

BOOK NOTE

REGIONAL ADVANTAGE: CULTURE AND COMPETITION IN SILICON VALLEY AND ROUTE 128

By AnnaLee Saxenian.¹

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If you believe the hype, new technology is about to overrun the way people have lived their lives for years. Now, not only are management consultants heralds of the Tofflerian Third Wave;² the hype has spread to the Speaker of the House.³ This new digital future, when it arrives, will offer us amazing opportunities for personal interaction and entertainment, and a furious battle is on to decide which companies will bring it our way.

Similar battles of change have been fought before as new technology insinuated itself into peoples' lives, from basic labor-saving devices such as the washing machine, to innovations with radical cultural consequences like the automobile. We take almost for granted the inexorable march of progress toward these seemingly indispensable, ubiquitous tools, not stopping to remember that they replaced other tools and that those other tools had industries supporting them. Sometimes, older firms adapt to the new world and remain competitive, but the trip to popular acceptance for new technology items is littered with ghost towns that the highway used to pass and corporate carcasses, firms run off the road when the entrepreneur's shiny new model roared by.

In her book *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*, AnnaLee Saxenian addresses the age-old question of what makes some businesses succeed and others fail, using case studies of the two regions. She avoids dealing with this standard subject of

1. Assistant Professor, Department of City and Regional Planning, University of California at Berkeley.

2. See generally ALVIN TOFFLER, *THE THIRD WAVE* (1980); ALVIN TOFFLER & HEIDI TOFFLER, *CREATING A NEW CIVILIZATION: THE POLITICS OF THE THIRD WAVE* (1995).

3. See, e.g., Jim Impoco, *Speaker Gingrich's Intellectual Gurus*, U.S. NEWS & WORLD REPORT, Feb. 13, 1995, at 75.

business literature in a merely standard way, however, by eschewing a traditional focus on quantitative economics of firms and industries in favor of one oriented toward corporate and regional culture as a key ingredient in long-term success. Firms, supply networks, products, and supporting cast members such as law firms are clearly players in her book, but they take a back seat to a region's "industrial systems," which she defines as the "historically evolved relationship between the internal organization of firms and their connections to one another and to the social structures and institutions of their particular localities" (p. 7). By looking at the symbiosis of businesses and the environments in which they are located, Saxenian builds significant insights about promoting creative development, and indirectly makes important observations about how lawyers should approach their work with corporations, high-tech and otherwise.

In service of this general goal, Saxenian first offers a historical look at the electronics and technology industries as they have developed in the two prime areas of innovation: California's Silicon Valley and the Route 128 corridor outside of Boston. She then moves on to offer an answer to a business development puzzle: how did two technologically sophisticated regions, working in industries that were widely seen as "the future," take such different paths to their present, divergent situations? Silicon Valley has continued to flourish in its core business as time has gone on, while the Route 128 corridor has lost its competitive edge. Her wonderful history of the regions' development nicely sets the stage for her innovative explanation of their differing degrees of success.

Saxenian provides a broad view of how the regions' industrial bases sprung from similar roots—local universities, the government-funded defense industry, and entrepreneurial funding sources. Boston has been a center for innovation throughout this century through significant collaboration between industry and local universities, primarily the Massachusetts Institute of Technology ("MIT") and, to a lesser extent, Harvard University. MIT's current collaborative ventures, such as the world-famous Media Lab, had many forerunners, from the early links between departments at MIT and now-large companies like Polaroid and Raytheon, to later collaborations such as Digital Equipment. Companies like Raytheon thrived in the ready military money that was available to develop new technologies for World War II, Korea, and Vietnam. Early venture capital also produced funding for a number of companies spun out of MIT and Harvard, and venture capital combined with significant

defense spending drove the technological boom in the 128 corridor for much of its existence (pp. 12-20).

In the West, the triad of university contribution, defense spending, and venture capital worked much the same way, if only with a somewhat later start and an interesting twist of urban legend. Stanford University graduate students William Hewlett and David Packard—with significant support from engineering professor Frederick Terman—formed Hewlett-Packard in their garage in 1937, inspiring the current article of faith among many entrepreneurs that garages are inherently creative places. Sometimes in garages and sometimes out of them, other companies were formed with a focus on bringing technical products to primarily high-end customers such as large corporations and the government. Shockley Transistor's founding in 1954 quickly bred Fairchild Semiconductor, which in turn bred Intel and a number of other companies (p. 25). Also coming out of Fairchild were a number of Silicon Valley's prominent venture capitalists who have provided funding for innumerable new ventures that have continued the Valley's innovative traditions (pp. 25-26). The industry also benefitted through the expansion of engineering programs at Berkeley and other local universities. (p. 42) Through the 1950s and 1960s, these firms and others such as Varian and Litton Industries thrived on the same defense spending that had helped the development of the 128 corridor's industrial base. Stanford played a major role in the founding of many of these companies and made its laboratories and classrooms available to them for the sharing of information and further training.

These common roots led to similar results—booming industrial production. But in Chapter Four, entitled "Betting on a Product," Saxenian explains that unhealthy business practices eventually emerged in both regions, despite the widely divergent business cultures they had created leading up to the mid-1980s. The 128 corridor companies had always been saddled with a mass-production model and hierarchical management structure that Silicon Valley entrepreneurs and companies actively resisted from the beginning. By the time the mid-1980s rolled around, however, both regions were expecting that the gee-whiz equipment they were producing would continue to rule the market into the foreseeable future. These firms ran head-on into reality in the form of foreign and domestic competitors who were willing to provide good, and in some cases perfect, substitutes at a lower cost. For Silicon Valley, a great emphasis had been placed on semiconductor memory as a growth market in the late 1970s and early 1980s. When Japan entered and

gained a lead in a new generation of memory chips in the mid-1980s, Silicon Valley's investment in new production facilities earlier in the decade seemed unwise in retrospect, and the Valley suffered an unprecedented financial hit. Over 25,000 jobs were lost in the region, three-quarters of them in the semiconductor and related industries (p. 89).

For the 128 corridor, the bet had been on minicomputers and mainframes. As lower cost producers both in America (some in Silicon Valley) and abroad sprung up to produce personal computers and workstations that became rapidly more powerful, the mainframe and minicomputer market dwindled, having huge effects on the 128 corridor's biggest employer, Digital, and the companies that had sprung up to compete with it (pp. 98-104). Unlike a number of its competitors, Digital survives to this day, but remains in serious financial trouble, from which it may or may not recover.⁴

Saxenian offers this interesting and useful history in service of her ultimate subject: explaining why Silicon Valley recovered from this crisis to again be the scene of explosive growth, while the 128 corridor has stagnated.⁵ The core answer she proposes is that the Route 128 corridor's firm-based view of development, focusing all activities on developing in-house products and maintaining a diffidence or even hostility to products and innovations from other companies, left it particularly unready to respond to an industry crisis. Linked with this firm-based view was a hierarchical approach to management that emphasized "the proper channels," thereby stifling change. Silicon Valley, on the other hand, had a business culture oriented toward the rapid introduction of innovation, no matter where it came from, and a history of collaboration in using innovations to further business opportunities. The management culture was a relatively open one, where the quick development of good ideas was expected, and those who brought them into being were rewarded regardless of their place in the company hierarchy. Hewlett Packard's broad implementation of this approach,

4. See Beppi Crosarial, *Digital Shares on Rise*, BOSTON GLOBE, Apr. 11, 1995, at 25; Elizabeth Corcoran, *Digital Reports a Profitable 2nd Quarter*, WASH. POST, Jan. 19, 1995, at D10; see also Kenneth Labich, *Why Companies Fail*, FORTUNE, Nov. 14, 1994, at 52.

5. One measure of explosive growth is venture capital, and the vast gap that has developed between the two regions in the amount attracted continues. Silicon Valley companies received \$380 million—about 25% of the nation's venture capital—in the fourth quarter of 1994, while Boston area firms lagged far behind with \$130 million, less than 9%. Ronald Rosenberg, *'94 Investment Signal Shift: Picture Dims for Biotech Start-ups*, BOSTON GLOBE, Feb. 26, 1995, at 77, 80 (discussing a survey on venture capital by the Boston Globe and Price Waterhouse).

which became known as the “HP Way,” was the example that many companies continued to follow and implemented more vigorously after the mid-1980s crisis. Even companies such as Intel that did not completely abandon the firm-based view had shed much of the hierarchy, and were thus well-positioned to move on when their core products were threatened by competition (pp. 50-57).

The point Saxenian makes about the differing responses of the two regions’ business cultures may be summed up best by one of the many entrepreneurs she quotes:

In Boston, if I said I was starting a company, people would look at me and say: “Are you sure you want to take the risk? . . .” In California, I became a folk hero when I decided to start a company. It wasn’t just my colleagues. My insurance man, my water deliverer—everyone was excited. It’s a different culture out here (p. 63).

Saxenian takes sociological observations such as these, culled largely from interviews, and applies the concept of industrial systems to explain how they develop and affects the business development of geographical regions. Her exhaustive conversations with the people who have made these industries go for many years give the project a feel that no quantitative analysis could ever provide. Perhaps the most useful part of this book is her illustration through case studies of the idea that no firm or industry exists in a vacuum; there is a culture surrounding it, and looking at how that culture affects firms’ business dealings can provide some clue to why some firms succeed and others do not. Far too much business writing seems to miss the importance of collaboration and the sharing of information amid competition, which for Saxenian seems to be the crucial factor that pushes one region ahead of another. By applying the industrial systems approach, Saxenian’s analysis offers a good reason that much more business traffic goes through one region rather than another, and argues for the open, collaborative model that Silicon Valley companies exemplify.

There is a strong irony to the observation that rigid hierarchies and institutional arrogance have stifled part of the computer industry—one that Saxenian wisely notes. A major reason that many of us are so interested in these technological revolutions is that they will in some sense make it easier for people to communicate, significantly reducing the difficulty in processing and sharing information. One might ask why an industry

dedicated to creating machines that facilitate an open culture has failed to internalize this openness. Answering this question shifts Saxenian's focus from industrial systems to regions. "Paradoxically," she notes, "regions offer an important source of competitive advantage even as production and markets become increasingly global. Geographic proximity promotes the repeated interaction and mutual trust needed to sustain collaborations and to speed the continual recombination of technology and skill" (p. 161). The important part to emphasize here is that geographic proximity is a means, not an end. A regional focus will continue to be useful as long as "repeated interaction and mutual trust" are primarily linked with geography (p. 161). If the two become less connected, as they may be with increased computer networking, the geographic focus of her book diminishes in significance. Neither of these necessary features of open, adaptable business practices are guaranteed by geographic proximity. Thus, her conclusion is essentially that any number of advantages can be undermined by deficiencies of culture and an unwillingness to accept change as a constant.

It is in trying to apply these useful observations to broad public policy changes, however, where the book begins to get a little thin. Saxenian's suggestions in her conclusion about creating a flexible role for regional and national governments in adapting to changing environments are too diffuse to be particularly critiqued (pp. 161-68). Too much of the book focuses on explaining how the different cultures of the two regions affect particular actors and their roles for her to effectively shift to national policy concerns. Because of all the effort Saxenian puts into solving the business puzzle, it would have been nice to see some more prescriptive elements suggesting what various players in the development of the two regions should do in the future. She rightfully notes the difference between the regions in how their universities treated potential spinoffs and local businesses—MIT focused its efforts more on charging large businesses fees for access to research while Stanford sponsored continuing education for local engineers and encouraged companies to drop by laboratories (pp. 23, 66). She does not, however, come back to this topic to explain what someone seeking to establish a particular spinoff program might go about to help its success.

Though Saxenian does write broadly about Silicon Valley law firms and their role in reinforcing the region's open business culture (p. 41), another element missing from the book is an explicit look at the role that law and legal departments have played in developing companies. Her brief suggestions about the role of government and her earlier explana-

tions of the influence of individuals in the development of these regions suggests a role for lawyers in assisting high technology clients and engaging in community policymaking. Saxenian presents one particularly important piece of advice in her conclusion:

The starting point for a regional industrial strategy is fostering the collective identities and trust to support the formation and elaboration of local networks. By providing public forums for exchange and debate, policymakers can encourage the development of shared understandings and promote collaboration among local producers (p. 167).

Lawyers have a much greater role to play in building these public forums than is generally recognized because law provides the general structures through which the business deals supporting technological industries are made. The writing of contracts, the general representation that many lawyers provide in business negotiations, and the prosecution of trade secret cases are only a few of the areas in which lawyers have a great effect on the technology industries. In wrapping up the book, it would have been better for her to return to how particular players such as lawyers can facilitate the collaborative development process rather than turning to the industrial policy debate.

Taking the approach that Saxenian's descriptive writing implicitly suggests demands a more complex idea about the role of the lawyer than is usually taught today in law schools. It is commonplace in law schools to teach that a lawyer should reflect the interests of his or her client, with the interests of the client being defined rather narrowly in terms of the deal at hand. What Saxenian's research implies, however, is the need for a very broad approach to the concept of a client's interests. A burden is rightfully placed on the lawyer to ask the right questions in helping the client to see potential legal action in its broader context. This is not a new attitude—in his career as a practicing lawyer, Justice Brandeis was a well-known proponent of taking an expansive approach to the interests of clients.⁶ While Brandeis may have sometimes overstated the proper

6. See PHILIPPA STRUM, *BRANDEIS: BEYOND PROGRESSIVISM* 54-57 (1993). See also STEPHEN W. BASKERVILLE, *OF LAWS AND LIMITATIONS: AN INTELLECTUAL PORTRAIT OF LOUIS DEMBITZ BRANDEIS* 92 (1994) (quoting law partner Edward McClennan on Brandeis' clients: "They sought his advice as a lawyer, but as a lawyer with an unusual grasp of common affairs.")

role of a lawyer by diminishing the client, books like Saxenian's rightfully remind us that the profession, by reflecting the same shortsightedness that she casts aspersions on in the business realm, may have swung too far away from the counselor's perspective.

Because the law plays a major role in moving a technological concept from its genesis to a familiar product that improves peoples' everyday lives, attention to how its practitioners go about their craft is critical. Lawyers can either foster the development process or stifle it, and more attention to their roles and the particular roles of other players in the process would leave the reader with a greater understanding of what the next steps should be in promoting the collaborative culture for which Saxenian makes such an impressive case.

Saxenian explains why, in the competition to bring the new digital future to American and world consumers, Silicon Valley's explosive intellectual potential has continued to win the day while the 128 corridor's former lead has dwindled. The experiences of these two regions offer important lessons to the other technology regions that have been and are developing—places like Austin, Orange County, San Diego, North Carolina's Research Triangle, Salt Lake City, and Northern Virginia. They also hold the same lessons for both Silicon Valley and Route 128 companies: it is through competition that celebrates collaboration and the general advancement of a field that geographical—and perhaps at some point “virtual”—regions develop into powerhouses. Any region that learns this lesson can be sure that it will not become a ghost town that the highway used to pass.

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