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From Design to Design Thinking

Manufacturing Culture in Silicon Valley



PHOTOGRAPH BY BARRY KATZ

California design is now a brand of inestimable value, but it did not descend from the sky like the perpetual sunshine, or roll in like the endless surf. “Designed in California” has its roots in the unique manufacturing culture of Silicon Valley, yet has survived the sea change that has led to most things being “assembled in China.”

In a special issue dedicated to “Design on the West Coast,” *Industrial Design* magazine unwisely predicted that “despite the pleasant environment and the proximity of centers of scientific investigation . . . [the San Francisco Bay region] may never challenge Los Angeles for industrial primacy on the West Coast.”¹ These words were written in 1957, and the editors may be forgiven if they failed to notice the founding in the previous year of Shockley Semiconductor Laboratories in an industrial no-man’s land on the border of Palo Alto and Mountain View, or to discern, among the apricot orchards and walnut groves that dotted Santa Clara Valley, the shape of things to come. Within a decade the 30-mile strip of land bracketed by Highways 101 and 280 had begun its metamorphosis into what journalist Don Hoefler officially christened “Silicon Valley, USA.”²

Even then, however, the idea that the region was, or might ever become, an important center of design was implausible at best. In the public imagination, “California Design” in the early 1970s evoked the psychedelic posters of the Grateful Dead, the craft movement personified by Sam Maloof, or the lingering midcentury modernism of Charles and Ray Eames. By contrast, the products of Silicon Valley—audio oscillators, gas analyzers, industrial lasers, missile guidance systems—were remote from most people’s lived experience. A vast abyss separated the equation-driven world of technical engineering from the vagaries of consumer-oriented product design.

Only one Silicon Valley company, the game designer Atari, oriented itself toward the public, but Atari’s spectacular rise and precipitous decline served as a warning against what the Valley’s resident journalist, Michael S. Malone, called “the siren call of the consumer business.”³ Intel’s attempt to market a digital wristwatch—the

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famous Microma—was a \$15 million write-off. Hewlett Packard fared no better with the HP-01 watch-calculator, a truly hideous marvel of miniaturization whose 28 tiny buttons had to be pressed with a stylus built into the strap. Even selling chips that went into consumer products (like televisions) was distasteful to companies that wanted to be at the forefront of technology. A handful of industrial designers worked in the corporate offices of HP, IBM, and Ampex, but they lived a marginal existence, working mainly on technical instruments created by and for engineers who regarded them with the utmost suspicion.

Inevitably, however, the fruits of Silicon Valley R&D began to filter outward to the consumer market, and the idea slowly took hold that designers might do something other than stuff electronics into sheet metal boxes. By the later seventies a loose-knit community had begun to form, fed by the design programs at Stanford and San Jose State and knitted together around the Palo Alto Center for Design, the annual Stanford Design Conference, and a mimeographed newsletter of the local IDSA (Industrial Design Society of America) chapter that gained surprisingly wide circulation. A few enterprising individuals, sniffing the opportunities posed by the emerging digital technology, began to migrate to the region from across the U.S. and even Europe, and by the end of the decade the outlines were discernible of a distinct regional culture.

Although now-defunct firms such as GVO, Innova, and Clement DesignLabs had laid the groundwork, the rise of the consultancies may be said to have begun in 1979 when Bill Moggridge ventured west from the U.K. to plant his first overseas colony, I.D. Two, in Palo Alto. As business grew—a revolutionary “laptop” computer for GRiD Systems, a desktop computer for Convergent Technologies—partner Mike Nuttall split off to form Matrix Design. They entered into ad hoc partnerships with more technically proficient groups such as David Kelley Design, a small, engineering-driven outfit formed by a handful of recent graduates from Stanford, and the three formally merged in 1991 to form

IDEO. Lunar Design was formed in 1982, and Studio Red a couple of years later, sustained by the flight of impatient entrepreneurs from the labs at Xerox PARC and the shift of the computer industry from mainframes and minis to what visionary researcher Alan Kay had once imagined as “personal computers.”⁴

The pivotal event may have come in 1982, the year that the six-year-old Apple Computer decided that it had outgrown its roots in suburban Cupertino and began an international search for a designer to develop a unified design language and a global identity. Two years later the so-called “Snow White” competition had netted Hartmut Esslinger, who relocated from the Federal Republic of Germany and renamed his company frogdesign. By the end of the 1970s there were dozens of design firms in the Bay Area and the profession had begun to gain traction; by the end of the 1980s there were hundreds and it had hit critical mass.

The new firms competed, cooperated, merged, and split off from one another in dizzying succession: frogdesign spawned fuseproject, New Deal Design, Whipsaw, and Vent. Speck, NONOBJECT, and Daylight would spin off from IDEO. The ‘90s saw the founding of Astro Studios, Jump Associates, and so many others that it seems almost arbitrary to name just a few. As they grew they learned to leverage complementary skills—European and American training; design and engineering; hardware and software. They cobbled together business plans, and improvised methodologies. As the technological insurgency of the region continued unabated—from semiconductors to PCs and from PCs to software—the perimeter around the boundaries of design itself expanded. By the mid-1980s it had become clear that the QWERTY keyboard was about the only thing that linked the typewriter to the computer, and the field of Interaction Design was born; the complexity of

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people’s relations with digital objects prompted a searching investigation into our engagement with even the most mundane artifacts, and by 1990 cultural anthropologists, developmental psychologists, and other “human factors” specialists had arrived en masse and begun, in the memorable words of W.H. Auden, to “commit social science.”

As their collective confidence grew, and companies in the increasingly commoditized technology sector sought with growing desperation to differentiate their products from those of their competitors, designers lobbied hard to be brought into projects at the outset (“Phase Zero”) rather than be handed an assortment of components and instructed to package them. They resisted the assumption of many clients (and all journalists) that designers are essentially stylists, and endeavored to climb higher and higher on the value chain and move further and further upstream (the astute reader will have detected the arrival of the MBAs). “Design services” evolved into “strategic services,” and many designers found—somewhat to their own chagrin—that they were no longer relegated to the back of the bus, and in a few cases had moved almost into the driver’s seat.

In contrast to the other great periods in the history of design—the Arts and Crafts Movement in 19th-century Britain, streamlining in Machine Age America—design in Silicon Valley was never defined by a style or a methodology. Its distinctiveness lay in the fact that in this charmed sliver of inflated real estate designers were challenged to give form to the digital revolution that was transforming the texture of everyday life. What should a “modem” look like? How do we prototype the experience of a passenger purchasing an airline ticket online? What is the future of the book? What kind of curriculum will teach students that the real foundation of professional practice is no longer the Bauhaus mantra of “art plus technology” but rather “design research?”

The deflation of the dotcom bubble has given rise to most recent expression of the broadening base: the movement—celebrated by some and deplored by others—that has come

to be known as “design thinking.”⁵ This latest addition to “California Design” holds that designers, over the course of their collective history, have evolved a set of intellectual skills that can be applied to a vastly greater range of problems than may have previously been supposed: not just the design of the latest injection-molded, flat-screened, microprocessed gizmo, but of a program to combat pediatric obesity in urban America; to build solar-powered health clinics in Rwanda; or to promote social entrepreneurship in Colombia. And if that were not a sufficient affront to the tradition of the inspired form-giver, this dramatic redirection implies that one does not have to *be* a designer to *think* like one.

The designers of Silicon Valley always rested upon a culture of technology, engineering and manufacture; in the early years, at least, this was the source of their clients, their tools, and their training. With the dawning of the new millennium, however, the manufacturing base had begun to migrate to the cheaper and less regulated Special Economic Zones of Asia, and many observers noted that California was devolving into a hollowed out, post-industrial shell. In other times and places the loss of the organic connection to manufacturing doomed the design field, but by this time “Designed in California” had acquired a meaning all its own. **B**

Notes

- ¹ Avrom Fleishman, “Design on the West Coast,” *Industrial Design*, 4 (1957), 49.
- ² Don Hoefler, *Electronics News*, in the first of three articles beginning on January 11, 1971.
- ³ Michael S. Malone, *The Big Score: The Billion Dollar Story of Silicon Valley* (New York: Doubleday, 1985), 68.
- ⁴ Alan Kay, “Microelectronics and the Personal Computer,” *Scientific American*, 237 (1977), 230–244.
- ⁵ Tim Brown and Barry Katz, *Change By Design: How Design Thinking Transforms Organizations and Inspires Innovation* (New York: Harper Collins, 2009).