A Brief History of Silicon Valley

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Introduction

Silicon Valley is about 25 miles long and 10 miles wide, and is approximately 45 miles southeast of San Francisco.

It has the University of Stanford at its centre.

The original companies that have grown up here are all based in one way or another upon the semiconductor which gave rise to a new name for the area: "Silicon Valley".
It is not just a place, it’s a legend

Don Hoefler is credited with coining the phrase Silicon Valley in 1975. Its roll of honour includes:

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<th>Apple</th>
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To understand Silicon Valley, it helps to know how it came about.
Silicon Valley Milestones

• 1891—Stanford University was founded by Governor Leland and Jane Stanford.

• 1903—Valdemar Poulsen demonstrates the first arc radio transmitter for high-quality voice transmission in his Palo Alto laboratory. He later invents the first practical device for magnetic sound recording and reproduction.

• 1912—Lee de Forest invents the vacuum tube amplifier in Palo Alto. His “audion” became the foundation for radio, radar, television, computers, and the electronics age. Stanford faculty and officials helped finance the work, the first of many cooperative partnerships between higher education and Silicon Valley.
Silicon Valley Milestones

• **1930’s**—**Professor Frederick Terman** is recruited by Stanford University and starts a lifelong promotion of the benefits of the Valley. Later, Terman becomes known as the father of Silicon Valley.

• **1937**—Encouraged by Terman, **William Hewlett** and **David Packard** start a company to produce their audio-oscillator. Walt Disney becomes their first customer, purchasing the product for use on the film Fantasia.

• **1937**—Stanford professor William Hansen teams with brothers Sigurd and Russell Varian to develop the klystron tube. Their work continues through WWII and leads to the development of radar and the 1948 founding of **Varian Associates**.

• **1946**—The **Stanford Research Institute** is founded to support non-profit research.
Siicon Valley Milestones

- **1951**—Stanford Industrial Park is established as a “center of high technology close to a cooperative university.” Varian Associates, General Electric, and Eastman Kodak sign the first leases.

- **1952**—IBM locates a key research facility to the valley.

Silicon Valley Milestones

- **1956**—Dr. William Shockley founds **Shockley Transistor Corporation** to produce semiconductor-based transistors to replace unreliable vacuum tubes. Early employees read like a who’s who of the high-technology future.

- **1958**—Robert Noyce, Gordon Moore, and six other engineers from Shockley Transistor found **Fairchild Semiconductor**, the first company to mass produce integrated circuits.

- **1958**—**NASA** moves a research facility to the valley.

- **1968**—Douglas Engelbart and team at the Stanford Research Institute (now SRI International) give first public demonstration of the **computer mouse, windows, and networking**.

- **1968**—Robert Noyce (pictured left) and Gordon Moore (Moore’s Law) create **Intel**.

- **1970**—Intel introduces **first 1k DRAM chip**.
Silicon Valley Milestones

- **1971**—Alan Shugart invents the **floppy disk** for data storage.
- **1973**—Intel introduces **8008 CPU** and ushers in the new era of the microprocessor.
- **1973**—Stanley N. Cohen of Stanford University and Herbert W. Boyer of UC San Francisco invent a technique for splicing **genes**, leading to the formation of the biotech industry.
- **1974**—Development of the **Graphical User Interface (GUI)** at the Xerox Palo Alto Research Center (PARC) led to the intuitive design of Apple's Macintosh computer and Microsoft Windows.
- **1975**—The **Homebrew Computer Club** is founded to experiment with home computers.
- **1976**—Homebrew founder Steve Wozniak teams with Steve Jobs to form **Apple Computer** and build the first microcomputer in Jobs' garage in Cupertino.

Steve Wozniak and Steve Jobs with early Apple computers

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Silicon Valley Milestones

- **1970's**—Relational database technology invented at IBM's Almaden Research Centre.
- **1982**—The Stanford University Network is the catalyst behind the founding of Sun Microsystems. Silicon Graphics uses the same network chips to create its first graphic workstations.
- **1984**—Cisco Systems is founded by Leonard Bosack and Sandra Lerner (top left)
- **1989**—Don Eigler (bottom right) a researcher at IBM’s Almaden Research Centre, uses nanotechnology to spell “IBM” with 35 xenon atoms.
Silicon Valley Milestones

• 1993—Stanford Professor Jim Clark hires web browser pioneer Mark Andreesen to found Mosaic Communications, predecessor to Netscape Communications Corporation and the browser that made the Internet an everyday tool.
• 1994—Jerry Yang and David Filo start a directory of websites that explodes into Yahoo!
• 1995—Netscape IPO at $28 per share went to $75 at close valuing it at $3bn.
• 1999—Kleiner Perkins and Sequoia agree to co-invest in Google at $12.5m each.
• 2003—Google purchases Pyra Labs to support blogs, today’s online community forums.
• 2006—Google buys 15 month old YouTube for $1.6bn.
• 2007—29th June Apple launch iPhone.
More history to come

• In Michael Mandel’s 2000 book “Coming Internet Depression: Why the High-Tech Boom Will Go Bust, Why the Crash Will Be Worse Than You Think, and How to Prosper Afterwards” he believes this depression will be significantly worse than the dotcom crash.

• In the short term, I predict the restless and relentless innovation entrepreneurial spirit will temporarily be obscured with stories of company failures and job cuts.

• Even in a depression, bright and adventurous people will be drawn to Silicon Valley, to graduate from Stanford, to start-up in garages, to want to change the world.

• As a result, we are not witnessing the end of the story. There will be further historic invention and company creation in the future to add to the 70 years of history in Silicon Valley.
Acknowledgements

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Master Keith Arundale presenting the 2007 Mais Bursary to Nick Milner at the Fishmongers Hall, October 2007

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