Silicon Valley Shaped by Technology and Traffic

Thor Swift for The New York Times

Giriraj Vengurlekar, an engineer who lives in Sunnyvale, says the cricket pitch can be something of an informal job market.

By [STEVE LOHR](#)
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ALVISO, Calif. — Palo Alto Networks is a high-tech start-up with ample financing and ambitious plans. But despite its name, the company has no offices in Palo Alto, Silicon Valley's unofficial capital.

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Bay Area's Niche Neighborhoods

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Nir Zuk of Palo Alto Networks, with Dave Stevens, right, and Jana Kameda, said, "You would never locate a networking company in Palo Alto." So his start-up is in Alviso, Calif., to the south.

Instead, it is based about a dozen miles farther south, on the outskirts of San Jose, in Alviso. The company is developing technology to protect computer networks from hackers and misuse, so it chose to be where engineers with networking expertise are clustered: around big companies in the field like Cisco and Juniper Networks.

Nir Zuk, its founder and chief technology officer, notes that Palo Alto is synonymous with high-tech innovation, and he was living there when he came up with the name.

"But in Silicon Valley, you locate a company where the engineers are," he said. "You would never locate a networking company in Palo Alto."

Silicon Valley, the wellspring of the digital technologies fueling globalization, is itself a collection of remarkably local clusters based on industry niches, skills, school ties, traffic patterns, ethnic groups and even weekend sports teams.

"Here, we have microclimates for wines and microclimates for companies," said John F. Shoch, a longtime venture capitalist.

Silicon Valley, home of Stanford and other universities, has long been the model of success for a modern regional economy, and policy makers worldwide have tried to emulate it by nurturing high-tech companies around universities. There have been a few winners, like the semiconductor manufacturing hub in and around Hsinchu Science Park in Taiwan.

Yet a look at the microclusters within Silicon Valley demonstrates the business relationships, the social connections and the seamless communication that animate the region's economy. It also suggests the human nuance behind the Valley's success and shows why that success is not easy to copy, export or outsource.

"These microclusters turn out to be a very efficient way to innovate, to see what works and what fails, and do it extremely rapidly," said AnnaLee Saxenian, an expert in regional economies and a professor at the University of California, Berkeley.

New companies, and emerging industry clusters, seek to build on and tap the skills of older clusters. While there are plenty of exceptions, it is generally true that hardware clusters — semiconductors, disk drives and network equipment, for example — are in the South Valley, around San Jose and Santa Clara. The actual manufacturing of hardware, of course, moved to cheaper places years ago. What remains in the Valley is product design and engineering.

Moving farther north in the Valley typically means moving farther away from the guts of the machine and climbing up the tiers of computing — from chips to layers of business and consumer software and then into San Francisco, home to people with online advertising and digital design skills.

For start-ups, the location decision can be critical, particularly because of the area's notorious traffic jams. Lately the calculations about traffic, talent and real estate have become trickier because the Valley's economy is surging again, driving up rents and salaries and clogging roads.

The boom is fueled by the accelerating march of Internet technology into advertising, media and entertainment, and even into company data centers and the traditional software industry. Companies like [Google](#) and [Facebook](#) are the best known, but a spate of start-ups are in their wake, pursuing both business and consumer markets.

Yaniv Bensadon, the founder of FixYa, made a major location decision a few months ago. He started his company — a Web site for technical support and repair suggestions for consumer products, based on users' experiences — two years ago in Israel. But he moved to the Valley in August to be in the thick of things.

"For a consumer Internet company, this is where everything happens," he said. "It's true that things can be done anywhere on the Internet, but at the end of the day it's still a people business."

Many recent start-ups are hybrid companies. They combine computing with other fields, so they must tap a variety of skills.

Adchemy is a start-up that is still developing its technology and has not yet announced a product; in Valleyspeak, it is in stealth mode.

Adchemy's goal is to improve the efficiency of online advertising by using predictive algorithms and other scientific techniques. It already has a team of 50 people, mainly computer scientists and software engineers. They typically live in the Valley, mostly from Palo Alto south. But the company also needs people with advertising and marketing expertise, who are often young and single and prefer to live in San Francisco.

So Adchemy is in Redwood City — just north of Palo Alto, but a 30-minute drive from San Francisco. The choice is important, since the company plans to double or triple its payroll over the next year. "Recruiting is crucial for us," said Murthy Nukala, chief executive of Adchemy. "There is a real war for talent in this field."

Big industry-leading companies tend to become the center of gravity in each cluster: in semiconductors in Santa Clara, it is Intel; in networking in San Jose, Cisco; in database software in Redwood Shores, the giant is Oracle; and of course, in Internet services in Mountain View, it is Google.

Then there are the clusters that are based more on personal connections or affiliations than on geography. Stanford, just outside Palo Alto, is perhaps the strongest cluster-generator in the Valley.

Stanford students and staff have been behind countless companies in the Valley, from established ones like Hewlett-Packard, Cisco and Sun Microsystems to more recent success stories like Google and VMware. And for decades, Stanford has been a source of ideas and talent for the Valley's venture capitalists, bunched around the Palo Alto thoroughfare Sand Hill Road, the Wall Street of venture capital (and another Valley cluster).

Navin Chaddha, a managing director of the venture capital company Mayfield Fund, personifies the Stanford network of students, entrepreneurs and venture capitalists. As a Ph.D. student, he developed video-streaming technology that enabled Stanford to put its closed-circuit television programs on the Web.

Alumni investors noticed the potential, and Mr. Chaddha and a professor, Anoop Gupta, formed a company, VXtreme, which Microsoft bought in 1997. Its technology became part of Windows. "If you are using Windows Media Player, you are using our creation," Mr. Chaddha said.

Mr. Chaddha also represents another social cluster in the Valley, the ethnic Indian community. When he and Mr. Gupta needed advice, he said, "we went back to our roots," tapping leaders of the Indus Entrepreneurs, a powerful ethnic Indian networking group. Today, Mr. Chaddha is a senior member of the organization.

New companies with deep ethnic links — mainly Indian and Chinese — are sprouting up in the Valley. Often, ethnic background is but one layer of social relationship. SnapTell, a start-up that seeks to marry image-recognition technology, cellphones and marketing, was founded last year by G. D. Ramkumar and Gautam Bhargava, Indian computer scientists and Valley veterans. The company has 10 employees, six of whom have Ph.D.'s and three of whom are from Stanford.

The shared backgrounds, interests and schools make for frictionless communication that fosters rapid innovation.

Even weekend sports, it seems, become the basis for informal business clusters in the Valley. Start-up ideas or job opportunities often surface on the sidelines of a weekend soccer game or, increasingly, cricket match. Giriraj Vengurlekar, an engineer who lives in Sunnyvale, plays in

one of the Valley's cricket leagues, which now has 40 teams. His team, the Centurions, includes employees of Sun Microsystems, eBay, Cisco, Yahoo and other technology companies.

Last year, Mr. Vengurlekar joined Serus, a start-up that makes software for managing offshore manufacturing operations. The cricket pitch, he finds, is a good place to scout recruits or learn of job openings. "People don't play cricket to get jobs, but it definitely happens," he said. "Cricket definitely spills over into business."

There is a certain visual identity to the clusters, and a hint of cultural tension among them. The clearest schism, perhaps, separates Valley dwellers from San Francisco residents.

The hard core in the Valley jokes that San Francisco, with its Internet advertising and design cluster, has a "high P.I.B. coefficient," for People in Black. The city's companies also have more women than those in the Valley. San Franciscans regard Valley engineers as denizens of a style-free suburban zone for whom being well-dressed means wearing jeans and a T-shirt with a company logo.

In recent years, more companies have successfully tapped the pool of people, including engineers, who shun the Valley: Craigslist, Linden Lab, Slide and Twitter. Salesforce.com, a thriving company that sells software as a service over the Internet to business customers, was a pioneer when it chose San Francisco as its base at its start in 1999.

San Francisco, said Marc Benioff, the founder of Salesforce and a former Oracle executive, has been "an incredible recruiting tool and a differentiator when we are competing for talent with our suburban rivals."

The Valley residents see themselves as true entrepreneurs, entirely focused and dedicated. Marc Andreessen, 36, the co-founder of three companies in the Valley (Netscape, Opsware and Ning), concedes that San Francisco is generating more start-ups these days.

"But in general, the nerds with minimal social lives like me are well down in the Valley, and the cool kids with the trendy glasses and Prada shoes who like to go to parties are in San Francisco," Mr. Andreessen said in an e-mail message. "You can guess who has the leg up in building companies."