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window to storm the mass market when an early quality glitch delayed its introduction and Japanese consumer electronics giants jumped in with similar gadgets.

Today the pathways for inventors seeking startup funds are so congested that Wozniak's personal staff has had to develop an elaborate system for returning unsolicited business proposals. Nevertheless, Brentwood's Walecka maintains that the current financial darkness means a fiscal sunrise is on the horizon. "This is the perfect time to start a new company," he claims. "If you look back you see that the middle of a recession is the right time to start a company. Big companies cut back on R&D and then the entrepreneurs approach venture capitalists with their ideas. It is absolutely the right time to start a new company," Walecka enthuses.

D'Addio says he and Hahn plan to take Videonics public "when the time is right," and have resisted lucrative offers to license their technology to overseas firms, despite the fact that the company has yet to turn a profit. "We're in this for the long run," he says, alluding to the take-the-money-and-run ethic of many American entrepreneurs and inventors who, over the years, have sold or lost, to a variety of Asian companies, control of key components for everything from toasters to VCRs. Yet D'Addio says he does not expect Videonics' local operation to ever employ more than "a few hundred" people. Sixty-four people, including D'Addio's two sons and his father, now work at Videonics.

Even Videonics doesn't confine itself to Silicon Valley. PC boards are fabricated in Salt Lake City, then stuffed in a maquiladora plant in Mexicali. With chipmaking contracted to outside vendors, Videonics concentrates on research, development and marketing activities. Unlike G.E., which gave up its small appliance division after the Asian manufacturers it had hired started marketing their own competitive products, Videonics' founders are determined to maintain control over their manufacturing process by splitting it up among a number of suppliers.

The fate of companies like Videonics and Frox, Inc., another small, startup "smart TV" company in Sunnyvale, will determine whether Silicon Valley can recover its role as a site of global technological leadership. Like Videonics, Frox is aiming squarely at the point where computers and television intersect.

Funded in April 1988 by Macintosh developer Andy Herzfeld, along with Peter Costello and Andreas Bechtolsheim of Sun Microsystems and industrial design wunderkind Hartmut Esslinger, Frox recently announced the world's first truly intelligent TV. At \$7,000 each, the Frox machines digitize television images, double the number of lines of resolution and place a variety of sound and image enhancements at the disposal of feature-happy couch potatoes. The question now is whether Sil-



Go East: Jim Francis

"When Jim Francis visited JVC, the people said it was the first time anyone in the U.S. ever went to Japan and made a presentation in Japanese, with slides in Japanese."

icon Valley's technology leaders, many of them primarily defense contractors, are prepared to do battle in the enormous smart-TV markets of the future.

"It's not going to work that way," says Lenny Siegel, director of Mountain View's Pacific Studies Center. Siegel has worked for years to encourage local economic diversification, with the hope of avoiding the area's current predicament. "The problem with [people who work in] defense contracting is that they need to be reacculturated to compete in the commercial marketplace. People need some help making the transition," he says.

"They have the skills and the knowledge base, but they are used to taking too long and spending too much money. That's how you make money in the defense sector. But that's not how it works in the commercial sector."

The personal computer industry, which Siegel says "was founded by people who didn't want to work for the military," exemplifies the kind of company-building that is most likely to effectively transform the local economy.

The employment marketplace, meanwhile, is full of signs of deep trouble. Silicon Valley, accustomed to adding upwards of 10,000 jobs a year, has lost more than 13,000 jobs in the last 12 months. Nearly all of the major players in the local electronics industry have recently announced layoffs, including Apple, IBM, Hewlett Packard and Advanced Microdevices. Paradoxically, HP's stock suffered little when the company made its recent downsizing announcement. Instead, in a remarkable sign of the times, numerous Wall Street

analysts have been touting the stock's prospects of late. Things are so bad that taking losses gracefully is now seen by Wall Street as a machismo-like rite of corporate passage.

The local economic vacuum created by the shrinking high-tech sector is being partially ameliorated by investments from Japanese companies, like Nippon Steel, and by a number of domestic companies, such as disk-drive maker Quantum Corporation. Most technology companies see strong advantages in a Silicon Valley address, even though it takes financial muscle to afford the neighborhood.

Librex Computer Systems Inc., a new notebook computer company owned by the muscular Japanese steel giant, recently began manufacturing computers at its facility in Silicon Valley and this month inked an agreement with San Jose's Solectron Corporation to increase local manufacturing operations. Librex also recently won a government contract that should keep its business booming, but probably won't make it the most popular company around.

"If you get audited by the IRS, it's likely to be done with one of our computers," says Peter Brown, Librex's manager of public relations.

"There are significant advantages to having your production facility located alongside your marketing and research people," says Quantum Vice President of Operations Pierre Patkay. Quantum, which posted sales of \$208 million in 1989, saw its sales skyrocket to just below \$900 million in March of this year. However, Quantum officials admit that once a particular product is standardized and orders reach a certain volume, the manufacturing is offloaded to MKE, a Japanese subcontractor.

Patkay says this is a particularly good time for Quantum to be located in Silicon Valley. "One of the benefits of the other companies leaving is that they free up the kind of people we need," he says. There have been no layoffs at Quantum, according to a company spokeswoman.

With domestic high-tech companies pulling up stakes left and right—Applied Materials, Inc. CEO and Chairman James Morgan has even appeared in a full-page magazine ad touting the advantages of locating a business in Texas (though that company says it's firmly rooted in Silicon Valley)—one might wonder what draws the Japanese. Companies like Sony, Fujitsu, and Hitachi are among those making the largest investments in the local economy. In the midst of the recession, one Japanese company has even announced plans to open a major new local disk drive production facility.

"They are here to learn," says Librex's Brown of his Japanese employers. "PCs are not as popular in Japan as in the United States," Brown notes, "and this is the hottest computer market anywhere."

"We do have the highest concentration of electronics manufacturing jobs in the United States," con-