

Richard Florida and Martin Kenney Respond

W(h)ither Flexible Specialization

AnnaLee Saxenian's criticism of our analysis of Silicon Valley apparently comes from a very partial reading of our work and represents a flawed and biased interpretation of our argument. The crux of her criticism rests on the allegation that we juxtapose two models of industrial organization, "small firm cooperation" versus the "large integrated corporation." But that is not our position at all. Instead, our argument is that organizational structure—*not firm size*—is the key determinant of technological and industrial competitiveness. In the opening chapter of our book, *The Breakthrough Illusion* [Basic Books, 1990, pp. 9-10], we advance the following thesis:

Simply put, organization is a far more important source of competitive advantage than is size. The organization of R&D, the organization of manufacturing, and the integration of the two have powerful effects on the capacity to develop and improve new technology. Big American firms, small high-tech start-ups, and large Japanese corporations are all organized differently, and this—not size—is the critical factor in their differential abilities to adapt to new circumstances, mobilize resources effectively, generate new innovations, and turn them into products.

Saxenian suggests that we "applaud" the traditional pattern of vertical integration in industry. Wrong again. In fact, an entire chapter of our book (chapter 2) is devoted to a stinging critique of the vertically-integrated "fordist" model. Its limits and organizational rigidities, we contend, are what set the stage for the rise of a series of alternative models of industrial organization, most notably the Silicon Valley and Japanese ones. She writes that we neglect "the complex of institutions and relationships which connect firms to one another and to the outside world." In fact, this is one of our main points. In the introductory, "From the Editor," section which preceded both of our articles, the editor saw it quite differently: "Like Florida and

Kenney, she [Saxenian] emphasizes the importance of inter-corporate connections and relationships in fostering economic growth." Saxenian goes on to criticize us for conceptualizing Silicon Valley as being "un-treelike." We use a tree metaphor for a specific purpose: to elucidate the very serious problem of industrial fragmentation in Silicon Valley. She in turn poses Silicon Valley as a happy garden—an "ecosphere in which a diversity of flora and fauna combine and recombine in a mutually sustaining unity."

There is an unmistakable pattern here: Saxenian bases her criticisms on the "straw men" she creates, rather than our arguments, analysis and evidence. We'd simply suggest that she re-read our chapter (and the book from which it was drawn), digest the broad body of evidence which is presented, and re-think what she wants to say in light of the actual concepts, analysis, and evidence we advance. Now, on to the real issues.

Saxenian insists that Silicon Valley is a "flexibly specialized" community of small firms and believes that therein lies the cure-all for America's high-technology woes. A review of the evidence—the lawsuits, the raids, the defections, the low-wage sweat shops, the huge amount of off-shore manufacturing, and the penetration of foreign capital—shows, without a doubt, that the real Silicon Valley cannot be shoe-horned into the normative ideal of flexible specialization with its heavy emphases on trust, cooperation, and artisanal production. Curiously, Saxenian ends up admitting as much: "When growth slows," she concedes, "the same firms are tempted to resort to mutually damaging practices to preserve their own position." If relationships do not hold in downturns, then how strong can they be?

Saxenian also ends up agreeing with us on the obvious fact that there are large as well as small firms in Silicon Valley's high-technology complex. This contradicts her earlier formulation [*CMR*, Fall 1990, 33/1: 89-112], and basically amounts to saying that Silicon Valley fails on another, crucial dimension of flexible specialization, which according to Piore and Sabel [*The Second Industrial Divide*, Basic Books, 1984] and her earlier article [*CMR*, Fall 1990, p. 91] is defined as a cooperative community of small, specialist firms. She tries to finesse this by redefining flexible specialization "as an ideal type . . . system that can include both large and small firms." This stretches the concept of flexible specialization far beyond its original meaning, turning it into a broad, "catch-all" category for any and all forms of industrial organization—Silicon Valley, Italian and German industry, even large Japanese firms. This is not only disingenuous, it explains very little—blurring crucial differences, masking explanatory factors, and lumping anything that doesn't fit under the convenient category of "hybrid." The fact of the matter is that there are real differences among these organizational forms—differences that matter to firm-, regional-, and national-level competitiveness.

Can Silicon Valley really save us? Can it provide a locomotive for the entire U.S. economy? The answer is no. Writing in the same issue of *CMR*

[Fall 1990, 33/1: 148-160] Intel chief Andrew Grove points to many of the same problems we do, and provides dramatic evidence of the U.S. decline in virtually all sectors of high-technology microelectronics from semiconductors through computers. Silicon Valley is very good at some things—putting together new combinations of people, mobilizing venture capital, and creating new enterprises, all around the objective of harnessing the tremendous profits that come from breakthrough innovation. But it is not so good at others—keeping most of these businesses together, making crucial downstream product and process improvements, developing state-of-the-art manufacturing capabilities. Worse yet, this division of labor frequently benefits our major competitors, who quickly gain access to the new breakthroughs and apply them in their own products. There is cooperation in the forging of new combinations of innovative talent (see chapters 3 and 4 of *The Breakthrough Illusion*), but there is also fierce, unrelenting, and damaging “Hobbesian” competition. Silicon Valley’s own organizational structures and “rules of the game”—from venture capital financing to job-hopping as a form of career advancement—encourage and reinforce this. And, of course, Silicon Valley’s organizational and technological innovations have thus far failed to set in motion the all important “gales of creative destruction” and transform the broader environment of U.S. manufacturing.

At the root of America’s sagging technological and industrial competitiveness, in Silicon Valley and elsewhere, lies an even bigger organizational failure—one which Saxenian fails to even acknowledge. Both Silicon Valley and the American corporate system as a whole neglect the crucial, continuous process innovations that can come from manufacturing and manufacturing workers. In *The Breakthrough Illusion*, we document how U.S. corporations retain the traditional divide between intellectual and manual labor and separate innovation from factory production, placing scientists and engineers in R&D complexes far removed from the actual factory. Most Silicon Valley companies do little or no manufacturing at all, but depend upon outside, frequently off-shore, subcontract manufacturers to do it for them (chapter 7). Even the most technologically advanced U.S. companies continue to organize manufacturing along the lines of Frederick Taylor and Henry Ford—that is, they do not allow factory workers to contribute their ideas or intelligence.

Silicon Valley and the American corporate system more broadly are losing out to a new organizational model which explicitly harnesses workers’ knowledge and intelligence as a source of innovation, productivity, and economic value. This is not the “passive involvement” of the old labor-management committees or quality circle movement of the late 1970s and 1980s, and neither is it a return to artisanship and craft. This is a new kind of direct involvement in which factory workers’ ideas are collectively mobilized on a day-to-day basis as a source of continuous innovation and improvement in product quality, product performance, productivity, and

the manufacturing process itself. While this model has mainly grown up in Japanese manufacturing corporations, it is taking root in the U.S. in the hundreds of Japanese transplants and their Japanese and U.S.-owned suppliers in and around the industrial heartland [see our article, "How Japanese Industry is Rebuilding the Rustbelt," *Technology Review* (February-March 1991)]. Developing new forms of corporate organization and management strategies which harness the intellectual capabilities as well as physical dexterity of all workers from the R&D lab to the factory floor is the key to success for Silicon Valley and for American industry as a whole.

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