

[Don't Try This at Home](#)

You can't build a new Silicon Valley just anywhere.
BY MARGARET O'MARA | [SEPT. / OCT. 2010](#)

Six years ago, I wrote a book about the origins of Silicon Valley. Ever since, international investors, foreign officials, and urban planners from multiple continents have been asking me for advice on how to re-create the magic at home. I've met with officials from Bangalore, Barcelona, Chennai, Dublin, Fukuoka, Helsinki, Shenzhen, Stockholm, and many American cities as well. They all want to know the same thing: How did the Valley do it? And how can we duplicate its success?

Unfortunately, there are a lot of wrong ways to go about building the next Silicon Valley. High-profile visitors like Russian President Dmitry Medvedev frequently make the rounds of the glass-clad, high-tech headquarters of Google, Apple, and others in suburban Santa Clara Valley, the region south of San Francisco that put the "Valley" in Silicon Valley. They take in the sprawling Northern California aesthetic, exclusive subdivisions, and well-manicured lawns; talk to young engineers working in research parks; and convene earnest round tables with the big brains at Stanford University. They examine the latest iPhones and open Twitter accounts, to great public fanfare. They announce, "OK, we're going to go back and make one of those." If only it were that easy.

Since the 1960s, world leaders have made similar pilgrimages -- with similarly unremarkable results. In 1960, French President Charles de Gaulle toured the research parks emerging amid the farms and orchards south of San Francisco. Within a decade, the French government had established its own would-be high-tech city, Sophia Antipolis, along the Côte d'Azur. Multinationals set up branches there and Paris poured in francs, but the experiment was for years micromanaged from the top; innovation wasn't allowed to bubble from within. It is today a prosperous international business center, but hardly a global capital of innovation. Other delegations came to tour the Valley in the 1970s and 1980s, among them representatives from Japan, South Korea, and Scotland (which envisioned a high-tech hub outside Glasgow). Yet the original Silicon Valley remains secure in its place atop the high-tech food chain.

Not long ago, I toured University Town, a graduate campus that opened in 2003 on the outskirts of the southern Chinese city of Shenzhen. Local leaders there are pinning their hopes on the new offshoot of the prestigious Tsinghua and Peking universities -- the campus draws top-tier engineering graduate students to the area -- to transform the regional economy and drive high-tech entrepreneurship in a part of China best known as a low-cost manufacturing hub.

The campus is monumental, with lots of open space (faculty and students drive to class, rather than ride bikes), an extraordinary library, and plenty of new, high-tech research labs. Only a decade ago, the place was exurban rice paddies and lychee orchards. Today it still has a middle-of-nowhere feel. The engineers there are China's best and brightest, and they work incredibly hard. But when I asked whether they had any intention of sticking around after graduation to build companies and lives, they told me: No way!

It turns out that sparkling facilities alone aren't enough to create a high-tech ecosystem. The essential error is in thinking that Silicon Valley can be packaged into "innovation in a box" that you can simply build overnight, unconnected to its surroundings, to the culture, to a moment in history. Too often, aspiring governments overlook the perfect storm of forces that gave rise to Silicon Valley and continue to drive its economy. Here, then, are some words of advice for the next set of global urban planners who come calling:

1. Give a lot of money to brilliant people -- and stay out of their way.

In the United States, the government funded innovative activity. Then, by and large, it stepped aside. Silicon Valley is the product of more than 60 years of massive investment of public and private capital. The U.S. government was the Valley's first venture capitalist, seeding innovation through research grants and defense contracts during the first two decades of the Cold War. After the 1957 launch of the Sputnik satellite fueled panic in Washington about Soviet scientific prowess, government investment kicked into

even higher gear. Much of this money flowed to research universities, and Northern California was home to two of the best in the nation -- Stanford and the University of California, Berkeley. "With all their irritating faults," President Dwight Eisenhower's science advisors wrote resignedly in their 1960 annual report, "universities are essential agencies of our national hopes, and they must be treated accordingly."

Washington placed bets and sent checks, but refrained from micromanaging the research. Some early successes included Hewlett-Packard and Varian Associates, companies that counted the federal government among their most important customers. In 1971, with a nod to the fast-growing advanced electronics industry in the suburbs south of San Francisco, journalist Don Hoefler coined the term "Silicon Valley." The name stuck.

By that time, government contracts had dwindled, but new commercial opportunities opened up. And both old money and new came forward with start-up capital for Silicon Valley's high-tech enterprises. In a pattern that continues today, entrepreneurs who got rich in one wave of Silicon Valley innovation turned around and invested in the next wave. The venture-capital model was tailor-made for the Bay Area, which has been unusually risk-tolerant since the days of the California Gold Rush, with a community of investors willing to make bets on untested entrepreneurs, and to continue making such bets again and again. Few places, even in the United States, have the same patience for iconoclasts, outsiders, and entrepreneurs barely out of their teens. (Silicon Valley's major U.S. high-tech-corridor rival, Boston's more staid Route 128, attracted established corporations, but did not create a dynamic network of small start-ups.)

The risk tolerance and meritocratic ethos of Silicon Valley financiers provided extraordinary opportunities, especially for foreigners. Government action played a role here too, with post-1965 immigration liberalization and support for foreign students drawing top graduates from countries such as China and India. According to studies by Berkeley's AnnaLee Saxenian, more than half of today's Silicon Valley companies were founded by foreign-born entrepreneurs.

2. Find yourself a top-notch university, preferably one with room to spare.

A top-tier university is not only significant as a research center, but as a networking hub, cultural behemoth, and, if you're lucky, a wheeler-dealer landlord.

It hardly seemed inevitable in the 1950s that Stanford, a dusty Western outpost, would become the center of the technology universe. But the university was able to use generous Cold War research money from Washington to transform itself into a science and engineering powerhouse. At the same time, its administrators began to develop the thousands of acres of land that the university owned adjacent to the main grounds (founder Leland Stanford had converted his vast horse farm into a university campus, and the founding grant forbade selling off any land). In 1951, university leaders including Frederick Terman, then the dean of the engineering school and later the university provost, recognized that Stanford's high-powered alumni would gravitate to a university-built business park for research-based industry in Palo Alto, deliberately designed to look and feel like the campus next door. Early on, Terman was able to snag such entrepreneurial tenants as Hewlett-Packard, whose founders had graduated from Stanford, which then drew other top talent and emerging firms.

Stanford has continued to be Silicon Valley's engine for top talent and smart ideas. It has graduated more future tech-company CEOs than anywhere else in the world. Some of the biggest tech success stories -- Google and Yahoo!, to name only two -- got their start when their founders were still Stanford graduate students.

3. Don't forget that location matters -- and that people vote with their feet.

Silicon Valley prospered because it had the qualities that attracted people who had the education, economic resources, and social advantages to live anywhere they chose. Talk about being in the right place at the right time. In the 1950s and 1960s, millions of Americans were moving from the Rust Belt to the Sun Belt,

and from cities to suburbs. The Valley was exactly the sort of destination they desired -- within commuting distance of a vibrant major city, San Francisco, but with plenty of open land to build houses, highways, and office parks. East Coast industrial cities didn't have such advantages. Places like Philadelphia and Baltimore had top-notch universities (the University of Pennsylvania was home to the world's first supercomputer), but declining inner-city neighborhoods of the 1960s and 1970s were hardly a lifestyle draw. The Santa Clara Valley boasted great weather, outdoor activities, good schools, and sought-after real estate -- the "California Dream."

Today's high-tech workers are even more footloose, choosing to move around the globe in search of the right job in the right place. The cities that can't provide competitive amenities will lose out. Polluted air in Chinese cities dampens local campaigns to recruit expatriates. India's overloaded infrastructure discourages businesses and people from relocating. The point is that isolated research parks can't lure talented people -- they've got to be someplace where the world's most talented people actually want to live.

As for the rest of what it takes to build your own Silicon Valley, all I can say is good luck. The Valley came to be in good part because the people there didn't have to pay attention to much else other than the work itself. Money flowed easily. Social problems seemed miles away. And, most importantly, success created a virtuous cycle that led to more and more success. Many other would-be silicon cities are not as fortunate. In declining industrial regions of the United States and Europe, planners are today hatching plots to revitalize downtrodden neighborhoods or collapsing industrial regions as new high-tech corridors. But they often get sidetracked trying to solve multiple problems at once. Let's face it: Not every empty block can become a new technology hub.

The secret of Silicon Valley is that it wasn't a consciously planned silicon city. The Valley exists because of other big forces -- Cold War spending patterns, sustained GDP growth, and large-scale migration and immigration. It prospered because of unique local characteristics like risk-tolerant capital, entrepreneurial leadership, and good weather. It grew organically. It had room for happy accidents and lucky breaks. The not-so-good news for places like Shenzhen's University Town or Russia's Innograd, the high-tech corridor Medvedev wants to create in a woody area outside Moscow, is that this kind of ecosystem can't be built quickly from scratch. It takes time to grow, and success will depend on things its builders cannot control.

The good news for people wanting to create the next Silicon Valley is that it's no longer the 1950s. Globalization has changed the playing field, and the technologies that the Valley helped create have brought far-flung places and people together like never before. The Silicon Valley's virtuous cycle has created a global supply chain in which many cities now play a critical role. Engineers write code in Bangalore, and IT specialists answer the phones in Bucharest; silicon chips are built in Singapore, and social networking companies grow in Sao Paulo. There's no longer only room for one single place where the magic happens.

But place still matters, and the right ingredients still make a difference. Some of the biggest tech success stories of the past two decades, like India and Ireland, resulted from government investments that came in the form of tax breaks and lowered regulatory barriers to foreign investment -- not just building research parks. Yet I still have a hard time convincing the never-ending delegations of urban planners of the importance of the other, broader things government can do, like liberalizing immigration rules and creating an environment full of educational opportunities and start-up capital for untested young entrepreneurs. This simply doesn't resonate for many of the would-be silicon cities being constructed by the Russias and Chinas of the world; with their long histories of centralized control, they are still convinced they can order up success.

Not every place can be Silicon Valley -- but not every place has to be. The ideal environment for today's aspiring entrepreneurs may well be more gritty and urban than the lush grass and quiet office parks of Santa Clara Valley. So beware the visionary who comes selling you a new research campus in the middle of nowhere; it might work out, but I wouldn't bet on it being the Next Big Thing.