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The narrative of the Silicon Valley generation that launched five major high-tech industries in seven years, laying the foundation for today's technology-driven world.

At a time when the five most valuable companies on the planet are high-tech firms and nearly half of Americans say they cannot live without their cell phones, *Troublemakers* reveals the untold story of how we got here. This is the gripping tale of seven exceptional men and women, pioneers of Silicon Valley in the 1970s and early 1980s. Together, they worked across generations, industries, and companies to bring technology from Pentagon offices and university laboratories to the rest of us. In doing so, they changed the world.

In *Troublemakers,* historian Leslie Berlin introduces the people and stories behind the birth of the Internet and the microprocessor, as well as Apple, Atari, Genentech, Xerox PARC, ROLM, ASK, and the iconic venture capital firms Sequoia Capital and Kleiner Perkins Caufield & Byers. In the space of only seven years and thirty-five miles, five major industries—personal computing, video games, biotechnology, modern venture capital, and advanced semiconductor logic—were born.

During these same years, the first ARPANET transmission came into a Stanford lab, the university began licensing faculty innovations to businesses, and the Silicon Valley tech community began mobilizing to develop the lobbying clout and influence that have become critical components of modern American politics. In other words, these were the years when one of the most powerful pillars of our modern innovation and political systems was first erected.

Featured among well-known Silicon Valley innovators like Steve Jobs, Regis McKenna, Larry Ellison, and Don Valentine are Mike Markkula, the underappreciated chairman of Apple who owned one-third of the company; Bob Taylor, who kick-started the Arpanet and masterminded the personal computer; software entrepreneur Sandra Kurtzig, the first woman to take a technology company public; Bob Swanson, the cofounder of Genentech; Al Alcorn, the Atari engineer behind the first wildly successful video game; Fawn Alvarez, who rose from an assembler on a factory line to the executive suite; and Niels Reimers, the Stanford administrator who changed how university innovations reach the public. Together, these troublemakers rewrote the rules and invented the future.

Troublemakers: Silicon Valley's Coming of Age Details

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From Reader Review Troublemakers: Silicon Valley's Coming of Age for online ebook

Julie says

Fantastic discussion of early Silicon Valley through the perspectives of key (but generally not-well-known) players. It was really engaging and I wanted to know more. Will read anything Leslie Berlin writes!

Dan Watts says

This book is mistitled: it should have the less catchy name "People Who Deserve to be Better Known". Aside from Robert Taylor, none of them made much trouble, and some of them make for dull reading. The book makes a noble effort to feature some women in the early history of Silicon Valley, but frankly there weren't many women weren't given major roles in the industry back then so there isn't much to write about.

Frank Stein says

This is a detailed and intricate look at some of the lesser known lights of Silicon Valley, who, from the late 1960s to the early 1980s, transformed a region based on building industrial hardware into one focused on designing home computers and software. As the author shows, a few people's personalities were important in this transformation.

Bob Taylor started off inside the Pentagon as a profound believer in the possibilities of "The Computer as a Communication Device," as his hero and predecessor J.C.R. Licklider called it. At the Pentagon's Advanced Research Project Agency, he extracted funds to market this belief, supporting, for instance, the "mother of all demos," by Douglas Engelbert in 1968, which showed what graphical user interfaces and a "mouse" could do for a computer. At the same time, Taylor funded the ARPANET, the first internet to connect different computers together across the country. Later, disgusted with the Vietnam War, he headed West to head up the computer group at Xerox PARC, where he helped build out these ideas into a working "microcomputer."

Al Alcorn was the technical mastermind behind Atari, the company which was also propelled into fame by Nolan Bushnell's genius and drive. When Bushnell told Alcorn that he had to build a ping-pong video game for a General Electric contract, Alcorn did, only to learn that Bushnell had lied about the contract but was ecstatic about the game. When they set it up in a local bar and observed locals shoving quarters in it until the latch broke, they knew they had a hit. Later, however, Bushnell's partying ways led his new overload Warner Communications to remove him and his crowd from the company, and gradually drained it of funds for future research.

Mike Markkula was a marketer who made a fortune on his stock in Intel and then met a young Steve Jobs and Steve Wozniak when they were constructing their first computer in a garage. He joined the company, Apple, and gave it the business discipline and savvy it needed. Neil Reimers was an engineer and contract administrator at Stanford who came up with the idea of creating a special patent office for university inventions, and also the idea to consult with businesses before patenting to see if these patents could make money. He later worked with Stanley Cohen at Stanford and Herb Boyer at UC San Francisco to patent

recombinant DNA technology, create the first synthetic insulin, and thus spawn Genentech, the first biotechnology company.

There are a few lesser known companies and names here, and far, far too many details about all of them, but the book does do a wonderful job examining the original business practices that get lost in the usual story of technological innovation. Everyone from Markkula and Reimers to Taylor and the software engineer Sandra Kurtzig ("mother of Silicon Valley," founder of ASK software), understood that marketing was essential in convincing wary suppliers and customers to invest in original products. They understood the need for both discipline and freedom, and, of course, liberal stock options, to incentivize engineers to new heights. They understood that finding low cost fixes that could be mass produced was better than tinkering with a perfect design. On the whole, this book is an original look at the forgotten people, and processes, that created the most innovative region in the world.

Pere says

I enjoyed reading this book and learning about tech legends like Xerox PARC, Atari and Apple. I learnt about other legends, whixh I had no clue about. The book is surprisingly catchy, didn't expect that. Totally recommended!

Bill says

I bought this book when I attended a talk by the author at the Commonwealth Club. She presented a lot of interesting photos and luckily they all made it into the book in two color plate sections. Lots of funny 70s fashions and oversized beige computers.

This book covers a lot of ground for its length and the wise structure of devoting a chapter to each individual during the same era kept the pace fast. Berlin chose a very interesting cross-section of individuals to profiles. In particular, Sandra Kurtzig as the founder of ASK Software was particularly relevant to today's Valley as she was an outsider for being a women CEO in tech and her struggles to make software a first-class product in an era that favored hardware.

Berlin found lots of treasures in the sources and includes lots of interesting footnote asides that I found fascinating. She was able to make insider tech and business topics accessible. And the fact I could keep all the (largely white male) names separate is a testament to the clarity of her writing.

I'd highly recommend this for readers interested in the history of the Bay Area. So much of what's here now can be traced to what came before. I feel like I learned a lot of new info from this book and now I'd be more likely to read a dedicated book to one of the companies or founders after feeling like I have an idea of the landscape and context they were operating in.

Angela says

In 1968, a little-read article in a soon-to-fail magazine prophesied an age of networked machines that could be more than passive, oversized calculators to become digital partners in solving problems alongside

humans.

"In a few years, men will be able to communicate more effectively through a machine than face to face," wrote JCR "Lick" Licklider and Bob Taylor, in a Science and Technology article called "The Computer is a Communication Device." The men worked together at the Pentagon during the early days of the Arpanet, the precursor to the Internet. In the paper, they predicted that society "will spend much more time in computer-facilitated teleconferences and much less en route to meetings."

Whether our communication is more effective today is still up for debate, but there's no doubt how the Internet, personal computing, and other technologies have changed the way we live. How we got here from there is the theme of Leslie Berlin's "Troublemakers: Silicon Valley's Coming of Age."

The book, more or less, marks the 50th anniversary of the birth of what we now call Silicon Valley. Berlin, project historian of the Silicon Valley Archives at Stanford University, focuses on the period between the late 1960s and 1984, when a 35-mile patch of California farmland—home to a smattering of defense-based manufacturers and plum and apricot orchards—began to become the birthplace of modern-day tech innovation.

Berlin writes about a group of engineers, scientists, marketers, and others, who she says "invented the future." These include Taylor, who had a hand in developing the Internet, the mouse, and the personal computer at PARC, Xerox's legendary R&D division in California. Yes, we know all about Steve Jobs, so Berlin shines her spotlight on another seminal figure: Apple's first chairman, Mike Markkula, who actually had an equal ownership stake with Jobs and Apple co-founder Steve Wozniak.

Other chapters focus on the founding of the modern-day venture capital industry, the birth of biotech and gene therapies, and how Stanford set up the gold standard on university IP licensing, a bar that even today most institutions wish they could meet. "Troublemakers" also chronicles the creation, success, and ultimate flameout of video-game maker Atari, whose games have become one of the best-known pop culture symbols of the 1980s.

The Atari story also illustrates another legacy of those early days: the free-wheeling, rule-breaking "brotastic" company culture—from which you can draw a direct line to Uber's meltdown, the Google manifesto, and other industry #metoo moments—that has since soured. ... For more of the review, please click here: https://www.xconomy.com/national/2018...

Mohammad Al-ubaydli says

If, like me, you are love with the technology industry, you will love this book and you will find many surprising stories. The author does a wonderful job of going beyond the obvious cheerleading.

I will focus this review on some surprises.

First it is surprising how recent some laws were.
1. Women could not work overtime before 1984 in California. So they could not earn higher overtime hourly rate, unlike their male coworkers.
2. People could not buy Apple IPO shares in Massachusetts because the state only allowed buying companies where the valuation was less than 5x book value. That would rule out the biggest and fastest technology

companies today.

3. Atari arcade machines were not legal New York and Chicago because video game machines counted as pinball machines and pinball machines were not legal.

On the other side key legislation to enable high technology companies came about in the 1980s:

1. Capital gains tax was halved from previously matching income tax rate of 45%.

2. Pension funds were allowed to invest in risky assets ie venture capital funds. VCs were able to raise orders of magnitude more money and channel it into fast tracking disruptive innovators.

3. Bayh-Dole private recipients of public funding to patent invention and innovations from the funding.

4. Biotechnology techniques and genome sequences were made patentable, including fundamental techniques invented over many years by many scientists

Big companies make smart decisions that looks like stupid decisions from the perspective of innovators

1. Xerox is often derided for frittering away the innovations it had funded at the Xerox PARC lab. But Xerox made all its money back and more from the laser printer, invented at PARC.

2. IBM is often accused of having handed over its monopoly to Microsoft and its dominance to 100s of PC manufacturers by making its PCs an open hardware standard, open to any operating system. But the PC's crushing defeat of Apple's first-mover advantage was only possible because of these decisions, and IBM made a lot of money very quickly from its own PCs.

3. Warner bought and bankrupted Atari by not halting all investment in innovations and focusing on sales and marketing. But it made plenty of money from Atari just by bringing onboard Steven Spielberg to create an Atari game, which then pulled him to continue making highly profitable movies for the studio.

It is an extraordinary time to recount: even as the world was in crisis and stagflation, the innovators she picked out - each rarely reported on - was going through incredible journeys. It's a pleasure to read.

Matt says

A punchy collection of profiles of some of the lesser-known personalities who fostered the genesis and early growth of various sectors of the high-tech economy, including bio-tech, personal computing, and the internet itself. Berlin's interview-based material goes well beyond the "2 guys in a garage" stories of Silicon Valley entrepreneurship, with female founders and university administrators highlighted along with better-known archetypes.

Insightful and highly relevant. The reason I didn't rate it higher is only that I found it tough to keep momentum, with so many different characters coming in and out of focus over two decades of time.

Herve says

Leslie Berlin strikes again with Troublemakers! I had read a few years ago the great The Man Behind the Microchip by Leslie Berlin. After the biography of Robert Noyce, one of Intel's cofounders, Berlin comes now with Troublemakers, a description of "How Generation of Silicon Valley Upstarts Invented the Future". The title is a reference to a famous Apple advertisement: The crazy ones. The misfits. The rebels. The troublemakers. One of the great merits of the book is to focus on 7 individuals (2 women and 5 men) which are relatively unknown compared to the stars of Silicon Valley. The book is not only great storytelling. It

describes the dynamics of Silicon Valley from the late 60s to the early 80s and how "five major industries — personal computing, video games, biotechnology, modern venture capital, and advanced semiconductor logic — were born". The close-to-400 page book also has more than 80 pages of rich notes. It is really a must read for anyone passionate or just interested in Silicon Valley. Here are a few quotes:

"Indiana Jones: I'm going after that truck.

Sallah: How?

Indiana Jones: I don't know. I'm making this up as I go."

or

"We didn't want to be considered part of the flock. Eagles don't flock, was our joke." (Tom Perkins when asked why KP was not initially on Sand Hill Road – Page 192)

Let me make a parenthesis as a conclusion. While reading this book, I read a very interesting article in the FT entitled Silicon Valley's founder factory 'Silicon Valley is lacking in one core area?—?a sense of entrepreneurial hustle' (Leslie Hook – Jan 2018): "When I moved to San Francisco four years ago, I noticed something odd about the start-up founders I met: many of them resembled each other. Not just physically, though most were men under 35. But also in the way they spoke about their companies. They had PowerPoints at the ready, and big numbers on the tips of their tongues. Everyone seemed to know exactly what the total addressable market of their start-up was, even if they hadn't yet made a single dollar of sales. […] By contrast, while there are a lot of founders in Silicon Valley, I have found relatively few entrepreneurs. The founders are smart and hard-working. But many are simply products of a system, which is why they all seem vaguely the same." Interesting food for thought in comparison to the 70s…

Ann Bridges says

For those of us who came along behind this generation of entrepreneurs, Leslie Berlin fills in the gaps between the lore and the facts. Names I'd heard about (and a few people I briefly met) come alive in this tale of how Silicon Valley's biggest names got their start.

Mal Warwick says

Any casual reader whose knowledge about Silicon Valley comes from the headlines or the news online might get the impression that Steve Jobs and the Google and Facebook guys invented the place. Obviously, this is far from true. But even more serious coverage tends to focus on a handful of high-profile individuals who have played outsize roles in the development of the high-tech industry. Stanford historian Leslie Berlin sets the record straight with her engrossing new book, Troublemakers: Silicon Valley's Coming of Age.

Troublemakers chronicles a critical period in the Valley's history (1969-76). Those seven years witnessed "the most significant and diverse burst of technological innovation of the past 150 years . . . Five major industries were born: personal computing, video games, advanced semiconductor logic, modern venture capital, and biotechnology."

"Innovation is a team sport," Berlin writes in the introduction to her book. She makes clear that her intention is to tell the stories of more than just the usual suspects. "Troublemakers . . . feature[s] some of the most famous names in Silicon Valley history, while also profiling seven other individuals in depth." More famous people such as Steve Jobs and Larry Page make brief appearances. Berlin's account highlights:

Bob Taylor, who led the creation of the rudimentary computer network at the Pentagon, in a sense "inventing" the Internet;

Mike Markkula, the man who made it possible for Steve Jobs and Steve Wozniak to launch and build Apple;

Sandra Kurtzig, a software pioneer who was "the first woman to take a technology company public;"

Bob Swanson, a cofounder of Genentech;

Al Alcorn, who designed the video game Pong that launched the game giant Atari; and

Niels Riemer, the man who patented recombinant DNA for Stanford University, thus kickstarting the biotech industry.

Every one of these seven people could be the subject of their own biography. Berlin brings their stories to life through one-on-one interviews—all but Bob Swanson are still alive—while placing their accomplishments into the context of their time and place. As a professional historian specializing in this region—Berlin is Project Historian for the Silicon Valley Archives at Stanford University—she deftly meshes personal accounts by her subjects with extensive archival research.

To my mind, the most impressive of these seven individuals is Bob Taylor. As a key player at ARPA (the Pentagon's Advanced Research Projects Agency, now called DARPA) in the 1960s, he helped lay the foundation for the Internet. Later, in the 1970s, as the director of computer science research at Xerox's PARC (Palo Alto Research Center), he assembled what was widely considered the most talented group of computer scientists anywhere in the world—and possibly the most talented ever brought together anywhere. These extraordinary men (and a handful of women) created the Alto, the world's first personal computer with a graphic user interface (GUI), mouse, windows, and networking ability. It's astonishing to most observers that the Xerox Corporation failed to commercialize the Alto. Only years later did Apple's Macintosh begin to approach the capabilities of the Alto. (A former key player at PARC thought of the early Mac as a toy.)

Rayme says

I was lucky enough to read an ARC of this book and would highly recommend it to anyone wanting to understand the history of the Silicon Valley. It's not the same old story of Jobs and the usual subjects but goes back a bit further including a cast of characters in software, hardware, biotech, venture, etc., when the Valley was just taking off. Ms Berlin, head of the technology archive at Stanford, is an airtight researcher and it shows through in her prose--engaging but not sloppy--footnoted and fact-checked which is important in our era of made up history and alternative facts. Troublemakers is the real deal.

Brad says

This history highlights the unsung heroes of Silicon Valley, and rightly so. while the book mentions the likes of Steve Jobs, Steve Wozniak, and even some modern-day tech start-up whizzes like Sergey Brin and Larry Page (Google), along with Facebook founder, Mark Zuckerberg, they get mere passing references in this treatise on the roots of the Silicon Valley boom.

Here, among the true plough horses pulling their own weight, and then some, are the likes of Mike Markkula, initial capital investor in Apple, Sandy Kurtzig, CEO of software producer ASK, and Bob Taylor, head of Xerox PARC laboratory, among others. While the contributions of the major names of Silicon Valley are not to be diminished, they should also not be promoted at the expense of these little-known names. That seems to be the premise of this writing. If asked, most of the general public would not know

these names unless already on the inside in the early days of the industry. But their contributions are given their due here.

Leslie Berlin seems to weave a fabric which, at the beginning, you can't see what it's going to look like or where it's going, but using bits and pieces at a time of each individual story create a complete narrative and picture of the foundational columns of our tech industry today. These are the plodders, but plodders who received little of the glory while playing an integral part in each of their respective fields. You find out where the beginning stages of the internet developed (ARPANET), how XEROX was integral to the development of Apple Computers, how having the right steady hand at the helm of certain companies proved essential and, conversely, how the wrong leader along with a flawed corporate culture could have devastating effects.

But the lessons are countless, and the value it could provide any aspiring entrepreneurs immeasurable. It's a kind of general roadmap for the uninitiated in the world of start-ups. It's an entertaining read along with being informative. And while her writing style seems more than up to the task, it's the bevy of facts and figures that sometimes seemed to get in the way of the story for me. And, to be fair, maybe that's just a problem inherent to telling a story of this type.

Whether you find this read entertaining depends somewhat on your interest in the field. Any tech geek will probably love it. No doubt, you will find information and facts here that you hadn't known before. You could say it fills in the cracks where other biographies and histories of the technology industry have missed. But while giving an understanding of those who missed out on the glory, it also speaks in a broader sense to the intestinal fortitude required to forge your name in the history books, even if those names might end up in small caps.

William says

What a good book. History is people's stories and Berlin chose her people well. These fantastic stories start when there were zero personal computers in the world, when there were no software companies, no video games, and no bio-technology. Even the words that would define these industries had not been invented. Every computer user, businessman, manager, and entrepreneur will enjoy the book. It reads quickly. Almost like a serial. You can hardly wait to hear what happens next. You'll love it.

Katie/Doing Dewey says

Until I picked up this book, I didn't realize how much context I was missing in the previous book! While Valley of Genius was an amazing resource, it focused on a few key people for each company or notable event it covered. This book told the story of the origins of silicon valley as a more cohesive narrative. The author included more of the people involved in each story and did a better job situating these stories relative to what was happening in the rest of the world. I think she was able to do this in part by focusing on fewer stories over a shorter time frame. She also added a few stories I really enjoyed though, including a story about the founding of the biotech industry; a story about the first woman to take a company public; and the story of a woman who started her career on the assembly line and ended it as a marketing exec. This variety of stories, not all focused on the founders of the big tech companies, gave me a broader view of how companies in silicon valley work.

I have two more books on silicon valley that I'll be reviewing later, but I can already say that I'd most highly recommend pairing Valley of Genius with The Troublemakers if you want the best history of the valley. Between the two, they cover a ton of key moments from both a personal and a broader social perspective. They complement each other perfectly.This review was originally posted on Doing Dewey