**Definition:** Silicon Valley from *The Hutchinson Unabridged Encyclopedia with Atlas and Weather Guide*

Nickname given to a region of southern California, USA, approximately 32 km/20 mi long, between Palo Alto and San Jose. It is the site of many high-technology electronic firms, whose prosperity is based on the silicon chip. Silicon Valley faces increasing competition from computer companies in Asia.

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Revolutionaries of Silicon Valley

Silicon Valley

**Summary Article:** Silicon Valley

*From Encyclopedia of American Urban History*

Silicon Valley is the nickname for California's Santa Clara Valley, located about an hour's drive south of San Francisco and possessed of an unparalleled concentration of high-tech talent and enterprise. Here many pioneering firms—Hewlett-Packard, Intel, Apple Computer, Oracle, Cisco Systems, Sun Microsystems—have their headquarters. The local economy of the region has taken a hit in the early 21st century, owing to the collapse of the dot-com boom in the late 20th century. But the downturn should not obscure the sheer exuberance of the technological and entrepreneurial energy unleashed in Silicon Valley in the postwar era, inventiveness that has focused not only on the semiconductors that gave the Santa Clara Valley its nickname but also on personal computers, software, and the Internet.

That said, it must be pointed out that the rewards of the vast engine of prosperity have been unequally distributed. Indeed, the inequality has been increasing in an era that has seen the weakening of regulatory mechanisms and the deleterious effects of globalization on vulnerable workers, at home as well as abroad.

During the first half of the 20th century, Silicon Valley was one of the world's premier fruit growing and processing regions, with dozens of canneries and tens of thousands of acres of fruit orchards in its midst. San Jose, the county seat of Santa Clara County, was a midsize city whose business interests were almost entirely tied up with fruit.

But in addition to the cities and towns, including not only San Jose but also Santa Clara, Sunnyvale, Mountain View, and Palo Alto, and the multitudes of orchards and canneries, the valley benefited from being home to Stanford University. The university has proven to be a magnet for scientific and technical talent since its founding in the late 19th century. Moreover, the entire Bay Area enjoyed a precocious development of technical capacity owing to the demands for expertise brought about by the Gold Rush.

A key moment took place in the years just before the outbreak of World War I, when Lee DeForest invented the vacuum tube in his Palo Alto laboratory. During the war, the firm DeForest had been working for, Federal Telegraph, created the first effective worldwide radio communication system for the U.S. Navy. In the interwar years, important Bay Area developments included Philo Farnsworth's work...
on the television tube in San Francisco and in 1938 in Palo Alto the founding of Hewlett-Packard by two Stanford graduates.

The Great Depression hit the fruit-reliant valley hard, and a number of local leaders were eager for economic diversification that would take the region away from the nearly exclusive dependence on fruit growing and processing. One of the most influential of these leaders was Stanford engineering professor Frederick Terman. Besides being cognizant of the impact of the Depression, he wanted his students to be able to stay in the area. That goal would require that electronics firms be founded in the Stanford vicinity. William Hewlett and David Packard were two of Terman’s students, and he gave them many kinds of support, support that was also extended to other budding entrepreneurs. Terman’s help came in conjunction with various types of collaboration that firms would enjoy with the university itself.

The pace of change picked up after World War II. In 1948 Stanford graduate Russell Varian and his brother Sigurd founded Varian Associates, the high-tech firm that would become the first occupant of Stanford Industrial Park in 1951. By this time IBM had already established a card-manufacturing factory in San Jose. Lockheed Aircraft, for years the valley’s biggest employer, with a payroll of more than 25,000, located its Missile and Space Division in Sunnyvale in the mid-1950s. In the mid-1950s, too, came William Shockley and the commercial development of the transistor in the valley, the transistor being a tiny switch that controls the flow of electrons more effectively than a tube. Shockley returned to his hometown of Palo Alto from Bell Laboratories to found his own company, but he did not retain his position in the nascent industry for long. Eight of his top people soon left to start Fairchild, whose spin-offs would create Silicon Valley. The nickname, conferred by journalist Don Hoefler in 1971, stems from the fact that the transistor has typically been produced from silicon, which is a semiconductor of electricity.

The most consequential of the Fairchild spin-offs was Intel, founded in 1968. In 1971 Intel employees developed a rudimentary microprocessor, a four-chip set that included the capacity for memory. The microprocessor was fundamental to the creation of the personal computer, and thus, it was also fundamental to converting the valley’s high-tech industry from a reliance on the military market to consumer electronics. A few years later, in 1977, Steven Jobs and Steve Wozniak founded Apple Computers, and within 5 years the firm had ascended to the Fortune 500—the fastest such ascent to that date in American business history. At this juncture, the legendary Silicon Valley of garage start-ups—both Hewlett-Packard and Apple—and immense fortunes was up and running. Remarkably, between 1959 and 1976, 45 semiconductor firms were established in the United States, of which 40 were in the Santa Clara Valley.

In the ensuing decades there have been downs as well as ups, even before the dot-com bust. In the 1980s, for example, strong competition from Japan forced Silicon Valley semiconductor firms to seek help from the federal government in the form of new trade policies and subsidies for an industry consortium by the name of Sematech. The competition also motivated the industry to be ever more vigilant in keeping unions out of the workforce. But to date, Silicon Valley high tech has always been able to recover, owing both to the concentration of talent and to the extraordinary amount of venture capital that has been amassed and deployed.

By happenstance, Silicon Valley’s burst of high-tech growth followed closely in the wake of the passage of the Immigration Act of 1965. Economic development plus the pleasant climate provided strong attractions for new immigrants, both from Asia and from Mexico, and they came by the tens of

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thousands. To give some idea of the impact on the region, San Jose’s population went from being 7.6 percent foreign-born in 1970 to being 36.8 percent foreign-born in 2000. Some of the new immigrants have arrived with education and have formed an important part of the skilled workforce of Silicon Valley. Countless others have been among the thousands of nonunion production workers, a workforce disproportionately composed of immigrant women. Some of these workers do not even make the minimum wage, while in 1999, John Chambers of Cisco Systems made $121 million in salary and stock options.

Between 1950 and 2000 San Jose grew tenfold in area—owing to a plethora of annexations—and it grew in population from around 95,000 to nearly 1 million. Growth occurred, too, in other municipalities, if not on so dramatic a scale. Each of the cities in Silicon Valley has experienced strains from the vast growth in jobs unmatched by an equal growth in housing stock. In consequence, there has been soaring inflation in the cost of homes throughout Silicon Valley. And there has been environmental degradation, too, caused by the development. But there have been positive effects as well, most notably in the rebirth of downtowns in several cities whose downtowns had decayed owing to competition from suburban malls.

As of 2004 there were hundreds, perhaps thousands, of tech firms in the county, located in the industrial parks that were more or less invented there when Stanford Industrial Park came into being in 1951. Where once fruit trees blossomed, now high-tech firms conduct their business.

Further Readings and References


Matthews, Glenna

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