

## Knowledge Review: Chronicling the Future by Jonathan Weber

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by Jonathan Weber

## Chronicling the Future

The swift pace of change makes understanding Silicon Valley a daunting task. Here are resources that can help.

Photograph © Schneider/Sipa Press

The mythology of Silicon Valley is as rich and dramatic as that of any religion, with towering man-gods, epic battles, and nothing less than the future of mankind at stake. In the beginning, there were the “Traitorous Eight,” who quit the transistor company founded amid the orange groves of Palo Alto by William Shockley and went on to give birth to the semiconductor industry. There were the obsessive and neurotic scientists and engineers, many working for the government, who invented the first computers, and then the Internet. There were the idealistic and sometimes messianic misfits who formed the early hobbyist circle known as the Homebrew Computer Club and ultimately developed the personal computer. And there were, later, the business and financial wizards (including Microsoft founders Paul Allen and Bill Gates, shown in the photo here) who turned these technologies into what a venture capitalist famously called “the greatest legal creation of wealth in the history of the planet.”

Yet for all the material here, or perhaps because of the very breadth

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and depth and complexity of the forces that created Silicon Valley and the technology world as we know it today, there is no Bible to describe the creation, no Talmud to lay out the rules of engagement, no accepted set of narratives to put everything in context. The literature of the technology era, rather, is a fractured oeuvre, diverse in its perspectives and focus, and surprisingly lacking in definitive texts. There are many writings, both historical and contemporary, but the diligent student has almost too much to choose from — the curse of information overload that these very technologies made possible.

I can say from personal experience that the New York-centric media industry, writers and editors and book publishers included, was slow to get its arms around the fact that something very important was happening in technology, in general, and in Silicon Valley, in particular. Until the 1980s, computers were mostly arcane, expensive tools for enterprise that were made by big, stodgy East Coast companies, and there was no reason any layman should be any more interested in them than they were in, say, the insurance business. It wasn't until

the early 1990s that the tech beat at newspapers and magazines was considered something other than a boring backwater — that's when I launched a *Los Angeles Times* section on the subject — and that may be one of the reasons the literature about the formative years of Silicon Valley is surprisingly scant. Since then, however, the opposite rule has generally applied: No alleged technological breakthrough is too small for the front page of the paper, no instant Internet millionaire is too insignificant for the celebrity treatment, and books about Silicon Valley pour forth (and then usually vanish without a trace). In fairness, the sheer speed of change adds another hazard to the always-daunting challenge of writing a good book. The main characters could be history by the time the book hits the streets, and it's often jarring to read the journalistic "rough draft of history" even a year or two later.

That said, there are a lot of great things to read out there, if you can figure out how to organize your approach. I find it useful to segment any study of Silicon Valley into a few distinct areas. There is, first of all, the history of computers and of the computer business, from its

origins in government, university, and corporate research labs in the 1940s and '50s, through its initial entrepreneurial emergence around Boston and elsewhere on the East Coast in the 1960s and '70s, to the full flowering of the PC revolution in Silicon Valley in the 1980s. Then there are the contemporaneous accounts of the key moments of that history — the rise of Microsoft, for example, or the fall of IBM, or the inflating and then bursting of the first Internet bubble. There are also what might be called the philosophical manifestos, as well as the management treatises and how-to books, that help define the way businesspeople think about the technology revolution and its implications. And finally there is the ongoing torrent of writings, in newspapers and magazines, on blogs, and, yes, even in books, about the Internet and its implications.

I've focused mostly on works by journalists and others who were there on the scene, as opposed to more academic treatments. Many of the books seem dated today, but the history is much more important than it might seem to be at first glance. Nearly everything that's happening in tech today has

antecedents and analogies from 10 and 20 and 30 years ago. And in such a young industry, there are still a lot of people who remember those formative moments well, and will hold it against you — maybe even use it against you — if you don't.

In a field dominated by journalists, any study of the history of Silicon Valley should start with a magazine article by perhaps the greatest literary journalist of our time, Tom Wolfe. In a 1983 *Esquire* piece called “The Tinkerings of Robert Noyce,” Wolfe offers a highly engaging profile of the charismatic founder of Intel and tells the story of the founding of the computer chip business. It's a terrific tale: A group of young geniuses, many still in their 20s, follow the great Bell Labs engineer and transistor inventor William Shockley to start Shockley Transistor. Soon frustrated with the controlling and self-centered leader, a group of them, led by Noyce, persuade a sleepy East Coast camera company to underwrite them, and dump Shockley to start Fairchild Semiconductor, which later gave birth to Intel, AMD, LSI Logic, and most of the rest of the chip business. In the style of *The Right Stuff*, Wolfe captures the spirit and culture of Noyce and his crowd in a way that's never been equaled, and is as good a read today as it was 25 years ago.

Although the semiconductor business emerged in the 1960s, its cultural roots stretch back to the '50s, when earnest Midwesterners and ambitious European immigrants worked on esoteric technologies that were, at first, primarily used to fight the Cold War. The personal computer, which was at the heart of the second great wave of Silicon Valley innovation, was cre-

ated mostly in the 1970s, but its ethic was very much of the '60s. When, as a reporter, I started covering Silicon Valley in 1990, one of the first things I read was *Fire in the Valley: The Making of the Personal Computer*, by Paul Freiberger and Michael Swaine. First published in 1984 and reissued and updated in 1999, it's a terrific account of the nerds and counterculture tech-heads who upended a computer culture defined by massive, multimillion-dollar mainframes and the starched-shirts corporations that made them or bought them. Here is Bill Gates, barely out of his teens, securing a deal to provide software he hadn't yet written for a hobbyist device that had no apparent purpose, and then lecturing others in the tiny club of tinkerers that software ought to be paid for. Here is Steve Wozniak, ever disheveled, playing practical jokes and having fun even as he designed the guts of the first great PC, the Apple II. Here is Doug Engelbart, an almost-forgotten hero, giving a 1968 demo of almost every important technology that defines the PC today. The hardcover collector's edition is worth its relatively steep price (\$95 and up on Amazon.com) for the pictures alone. It is a most refreshing reminder that not so long ago, Silicon Valley was not about the Series A funding and the big score — but rather about the big idea.

John Markoff, who was Freiberger's predecessor as technology writer at the *San Francisco Examiner* and has for years manned the high-tech beat for the *New York Times*, takes some of the themes of *Fire in the Valley* one step further in *What the Dormouse Said: How the 60s Counterculture Shaped the Personal Computer Industry*. As the

title suggests, Markoff argues that the birth of the PC was directly linked to the drug-fueled, antiwar spirit of the San Francisco Bay Area in the 1960s, and he focuses on Engelbart as its embodiment. The thesis is not entirely convincing, in part because it ignores the many important figures who were not part of the Bay Area counterculture. But the book is full of great stories, and on one large point Markoff is surely right: Creativity in technology, as in any other field, blossoms most spectacularly beyond the walls of large corporations and government bureaucracies.

The tension between corporate exigencies and the instincts of geniuses is at the heart of the legendary Xerox Palo Alto Research Center (PARC), which is in turn at the heart of any story about the birth of the modern technology business. The accepted wisdom about PARC is that Xerox blew it, big time. Having invented the graphical user interface, the mouse, hypertext, the laser printer, and the local area network, among other things, it failed to make a business out of them and instead watched as Apple, Microsoft, 3Com, Adobe, and others made many billions off its work. This point of view is encapsulated in *Fumbling the Future: How Xerox Invented, then Ignored, the First Personal Computer*, by Douglas K. Smith and Robert C. Alexander. But a more balanced account of what happened at PARC can be found in *Dealers of Lightning: Xerox PARC and the Dawn of the Computer Age*, by Los Angeles *Times* reporter Michael Hiltzik. A tremendously smart writer, Hiltzik argues that there is no way a big company like Xerox could have done much with its frighteningly produc-

# Chester Carlson stumbled onto the properties of xerography, but no mainstream company would touch it. Thus Xerox was born.

tive but impossible-to-manage band of brainiacs in Palo Alto.

Xerox, in fact, is the subject of one of the best narratives of invention and business triumph I've ever read, a surprisingly unheralded book by David Owen called *Copies in Seconds: Chester Carlson and the Birth of the Xerox Machine*. This is a singular story, detached in almost every way from the main currents of the technology world, and that's in part because Carlson found his breakthrough by deliberately looking where other people weren't. As a patent examiner, Carlson was acutely aware of the need for a machine that could easily make copies. He set out to find one, and eventually stumbled onto the unique properties of the element selenium, which conducts electricity only when light is shined on it, and from there developed the process known as xerography. No mainstream company would touch it — IBM famously hired A.D. Little to do a market study that concluded that only a few hundred of the machines could ever be sold — and Carlson finally hooked up with an obscure photographic paper firm called Haloid. The most entertaining bits concern Haloid's efforts to

bring the tricky technology to market, and Owen's writing far outshines what's typical for the genre.

The same can be said for Tracy Kidder and *The Soul of a New Machine*, which recounts just exactly what goes into building a major new computer system — in this case a Data General minicomputer. Written in 1981 to track a time, now nearly forgotten, when the minicomputer was all the rage, Kidder's book remains one of the best accounts of what it's like to be working inside a cutting-edge technology company.

Finally, for those who want to round out their knowledge of the origins of the contemporary tech business, there is *Where Wizards Stay Up Late: The Origins of the Internet*, by *New York Times* reporter Katie Hafner and her late husband, Matthew Lyon. Although some of the history is a bit arcane and keeping track of the various personalities can get tricky, you can't help but admire the dedication and ingenuity of the men who created the infrastructure that today we all take for granted. Among other things, the Internet was a great triumph of government-led innovation, which is easy to forget in an age when even

people who have made huge fortunes from the Internet routinely denigrate the public sector. (Hafner, incidentally, was once married to John Markoff; they collaborated on yet another book worth reading, *Cyberpunk: Outlaws and Hackers on the Computer Frontier*.)

## In Search of Drama

Contemporary writing about Silicon Valley focuses mostly on the business end of things, but when you browse the bookshelves, the collection of titles is surprisingly scant. The famous chronicles of Wall Street insanities — *Barbarians at the Gate*, *Den of Thieves*, *Liar's Poker*, and even, in fiction, *Bonfire of the Vanities* — are all still on the shelves at Barnes & Noble, but the great dramas of Silicon Valley are not much in evidence. My personal favorite of this genre remains 1998's *Burn Rate: How I Survived the Gold Rush Years on the Internet*, by Michael Wolff, a hilarious account of life inside the first Internet bubble (or, really, the pre-bubble of 1995–96 that set the stage for the great bubble of 1998–2000). In Wolff's telling, the startup culture consisted of the deluded leading the delusional, with predictably comic

results, and he pulls no punches in his portrayals of greedy-but-clueless venture capitalists (VCs), greedy-but-clueless CEOs (himself included), and too-clueless-to-be-greedy employees. Although many have questioned Wolff's technique of recounting "verbatim" conversations without the aid of notes, the book always rang true to me. And although the central joke — that the Internet was an industry without any income — may seem more than a little dated, the sketches still hold up.

A more substantive, if less amusing, tale of Internet startup adventures is Charles H. Ferguson's *High Stakes, No Prisoners: A Winner's Tale of Greed and Glory in the Internet Wars*, the author's story of how he conceived and launched Vermeer Technologies at the very start of the commercial Internet revolution, and then quickly sold it to Microsoft for a tidy \$130 million. Ferguson is very smart and insightful, and his analysis of software economics and industry dynamics is among the best I've seen anywhere. He also sticks to the first rule of this sort of memoir-cum-business-history: Don't bother if you're not ready to speak ill of the vanquished. His trashings of former Netscape CEO Jim Barksdale and former Apple Chairman John Sculley, among others, are delicious in their refusal to be polite, and they link the character of the people in power to the business problems of their companies with refreshing directness. And his accounts of his dealings with VCs and other elements of the startup experience are both entertaining and informative.

On the flip side, you certainly put the book down thinking, boy, I hope I never have to work with *that*

guy. I know Ferguson and he's actually much nicer than he seems in his book, where he comes across as arrogant and hotheaded, if almost always right. And I can only suspect that it was his tendency toward know-it-all-ness that led him to tack onto the end of the book three chapters of surprisingly banal ruminations and recommendations about antitrust policy and privacy and other big-picture Internet-era issues. He was a policy analyst and consultant before taking the plunge as an entrepreneur, so these chapters should have been better, but including them turned out to be an unfortunate choice: In making the case for a breakup of Microsoft, for example, he not only repeats much of what he already recounted in the narrative, but also shows that even he can be dead wrong about big, important issues on which he is an expert. With Google ascendant, nobody cares so much about Microsoft anymore.

And finally, consider an obscure gem that takes you inside the mind of one of the most brilliant but least-known figures in the modern computer business, John Walker's *The Autodesk File: Bits of History, Words of Experience*. A compilation of occasional "big-think" memos that Walker sent to collaborators at his Sausalito software firm, *The Autodesk File* contains amazingly well-written, real-time essays on the crucial issues facing a software startup. Walker, a recluse who moved to Switzerland many years ago, is not the most pleasant fellow: The one time I saw him in public, when he introduced Carol Bartz as the new Autodesk CEO, he engaged in a shouting match with a *Wall Street Journal* reporter and generally confirmed his reputation as a paranoid

misanthrope. But as a perceptive thinker and writer on the emerging technology business, he is at the top of the heap.

### The Power of Possibility

Perhaps because tech entrepreneurs tend to be idealists (whereas Wall Street machers tend to be cynics), some of the most influential writings about the modern technology business are paeans to opportunity and possibility, rather than dramatic accounts of mendacity and hubris. *The Cluetrain Manifesto: The End of Business as Usual*, written in 1999 by Rick Levine, Christopher Locke, Doc Searls, and David Weinberger and distributed online (and later as a book), is a set of 95 theses that suggest how businesses need to adapt to an interconnected world. Deliberately cast in revolutionary terms, it's perhaps the best exemplar of a certain way of thinking about the larger business meaning of the rise of the Web, and it remains influential today. In a similar spirit, an essay called "The Cathedral and the Bazaar," by Eric S. Raymond, published in 2001 in a collection with the same name, serves as a manifesto for the open source software movement and why it's often a better way of doing things. (See "The Ignorance of Crowds," by Nicholas G. Carr, *s+b*, Summer 2007.) Open source was a fringe movement when the piece was written, in 1997; however, it's anything but that today.

Although the inspirational literature tends to deride big, established companies for their conservatism, an influential 1997 book called *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*, by Harvard Business School Professor Clayton Christensen,

## Silicon Valley Resources

Works mentioned in this review.

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John Walker, editor, *The Autodesk File: Bits of History, Words of Experience* (New Riders, 1989), 538 pages

Rick Levine, Christopher Locke, Doc Searls, and David Weinberger, *The Cluetrain Manifesto: The End of Business as Usual* (Perseus, 2000), 212 pages

Eric S. Raymond, *The Cathedral and the Bazaar: Musings on Linux and Open Source by an Accidental Revolutionary* (O'Reilly Media, 2001), 256 pages

Clayton M. Christensen, *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail* (Harvard Business School Press, 1997), 276 pages

Andrew S. Grove, *Only the Paranoid Survive: How to Exploit the Crisis Points That Challenge Every Company and Career* (Currency Doubleday, 1996), 222 pages

takes a somewhat different view. The financial mechanics of large corporations essentially make it impossible for them to fundamentally change their products and strategies — or rather, those mechanics render such changes unwise. The chance that a new business will be as successful and profitable as a successful and profitable existing business is very small, and therefore capital expended on such new initiatives is not being used in an optimal fashion. Thus the dilemma is created, and it's one that corporate managers will face for the rest of their days.

There is a huge corpus of management literature about technology, entrepreneurship, and innovation. If you want to read just one book of this type, I recommend Andrew S. Grove's *Only the Paranoid Survive: How to Exploit the Crisis Points That Challenge Every Company and Career*. The former Intel CEO is a gifted writer; his memoir, *Swimming Across*, has nothing to do with technology but is a wonderful book, and his management theories come from front-line experience. As an entrepreneur, I don't have much use for advice from people who have never been

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entrepreneurs. But I'll listen to Andy Grove any day.

## Best of the Blogs

Now that you have all that history under your belt, what should you have on your daily reading list? For starters, you should read a handful of blogs, if for no other reason than everyone else in the tech business is reading them. Michael Arrington's Techcrunch has become the dominant referee of what's hot among new tech companies, and Rafat Ali's Paid Content is the comprehensive source for what's happening *today* in the most dynamic sector, the Internet media business. BuzzMachine, by Jeff Jarvis, is my favorite read among the new media blogs: A veteran editor and journalist, Jarvis has drunk the Kool-Aid in a serious way and campaigns hard against business-as-usual in the journalism business and in favor of newfangled forms of "people media." If telecom's your thing, read Om Malik's GigaOM or the trade journal *Light Reading*. For all things search-related, there's John Battelle's Searchblog (his 2005 book about Google and the search economy, *The Search*, is the best of that breed), and Danny Sullivan's SearchEngineWatch.

Then there is the new and interesting genre of venture capital blogs. Fred Wilson of Union Square Ventures, Brad Feld of Foundry Group, Bill Burnham of Inductive Capital, and Paul Kedrosky of Ventures West are some of the leading practitioners; you can browse them at the FeedBurner Venture Capital network. Mark Cuban, who made a fortune selling his Web 1.0 company, Broadcast.com, to Yahoo, and is now a new media investor and owner of the Dallas Mavericks basketball team, is always stirring things up and getting attention on his Blogmaverick. If you want gossip, try Valleywag, the Silicon Valley arm of Nick Denton's Gawker Media. Denton himself was writing it for a while, which was great, but its future will depend on the skill of his replacement. And for an interesting window into what tech-culture aficionados (and cubicle time killers) find compelling, read BoingBoing. The four people who write it, Mark Frauenfelder, Xeni Jardin, David Pescovitz, and Cory Doctorow, are all clever and knowledgeable, and you're almost guaranteed to learn something interesting that you didn't know before.

There's a lot of good stuff out

there in the "old media," as well. Walter Mossberg of the *Wall Street Journal* remains the single most powerful arbiter of consumer technology products, with David Pogue of the *New York Times* not far behind. (Pogue has also pioneered a popular video blog on the subject.) Heather Green of *Business Week* is very knowledgeable and offers insight both in the magazine and on the *Business Week* "blogspotting" blog. David Kirkpatrick at *Fortune* is also a skilled veteran who brings a lot of authority to his work, and John Markoff remains the go-to guy in mainstream media, especially on some of the more technical topics.

The biggest challenge in reading tech news day-to-day, of course, is figuring out what's really significant and what will be irrelevant a year from now. The plethora of choices makes this harder in some ways: The job of the old-school editor was mainly to tell you what was important. But they were often wrong — predicting the future is a tough business — and now with the proliferation of choices, you can make a lot more editorial judgments for yourself. Let me know in a year or two how that's working out. +

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