

WHERE DOES THE VALLEY GROW?

Now that Silicon Valley has pulled out of its recession, an old question reemerges: Where will the Valley expand? Valley companies, of course, will balance their local expansion with new plants and facilities, elsewhere in the U.S. as well as overseas. But can the Valley itself continue to expand? Or will it fall victim to its own success, with land costs, housing shortages, clogged transportation, and a deteriorating environment driving both companies and employees toward less congested pastures.

Over the past few years, Highway 237 between Lockheed's giant Sunnyvale complex and Milpitas resembled a twenty-first century ghost town. Acres and acres of concrete and glass, light manufacturing and office facilities that had been hurried into construction during the boom years of the early eighties, sat idle and empty.

Today high-tech companies are growing again. Growth, particularly for software development and corporate administration, is still strong in the historic heart of the Valley. In addition, manufacturers are following commuters around the southern edge of San Francisco Bay, toward Fremont. And commuters are extending themselves even further—to the heart of the agriculturally rich San Joaquin Valley, to obtain affordable homes.

Unless there is another major slump in electronics, there is no end in sight. But it is instructive to review where growth is **not** concentrated. The Coyote Valley, at the southern end of San Jose, was opened for high-tech investment five years ago, but it remains as rural as ever. And Oakland and East Palo Alto, two predominantly black areas in the natural path of Valley expansion, appear to have been left off the high-tech roadmap.

In-Fill

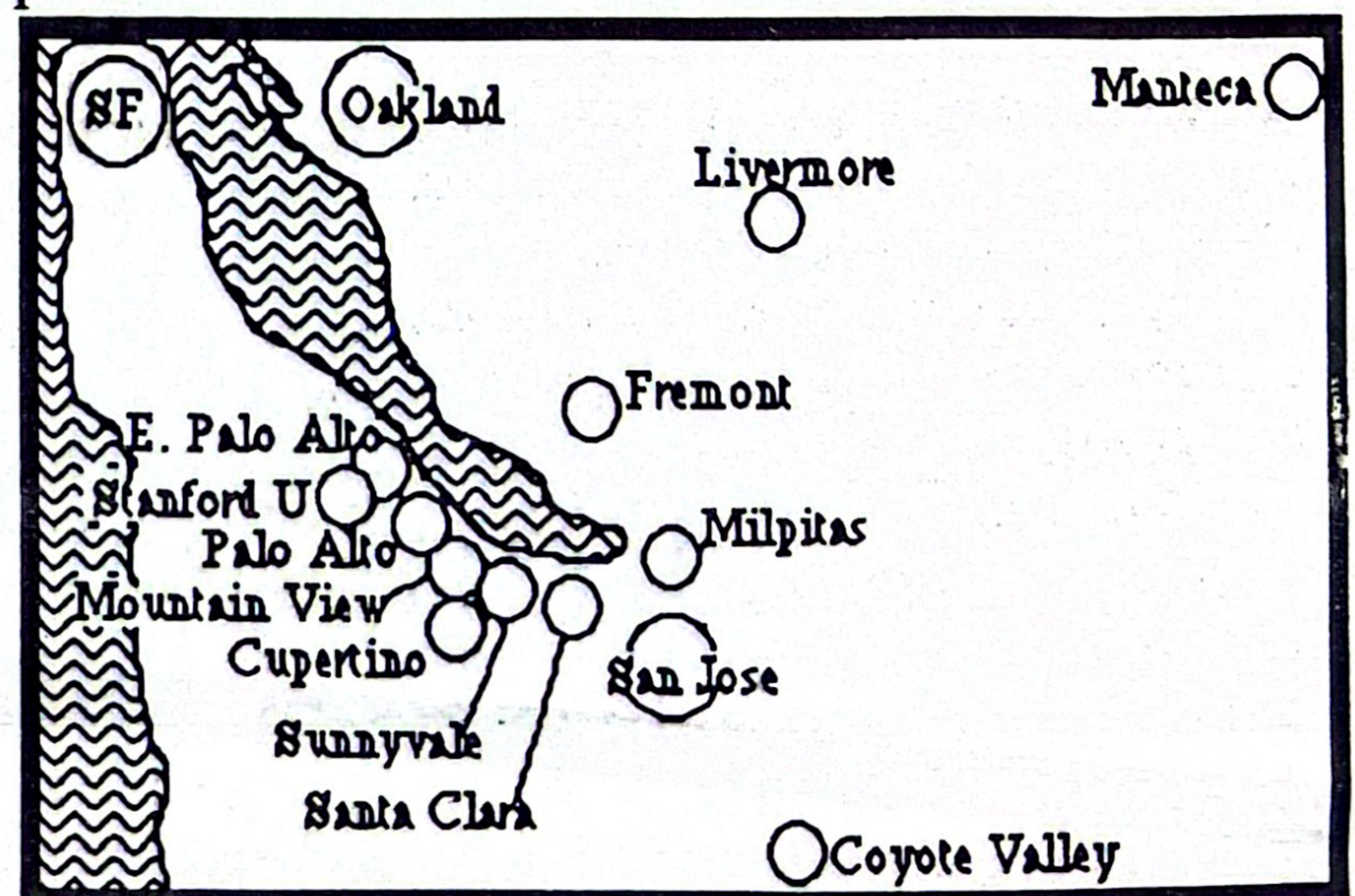
For several years, there has been a shortage of vacant industrial land in northern Santa Clara County. For example, Palo Alto has been "built out" for years. But that has not kept high-tech companies from building new offices in non-

manufacturing zones. For example, Digital Equipment (DEC) maintains two research facilities in downtown Palo Alto, just outside Stanford, and it plans to occupy another office development shortly in downtown Mountain View.

Most cities in northern Santa Clara County—including Palo Alto, Mountain View, and Sunnyvale—have enacted zoning laws limiting the intensity of light manufacturing development, but mid-rise office complexes are still being built. Just up the road from Digital's new digs, Ask Computer occupies a new seven-story headquarters.

As a greater percentage of the work of a typical computer or chip manufacturing firm goes into software, design, and administration, it becomes easier to set up shop in general office settings. Since managerial and technical professionals are still concentrated in northern Santa Clara County, office developments there have proven particularly attractive.

The high demand for high-tech space is apparent in Mountain View, where high-tech developments are taking over from other established uses. Over the past few years, Hewlett-Packard has replaced a shopping mall and, across town, a 100-year old seed company. Ask's new building sits on the former site of a mobile-home park.



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Golden Triangle

Building continues in the Golden Triangle, the expanse of land at the southern end of the Bay that is bounded by highways 237, 101, and 880 (17). Most is in the cities of Santa Clara, San Jose, and Milpitas. At the behest of the county's leading manufacturers, local governments formed a task force in 1985 to attempt to prevent overdevelopment and gridlock. Although the task force successfully stimulated the creation of residential outposts within the triangle, its other efforts have foundered.

The area was known for its empty buildings during the recession, but now they are rapidly filling. As new construction continues, particularly in pro-growth Santa Clara, traffic problems may worsen. Not only is the Triangle becoming a major center of employment in its own right, but it is a bottleneck for commuters who work in the core of Silicon Valley but live in the East Bay area.

Eastward Ho

While software houses find "old" Silicon Valley most attractive, new factories are popping up in Milpitas and Fremont, where land is much more plentiful and housing more affordable than in Palo Alto and its neighbors. Beyond the commute bottlenecks of the San Francisco Peninsula, firms in these communities draw workers from the entire East Bay.

Perhaps the most startling new trend, however, is the growth of new bedroom communities even further east. Whole new subdivisions have popped up near Manteca, Modesto, and Stockton, along the highways that lead from the Bay Area into the San Joaquin Valley. Many of the area's new residents work in the closest parts of the Bay Area, such as Oakland or Hayward, but a surprising number are making the 80-mile or more commute all the way to Silicon Valley.

In exchange for the hot climate and long commute, residents pay half the price (or less) of the going rate for comparable homes in Silicon Valley. Northern Santa Clara County's well regarded schools still act as a magnet attracting professional families, but the Board of Trustees chairman of the Mountain View Elementary School District resigned his position to move from Mountain View to Ceres. John MacDonald, employed by a Santa Clara testing equipment manufacturer, told the *San Jose Mercury News* (October 5, 1988) that he was leaving a two-bedroom duplex in Mountain View to buy a

three-bedroom house in the San Joaquin valley. That house would sell for \$250,000 in Silicon Valley, but it cost him only \$100,000 in Ceres.

Knowing the Way to San Jose

San Jose mayor Tom McEnery is working to reverse San Jose's long-standing position as the Valley's primary bedroom community, particularly for low paid production, clerical, and service workers. San Jose has always had to provide services for workers (and their families) who work in northern Santa Clara County. There they generate the corporate revenue that pays the sales and property taxes that keep Palo Alto, Mountain View, Sunnyvale, Santa Clara, and Cupertino—as well as their schools district—relatively flush.

As described above, north San Jose—the city's portion of the Golden Triangle—is a major growth area for electronics and computer companies. The city has siphoned revenues from the area to bolster downtown redevelopment, but it consequently has inadequate funds to deal with the impending transportation crisis in the industrial district. More important, north San Jose development has not helped balance growth within the community. It is merely an extension of northern Santa Clara County that happens, through historical coincidence, to be within San Jose's boundaries.

McEnery touts his city as "Downtown Silicon Valley." San Jose, the largest city in the area, is the natural home of regional governmental, cultural, and financial facilities. But little of San Jose's new downtown is directly related to high-tech.

McEnery's plans to promote high-tech indus-

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trial development in the Coyote Valley, in south San Jose, have also moved slowly. In 1983, over the opposition of environmentalists and nearby residents, he rushed approval of new zoning to allow single companies to set up large (averaging fifty acres) industrial campuses there. But neither Apple nor Tandem, the two firms who supposedly had immediate needs for large tracts at the time, have built there. IBM, which has long maintained a vast complex nearby in the Santa Teresa district, is large enough to operate a self-contained outpost on the Valley's southern frontier, but thus far no one else appears ready to take the plunge.

There There

As one drives south into Fremont on Interstate 880, a developer's billboard displays a proud welcome to Silicon Valley. That sign may move slightly farther north over the years, but not too far. Despite the fact that numerous high-tech workers—and many more unemployed—live in Oakland, high-tech employers have shown no interest in the East Bay's biggest city.

And it's not because, as Gertrude Stein said, "There is no there there." Rather, employers perceive Oakland as an alien land dominated by blacks. And while most Valley employers would not hesitate to hire a black engineer or lawyer, they cringe at the thought of hordes of black production workers. Asian and Hispanic workers, they believe, are more reliable. Employers may be scared by the city's reputation for crime and drug abuse, but if race were not involved they probably would be exploring ways to improve conditions, instead of ignoring Oakland altogether.

And it's not because Oakland is too far away. Silicon Valley's own ghetto, East Palo Alto, lies a few miles from the Stanford Industrial Park, just up the freeway from Lockheed, and at the western edge of the Dumbarton Bridge—a major transbay commute route. Yet East Palo Alto, which only recently was able to incorporate as a city, has virtually no high-tech business.

Silicon Valley will continue to grow. And host communities now have both the will and the ability to minimize the environmental risks of high-tech production. In controlling the problems of overdevelopment in the core of Silicon Valley and in the Golden Triangle, it makes sense to point companies in the direction of cities like East Palo Alto and Oakland that suffer from too little economic development. If specific problems in those communities discourage investment, then it is

in the interest of the entire region to solve those problems.

HDTV

A new consumer gadget is on the horizon, the high-definition television (HDTV), also known as Advanced TV. The new TV's will contain twice as many lines as existing TV's, they will carry four times as much information, and they will be wider (in relation to their height). Consequently, they will have crisper pictures and make possible larger screens. Wide-screen movies will no longer be cut down to size.

Fortune (October 24, 1988) caught the enthusiasm of HDTV's promoters when it reported, "HDTV will open the living room to pageantry, spectacle, and wide-open spaces—anything, in fact, that demands breadth, breathes color, or sings with detail." In interaction with computers—or perhaps with computing power built into the television itself, HDTV may also open up a new generation of games and computer graphics.

"Industry experts testified [before Congress] that HDTV components and related products would generate \$50 billion to \$250 billion in revenues by 2008," reports *Business Week* (September 19, 1988). But the impact could be even greater. Pat Hill Hubbard of the American Electronics Association (AEA) told *Business Week*, "This is not just replacing one TV with another. This is fundamental technology that will have an impact on all key electronics and communications industries."

Liberal Congressmen like Edward Markey (D-Massachusetts) have jumped to the support of the AEA, attempting to define policies to strengthen American electronics companies in their economic struggle with Japan, Inc., as well as the unified European entry in the HDTV sweepstakes. Markey chaired the September hearings that considered HDTV policy.

Mel Levine (D-California) and his Rebuild America lobby see HDTV as a test of their National Industry-Led Strategy for American industrial revitalization. Levine and his allies oppose national economic planning, but they urge strategic alliances among U.S. companies and between the federal government and industry to prevent a loss of U.S. leadership in high-tech industry.

The AEA has established an HDTV task force led by Richard Elkus of Prometrix, a fast-growing Silicon Valley producer of semiconductor manu-
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facturing equipment. Elkus earlier ran the VCR effort at Ampex, the videotape pioneer that never made it in the consumer VCR business. The task force wants the Federal Government to help fund an HDTV consortium similar to Sematech, plus the usual wishlist of subsidies and relaxed oversight sought by electronics executives.

The task force and its Congressional allies are also seeking help from the Federal Communications Commission, which is in the process of establishing standards for the broadcast of HDTV signals. Already the FCC has ruled out the Japanese standard, MUSE, which is a satellite-based system using a bandwidth of 8.1 Megahertz, compared to the 6.0 MHz currently allocated to American terrestrial broadcasters.

Those fearing that Japanese manufacturers would get a head start in the HDTV race sought such a ruling, but the FCC appears to have acted on other grounds. As it ruled when color TV first supplemented black-and-white broadcasting, it decided that the new system must be fully compatible with existing television receivers.

Next the FCC must rule which particular standard to implement. This decision could bring substantial royalties to a company that wins acceptance of its proprietary technology, but it is unlikely that it will determine who builds either the broadcasting or receiving equipment, or where production facilities will be located.

In fact, it is not clear that anything that the FCC, Congress, or the AEA does will influence the international structure of the HDTV industry. The U.S. government does have the power to prop up U.S.-based companies. However, the history of the consumer electronics industry in the U.S. makes it likely that U.S.-based companies would buy components and carry out assembly overseas, even with taxpayer-subsidized domestic R & D. It's quite possible that their Japanese and European competitors, who already produce TV's and chips in the U.S., would carry out more U.S. production than the U.S. firms.

Once again, the American-owned electronics industry is using the threat of foreign imports to

curry favor in Washington. In this case, the threat of imports is real. In fact, no matter what the U.S. government does to help U.S.-based firms, it is likely that most consumer HDTV equipment will be imported.

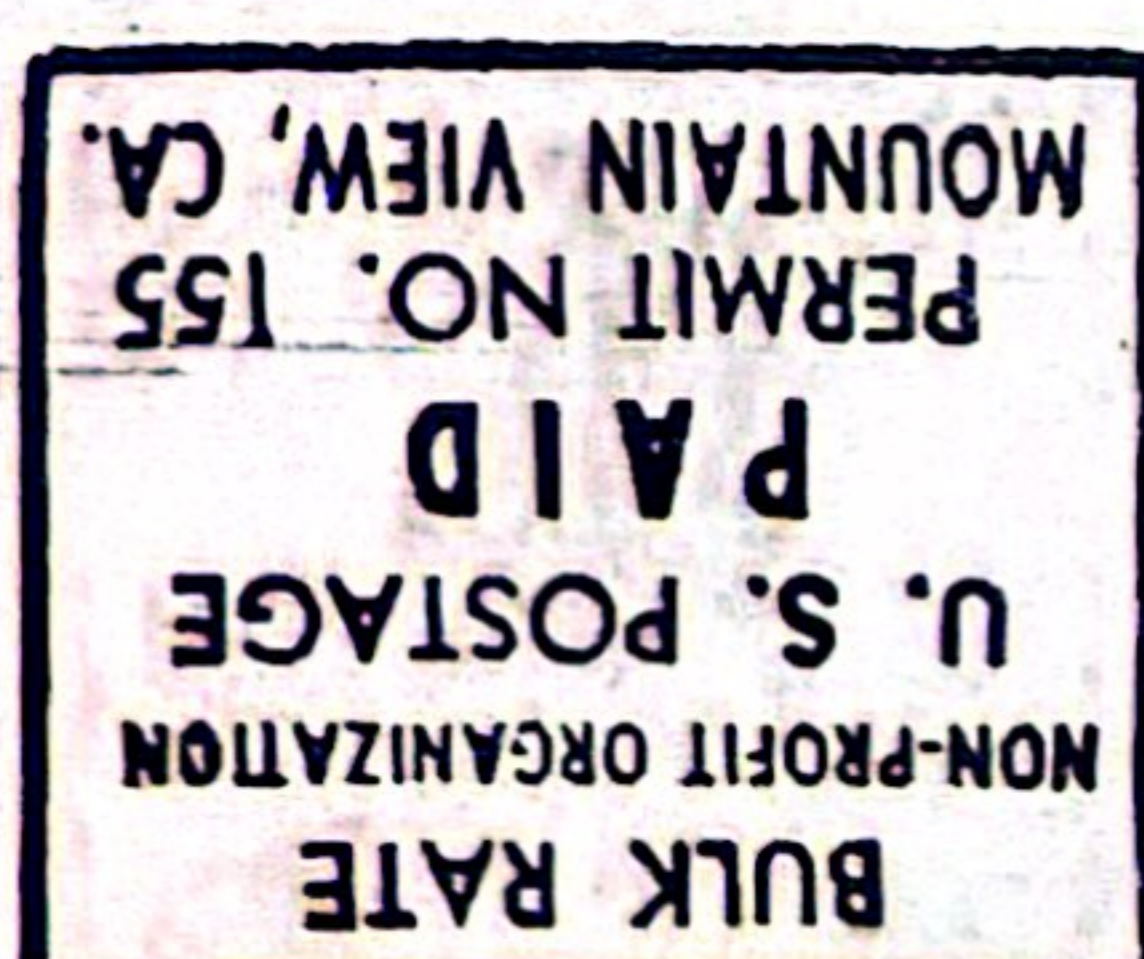
But the domino theory of the AEA and the Atari Democrats is as accurate as the Southeast Asian original. There is no evidence that HDTV is the technology driver that the U.S. HDTV lobby claims. Computer companies such as Next are advancing graphics display technology independent of the new television technology, and there is definitely no reason to expect computer screen technology to stand still over the life of HDTV—which as a broadcast standard must remain at one level.

Even if U.S. companies are shut out of the HDTV production game, the U.S. computer industry will still lead the world and the American-owned chipmaking industry will remain competitive with its Japanese counterparts. If Japanese companies could corner the world market for memory chips while IBM and other U.S. firms walked away with global computer business, then U.S. component makers can survive in good health despite foreign dominance of HDTV.

Finally, the potential HDTV market is being exaggerated by those, such as Congressman Levine, who want to make the technology a symbol of U.S. industrial prowess. Some American consumers may rush to buy the latest piece of electronic wizardry, but HDTV only offers a marginal advantage over existing color television reception. (This is in contrast to VCR consumption, where consumers rushed to acquire equipment with unique new capabilities.)

Most people probably won't even consider an HDTV set until their old color tubes go on the blink. Faced with a choice between the old technology and new, they'll go for the new one only if it's not too much more costly. In that case, however, the HDTV market will not do much more than supplant existing television business. And most of that business is already in the hands of foreign firms.

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