



A Strategic Overview of the Silicon Valley Ecosystem: Towards Effectively “Harnessing” the Ecosystem:

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2. The Silicon Valley Ecosystem: Overview

Silicon Valley has a variety of business organizations and institutions that create a business environment that has proved to be highly conducive to the successful creation of startup firms, disruptive business models, and leadership in a variety of high-tech areas. The various components and characteristics of Silicon Valley that “make the system work” fit together and exhibit complementarities are best referred to as the Silicon Valley “ecosystem.”¹

What are the key components of Silicon Valley, how do they work, and how do they fit together? In this section, we introduce the Silicon Valley ecosystem, drawing upon existing research on Silicon Valley.

Below are a broad overview of various characteristics of Silicon Valley most commonly cited as the being distinctive contributors to its success. These factors will be examined in further detail as part of the four components below, and it is not intended as an exhaustive list. Rather it is a set of characteristics often noted about Silicon Valley that have empirical underpinnings.

Figure 1. Key Characteristics of the Silicon Valley Ecosystem

Characteristic
<ul style="list-style-type: none"> • Dual ecosystem of large firms and startups • High financial returns for successful entrepreneurs and startups’ early employees • Global top-level human resources for all stages of startups • Business infrastructure (law firms, accounting firms, mentors, etc.) • Venture capital – most competitive market • Globally top class universities (Stanford, UC Berkeley, UCSF) • Human resource clusters anchored around top universities • Extensive government role in shaping technological trajectories and basic science

¹ It has also been referred to as a “Habitat.” We prefer “ecosystem,” since “business ecosystem” is now a more common phrase in business writing. Lee, C.-M., W. F. Miller, M. G. Hancock and H. S. Rowen, Eds. (2000). *The Silicon Valley edge : a habitat for innovation and entrepreneurship*. Stanford, Stanford University Press.

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- Highly competitive industries, balance between “open innovation” and secret protection
 - Balance of “open innovation” and intellectual property protection
 - “Technology Pump” of top human resources from all over the world
 - High labor mobility at all levels of management and talent
 - Culture of accepting failures (effective evaluation and monitoring)
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Source: Miller et al. (2000), “Innovations” (2015)

First, Silicon Valley has a business ecosystem in which *both large firms and startups exist symbiotically*. Silicon Valley is sometimes seen as mainly a mecca for startups, but in many ways it is the coexistence of large firms, which provide markets for startups’ offerings, a source of human capital, and often expertise, along with startups that make the ecosystem viable. Some startups eventually grow to become large firms, spawning new firms as employees leave to startup, fueling a virtuous cycle.

Successful entrepreneurs and early employees can expect *high financial returns*. Pay schemes such as stock options were initially devised as mechanisms to lure employees away from stable large firm jobs, and M&A and IPO activity enable high returns.

Silicon Valley enjoys an extremely *deep human resources pool* in which people from all over the world come to compete. Silicon Valley has people who have deep expertise in every stage of a startup, from initial startup to rapid growth, to increasing maturity. Taking a vision to make a company is the first step—expertise to manage a rapidly growth startup to a mid-sized firm, to a large firm usually requires different set of expertise, and Silicon Valley’s long history of growing companies has led to people who have long careers at particular stages of company growth.

The *business infrastructure* of Silicon Valley, such as law firms, accounting firms, mentor networks, and other aspects provides value to entrepreneurs and startups beyond the direct financing or services rendered. Law firms that specialize in serving startups, for instance, are often paid only if the startup is successful, so they do their own screening when taking on new firms as clients. They can also act as business advisors and deal-makers, having dealt with a very large number of successful startups.

Silicon Valley has the most *competitive venture capital market* in the world. Not only does the amount matter, but the extra value that venture capitalists provide such as interpersonal networks for startups’ initial employees and staff, and introductions to potential customers and buyers of the firm are all important value-added functions they provide beyond financing. Their initial screening of potential startups, and startups as they grow through various stages provides a critical monitoring mechanism, often with hands-on assistance in managing the company.

Silicon Valley itself has *extremely competitive industries*. Competition among startups is intense and cutthroat. Moreover, while they benefit immensely from large firms’ “open innovation” practices that allow them to sell their offerings and often the company itself to large firms, it is also balanced by intense secrecy. Apple and Google, for example, are famous for

keeping their employees from revealing secrets, and startups are often extremely careful of letting their business models or technologies become known to firms that could become major competitors.

Globally top-class research universities, Stanford University and University of California (UC Berkeley and UC San Francisco Medical Center) anchor Silicon Valley in scientific and applied research, forming communities of expertise and interpersonal networks that continue to drive innovations in the region. These research universities were instrumental in developing Silicon Valley in the first place, and they derived benefit from being in or near Silicon Valley to remain globally leading universities. The universities provide *focal points of human resource clusters*.

Top talent from all over the world have come to Silicon Valley through universities, firms, and favorable temporary immigration visas. Historically younger than East Coast counterparts, Stanford and UC Berkeley populated their faculty with top immigrants, who came in various waves throughout the past century—Europeans, South Asians, and various Asian.

While many entrepreneurs tend to downplay the role of *government*, the government was not only critical to establishing Silicon Valley, but it continues to fund much of the basic research in the area. Some have referred to it as a “de facto” industrial policy, as we will see later.

Labor mobility in Silicon Valley is higher than other areas of the country, and are particularly high in the information technology industries. Large firms struggle to retain high quality employees, while startups absorb a great deal of talent, but end up becoming large firms through growing on their own or getting acquired, then facing the same dilemma as large firms of keeping employees. Consequently, wages have risen considerably. Moreover, even top management talent, such as top executives of firms such as Google, can move to others firms such as Facebook or become founders of firms such as Twitter, revealing how talent can move around at all levels within companies.

Finally, Silicon Valley is widely known to have a *culture of accepting* failure as a positive experience if the failure led to important lessons. Underlying this culture is an *effective set of mechanisms for evaluating and monitoring* entrepreneurs and startups, allowing “successful failures” to become the stepping stone for subsequent successes. Many noteworthy startups, more recently including Dropbox and others, were not the first, but rather the second or third attempt by the entrepreneurs before becoming successful.