social structure embodies a brave new world of economic polarization. While there are an unusually large quantity of well-paid professionals, primarily white men, living in the Valley, high-tech production and local service industries employ a vast number of non-whites and women at little more than the minimum wage. The bottom sector of the workforce lives in the world that is culturally, financially, and even geographically distinct from the highly publicized technical Nirvana of the engineers, programmers, and managers. It's the state-of-the-art version of Apartheid.

While low-level workers enjoy few prospects for upward mobility, high-tech companies are finding it increasingly difficult to hire mid-level—that is, skilled, but not professional—white collar workers, such as software testers and customer support personnel.

To offer upward mobility to Silicon Valley's under-noticed underclass, and meet the needs of high-tech companies at the same time, schools serving that portion of the population—from preschool through community college—must be strengthened with better overall funding and targeted assistance for computer labs. I do not believe that computers will solve the crisis in our schools, but low-income students need frequent access, with competent assistance, to state-of-the-art computers. With the assistance of industry, it is not only possible to provide school-time computer labs in the schools, but those labs can become community resources, for parents and others, after hours.

Silicon Valley's problems are those of unplanned, rapid growth, not economic stagnation. We can mitigate those problems and build the basis for sustained, environmentally sustainable growth, but only if we keep the fears of industry's professional pessimists in their proper perspective.

Flat Panel Displays

On February 3, the Defense Advanced Research Projects Agency (DARPA) announced that it had begun negotiations with the U.S. Display Consortium, a partnership of ten U.S.-owned electronics firms. DARPA expects to grant the Consortium $20 million in its first year.

DARPA announced, "The consortium will focus on active matrix liquid displays but will also address the manufacturing needs of a variety of other flat panel technologies. The emphasis of the consortium will be on developing new manufacturing equipment, materials, and processes that will allow U. S. display manufacturers to compete more effectively in global markets while developing potential capabilities critically needed in many [Department of Defense] applications. Equipment, materials, and processes will be verified on existing pilot production lines and later incorporated into existing full-scale production facilities."

In response, Joint Venture Silicon Valley (see above) has submitted a "white paper" to DARPA, urging the agency to establish an $8 million flat-panel display research and development center in Silicon Valley.

Cheap, readable flat-panel displays are a critical component of portable computers. The current $3.5 billion international market, now dominated by Japanese-owned suppliers, is expected to jump to $7.5 billion by 1995. Eventually, they may supplant cathode ray tubes as display technologies in television sets as well as computers. But the technology, like the computers that use it, is extremely portable. It is not clear how a federal program or a local R & D center can target its products to benefit a single, country, area, or group of firms.

Meanwhile, the U.S. Court of International Trade has struck down a ruling of the International Trade Commission that slapped a 63% anti-dumping tariff on imports of active-matrix displays from Japan. U.S. computer companies opposed the tariff, and some had even begun shifting production abroad. *(San Jose Mercury News,* December 31, 1992 and February 12, 1993)

Versatronex Workers Win, Lose

The historic strike at printed-circuit assembler Versatronex (see *Global Electronics* No. 117) is over. The job action and the community support it received should serve as a warning to other Silicon Valley employers that there is a limit to how far they can push their workers. Hopefully, it also signalled American labor organizations that electronics workers can be organized; they are not all affluent, happy, anti-union engineers.

The workers actually won recognition, but the victory was Pyrrhic. The company went out of

(continued on page 4)

business. The workers ended their strike on December 2, after the National Labor Relations Board issued a complaint against the company for its firing of an outspoken worker, Joselito Muñoz. When the union filed for a representation election, Versatronex recognized the union, the United Electrical Workers. But it announced plans to shut down.

The workers negotiated small severance benefits, and they won a promise that Versatronex would rehire them and recognize the union if it reopens in the next three years. But the company closed it doors on January 29.

Union members issued a letter of thanks to their supporters in the community. The predominantly Hispanic workers wrote, "We will never forget all you have done for us. We are proud of our struggle, and we are proud to be part of the union movement."

Korean Immigrants Demand Pay

The militancy of Hispanic workers at Versatronex may reinforce the preference that many Silicon Valley employers have for Asian-American and Asian immigrants. Already Asian workers, whom are considered docile by many managers, constitute 47% of the semi-skilled electronics workforce, even though Asian make up only 17% of the Valley population.

But the former employees of USM, another assembly subcontractor, are demonstrating that Asians too can become militant. Admittedly, the USM scenario is extreme. When USM's Korean-American workers closed their plant, they owed their 150 Korean-born employees two months back pay.

The workers, some of whom were "burnt" twice by USM's owners, have organized protests at the Silicon Valley Bank, which has taken over the bankrupt firm's assets.

IBM Workers of the World Unite

Workers at IBM, the world's largest computer company, are still much better off than their counterparts at Versatronex and USM, but their condition too is declining. In November, IBM employees from thirteen countries held their sixth international meeting in Sindelfingen, Germany. In response to IBM's massive, unprecedented workforce reduction, participating workers' groups organized simultaneous protests in December.

In the U.S., New York-based IBM Workers United has renewed its call for work councils, committees established to influence company policy: "IBM in Europe has had Work Councils for years. In IBM, workers elect representatives to plant level councils where management must consult with employees on everything from work organization to health and safety policies. The councils are **not** unions and **can not** call strikes.

"A work council in every IBM business unit and location takes employee involvement and empowerment to a whole new level. It is democracy in the workplace, and it is long overdue in IBM as well as other companies. IBM workers must have input and decision-making powers all the way to the top. Will it solve all of IBM's problems? We don't know, but it is a start...." *(Resistor,* February 1993)

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