

# Silicon Valley Creating a Technopolis

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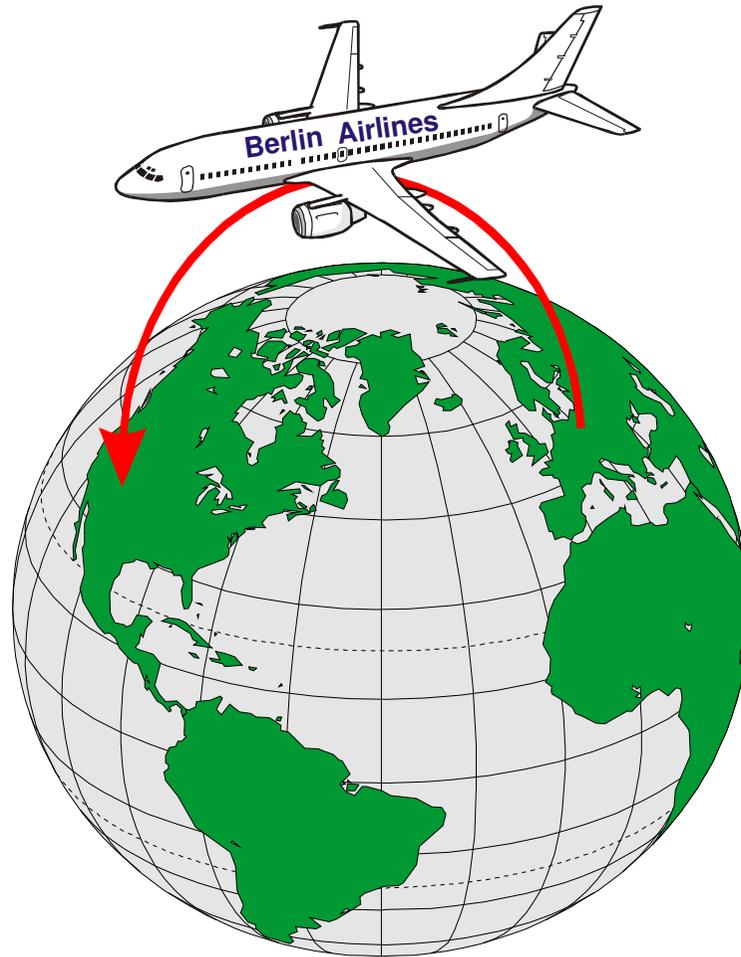


# *Centers of Entrepreneurship*





## *Our Today's Excursion*





# The Silicon Valley



An 80 km long corridor between

San Francisco

and

San Jose...





## *The Silicon Valley (continued)*

- ... packed with over 10,000 electronic- und software companies and thousands of startups in about 30 cities.



Some of the Silicon Valley companies



# The Silicon Valley (continued)





## *Brief History*

### **1930's**

Professor Frederick E. Terman, Dean of Engineering at Stanford University, promotes entrepreneurship in his courses and encourages pursuance of engineering excellence.



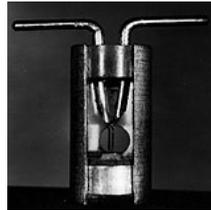
Two of his students, William Hewlett and David Packard, came up with an idea of audio-oscillator, a product which meant birth of a new startup - Hewlett-Packard, the world's second largest computer company, today.





## History (2)

**1950's**



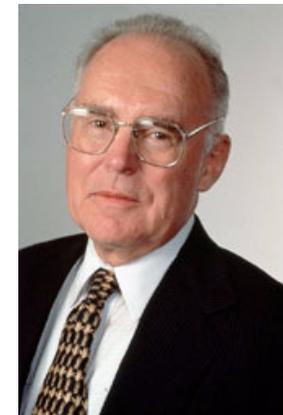
William Shockley founds Shockley-Semiconductor Labs and becomes a lecturer and later professor at the Stanford University.



**1960's**



Eight engineers, among them Robert N. Noyce and Gordon E. Moore, leave Shockley-Semiconductor Labs and found Fairchild Semiconductor Corporation. Later, Noyce and Moore start





## History (3)

### 1970's



Steve Jobs and  
Wozniak found  
Apple Computer Inc.



Steve



### Early 80's

Boom in Silicon Valley





## History (4)

**1985/86**

Breakdown of the computer industry: Silicon Valley transforms into a Valley of Death



**1988-2000**

Exponential growth

**Since 2000**

Decline and slow return to normality

**2008**

Financial sector's recklessness cuts the stock values of most companies in half

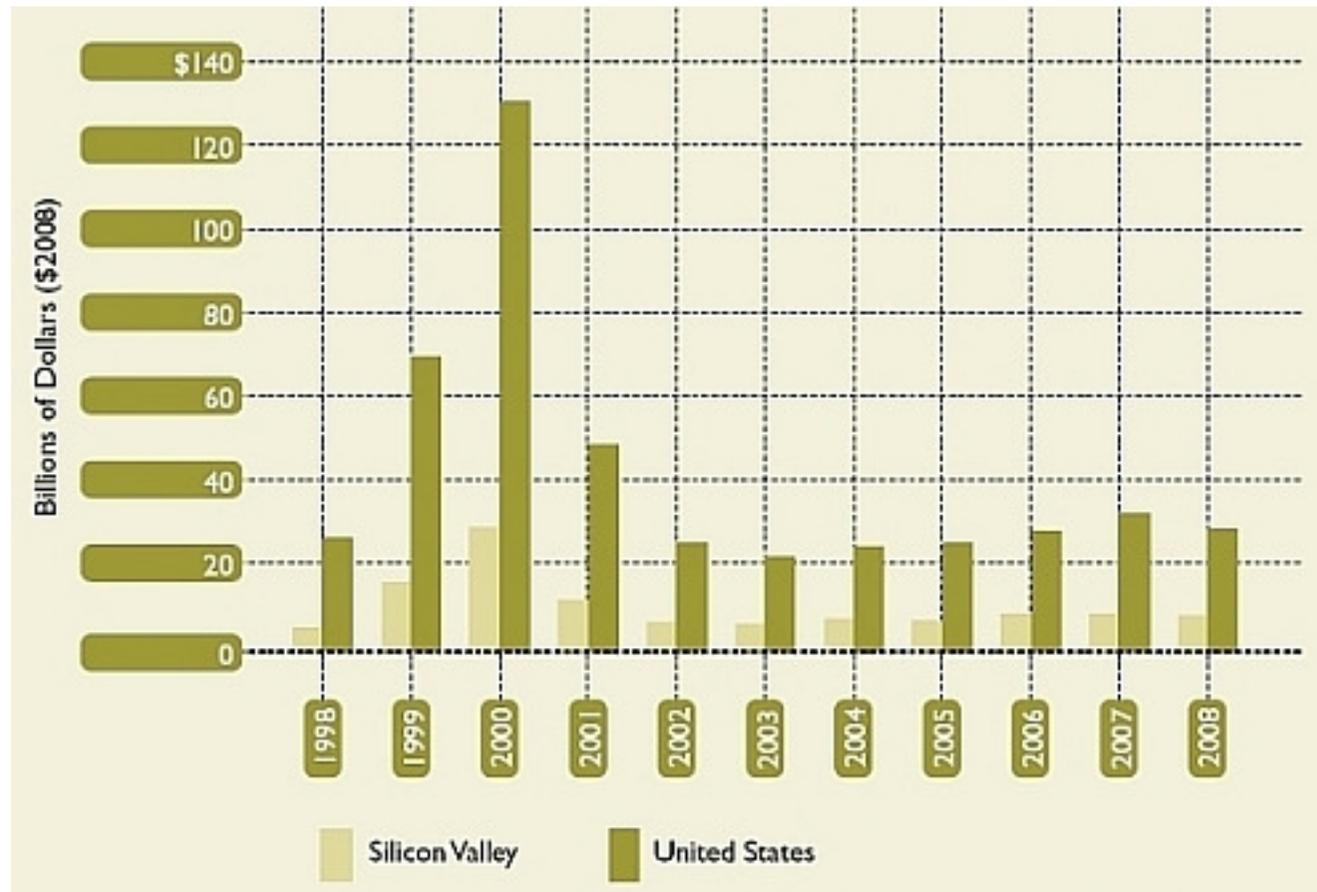


## *Statistics*

- Over 10,000 electronic- and software, biotechnology companies
- Thousands of startups - about 1,000 a year in 1997-2000 (Initial Public Offering (IPO) every five days, over one trillion dollar valuation in March 2000, about \$450B in 2001 then back to about a trillion and after that down to \$700B in Dec 2008).
- About 20 of 100 world's largest electronic and software companies originate from Silicon Valley
- 11% of all U.S. high-tech jobs are in the Valley
- Average salaries are much higher than the US average
- 29% of the U.S. Venture Capital was invested in Silicon Valley  
( 2009, \$ 7 B)
- Home to 2.43 million residents with a total workforce of 1.5 million;  
25 % of them are employed in high-tech industry  
(unemployment rate 2009: 11.8%)



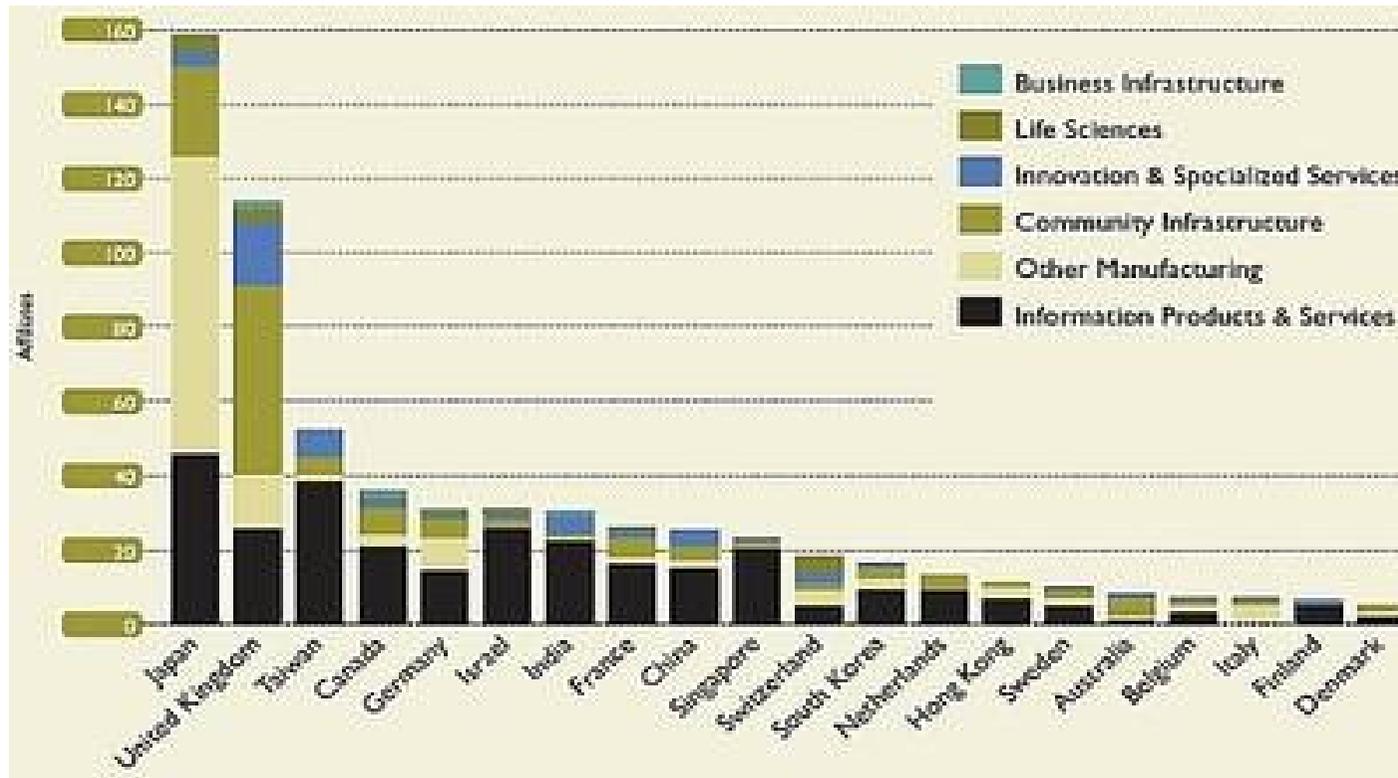
## Venture Capital- Investments (2008)



Source: [www.kooperation-international.de](http://www.kooperation-international.de)



## Joint Venture: Silicon Valley Network



Source: [www.kooperation-international.de](http://www.kooperation-international.de)



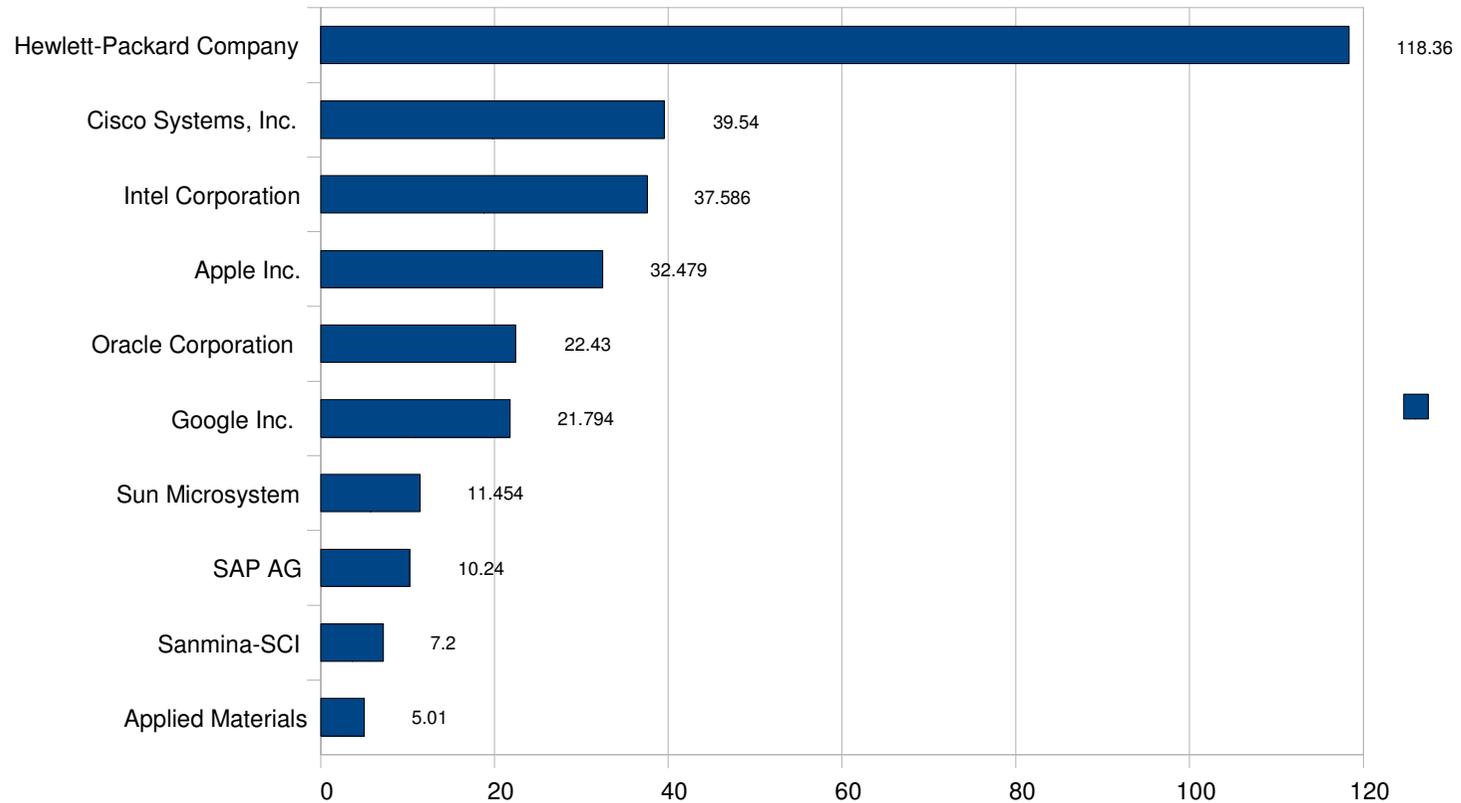
## Top Eleven Companies

Company	Sales (2005) US \$ B's
 Hewlett-Packard Company	87.901
 Intel Corporation	38.826
 Cisco Systems, Inc.	25.946
 Apple Computer Inc.	16.190
 Oracle Corporation	13.408
 Sun Microsystems, Inc.	11.664
 Sunmina-SCI	11.343
 Calpine--2	10.056
 Solectron	9.950
 Applied Materials	7.068
 Google	6.138



# Top 10 Companies

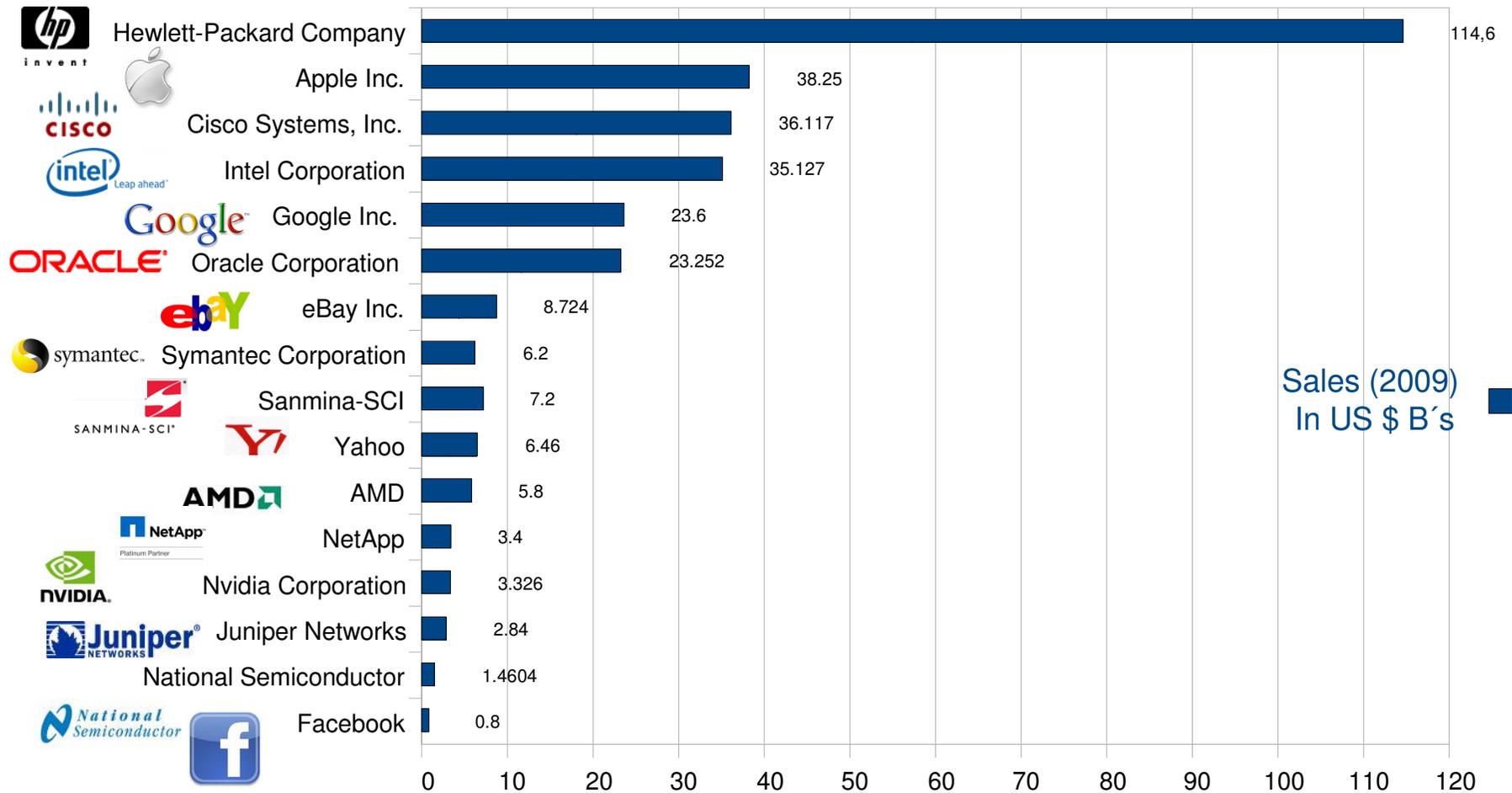
## Companies Sales (2008) US \$ B 's





# Top Companies 2009

## Companies





## *Capturing the Market*

Silicon Valley has achieved in some areas almost a monopolistic status:

- Distributed Databases
- Computer Networks
- Chips
- Field-Programmable Gate Arrays (FPGA)
- Design-Systems
- Application Software



# Databases



bought by SAP (2010)

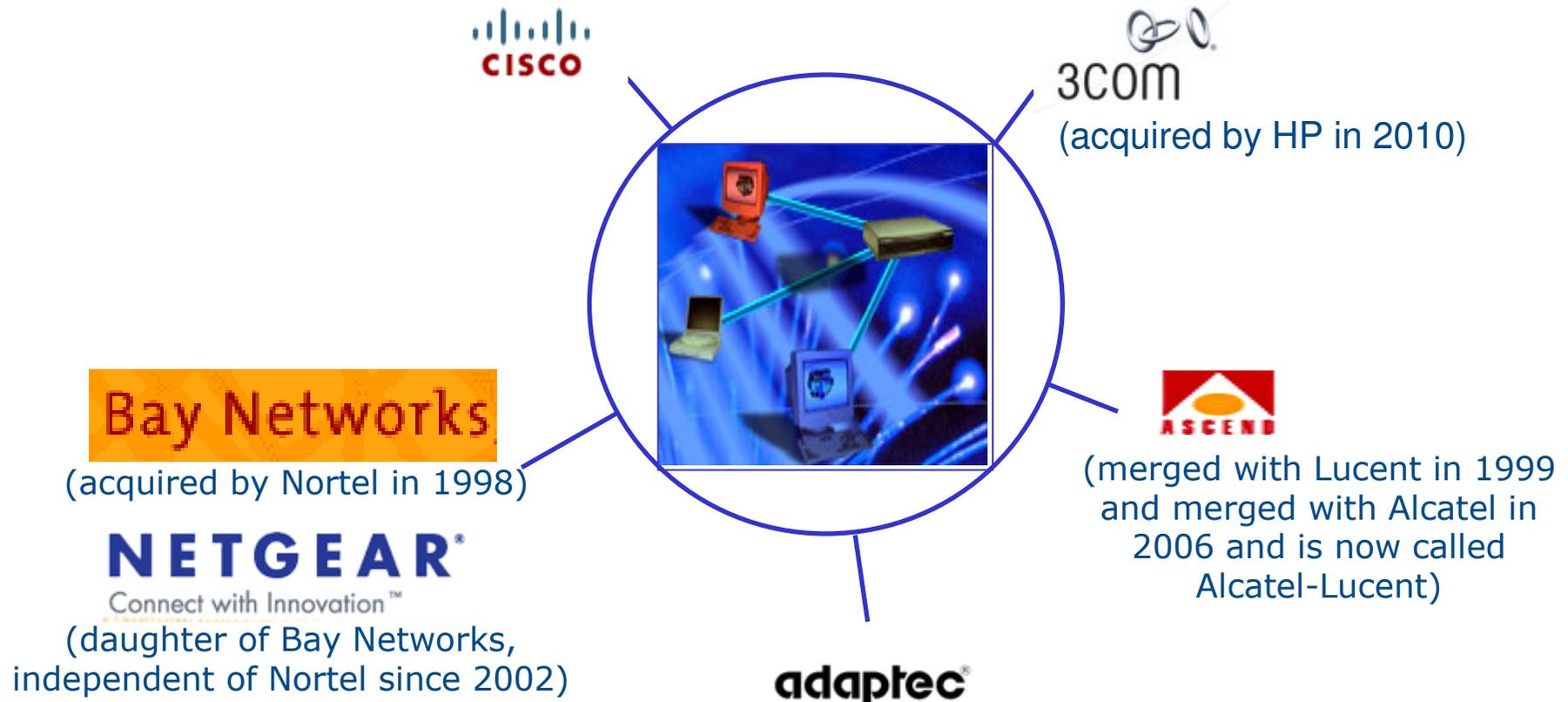


bought by IBM (2001)

Belong to the leading database systems

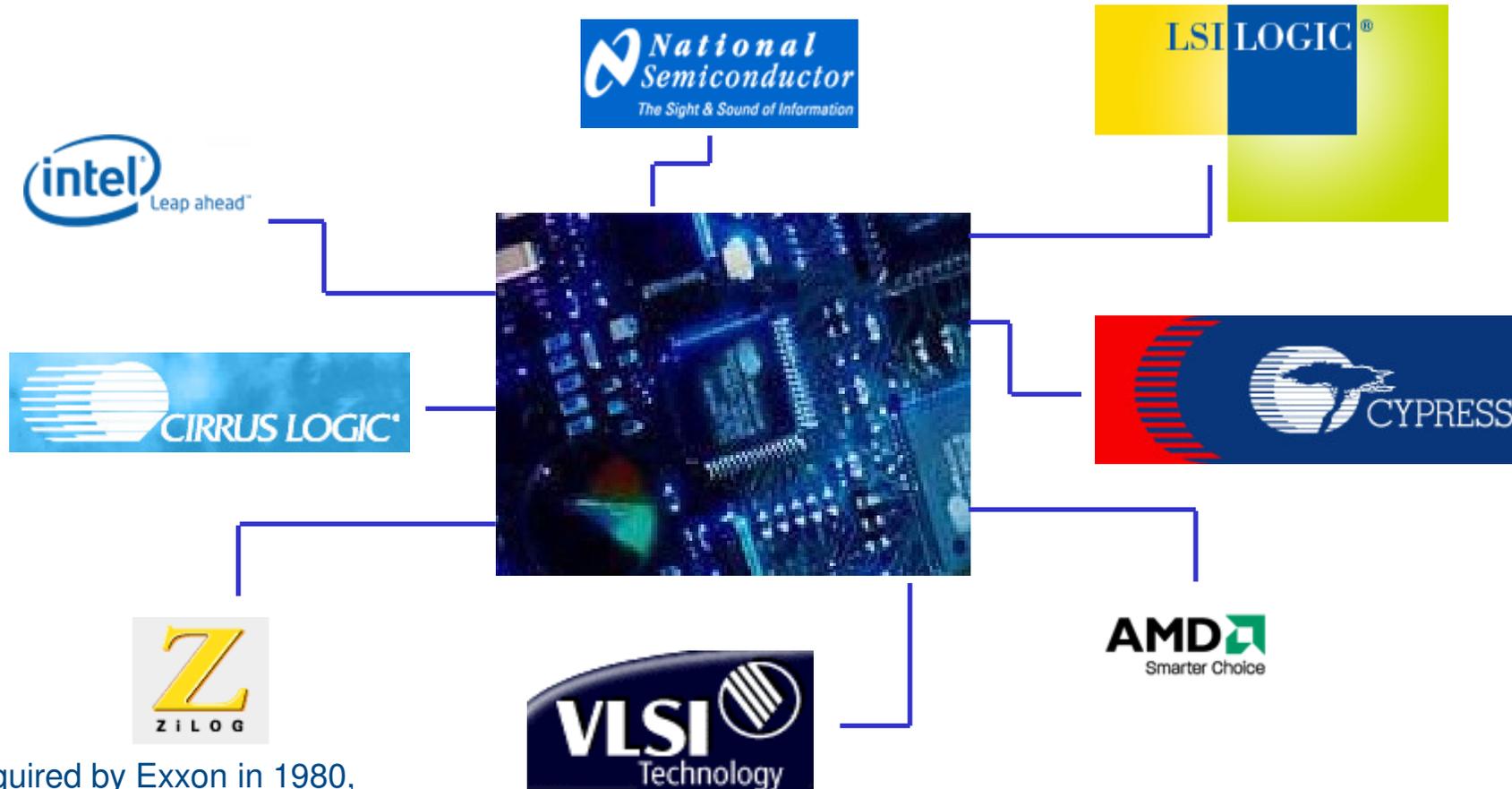


# Computer Networks





# Semiconductor Technology



(acquired by Exxon in 1980, then by employees in 1989, then by PE from Texas in 1998 and, finally, restructured after bankruptcy in 2001)

(acquired by Philips in 1999)



## *Dominating Position in:*

- Search Engines: Alta Vista (first-ever search engine was acquired by Yahoo in 2003), Yahoo, Google™

- Field-Programmable Gate Arrays (FPGA)



- Design-Systems



- Application Software





## *The Keys to Success I*

- Entrepreneurs / Pioneers
- Intelligence, energy, hard work (macho-hours)
- Ideas (own, adopted, “refreshed,” borrowed, “imported)
- Risk-taking preparedness
- Close cooperation of universities with industry (professors are company consultants and board members while engineers and managers teach at universities)



## *The Keys to Success II*

- **Culture of entrepreneurship** (about 80% of Stanford graduates and students are founders, cofounders of startups or work for them)
- **Self-confidence and no fear of any type of tasks**
- **Lots of capital** (rich individuals, medium and large companies, VC's)
- **Share options and ownership mentality**
- **Mostly fair and clear employment contracts**



## *The Keys to Success III*

### Infrastructure for Entrepreneurs

- Venture Capitalists
- Lawyers
- Management-Experts
- Marketing-Experts
- Talented Engineers
- Specialised Chip-Designers
- Certified Public Accountants (CPA's)
- Broad range of special services



## *The Keys to Success IV*

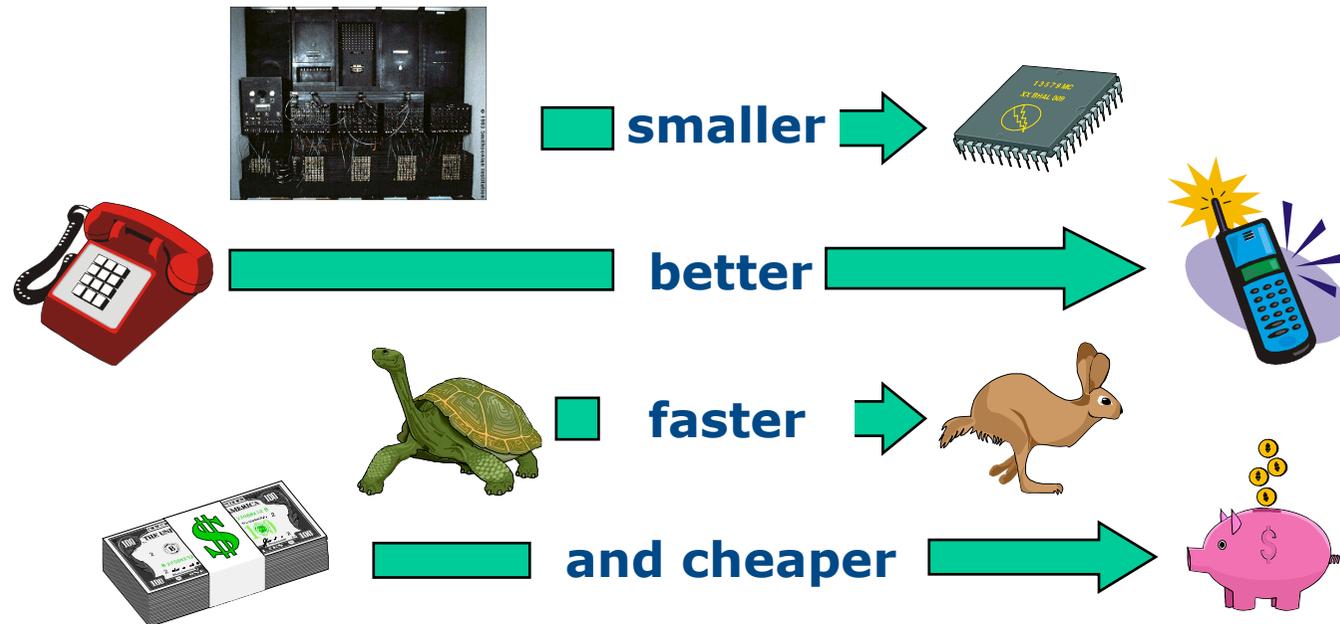
- Ability to optimize the way from a concept to a functioning company (it is almost an art)
- Competitiveness
- Innovative Business Models
- Innovative Management Structures
- Connectivity through density (30 towns in an 80 km long corridor)
- Possibility of the second chance  
*"Double your failures to multiply your successes"*

T. J. Watson, IBM



# The Mindset – Concepts, Ideas, Business Models

## How can one develop



**technologies?**

**Lately: zero-time, zero-power, etc.**

- These questions absorb thousands of minds in the Valley



## *Companies Culture and Drive for Success*



### **Traditional**

pin-striped suits  
skyscrapers  
plush offices  
10-door limousines  
grey hair  
10m<sup>2</sup> mahogany office desks  
5-dish menus  
reserved parking &  
hefty bonuses for board  
members

### **Silicon Valley**

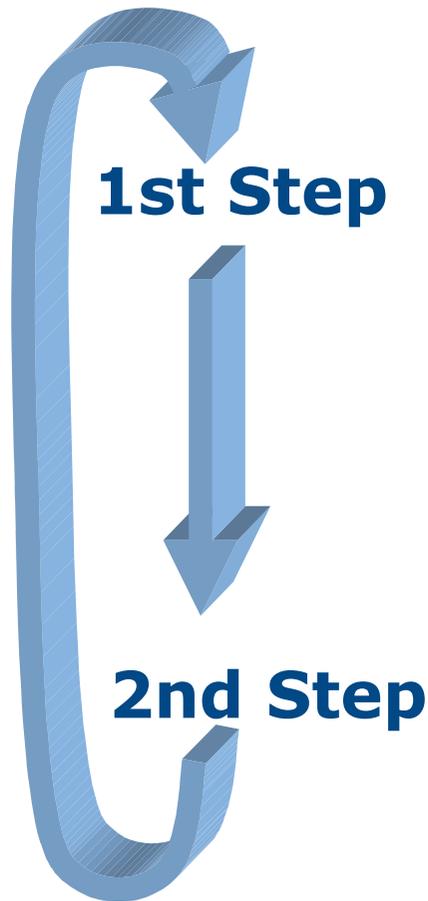
T-shirts & sneakers  
garages  
baracks & cabins  
SUV's and used cars  
dyed hair  
2nd-hand furniture  
junk food  
top management  
treated as equals





## *IPO's – Fuel for the Valley*

**IPO:** Cashing out for all the blood, sweat and tears



- IPO spells capital for the company, employees and VC's
- Product and brand recognition
- Interest of top talent
- Cost-efficient employment through share options
- Great potential for a rapid capital increase

- Successful employees
- invest in other companies
  - or start their own



## *The Price of Success*

- No time for life outside the company
- Seven day weeks
- Ruined family life and relationships
- Some companies are 24-hour a day communes
- Nervous breakdowns
- Every 10th company on the average is successful
  - 40-60% of startups survive, the rest go bankrupt
- High cost of living
  - Palo Alto prices surpass those in New York City, an average house costs US \$ 850,000 (perhaps \$ 500 K now)



# Cost of living in Silicon Valley

## People in Silicon Valley Are Higher Earners ...



**MEDIAN 2006 INCOME**  
ALL OCCUPATIONS

UNITED STATES  
**\$30,400**



SILICON VALLEY  
**\$46,920**

## ... But the Cost of Living Is Also Higher



**MEDIAN HOME PRICES**  
EXISTING SINGLE-FAMILY  
HOMES, FIRST QUARTER 2007

UNITED STATES  
**\$212,300**



SILICON VALLEY  
**\$788,000**

### MEDIAN 2006 INCOME BY OCCUPATION

	UNITED STATES	SHARE OF WORK FORCE	SILICON VALLEY	SHARE OF WORK FORCE
Information systems managers	\$101,580	0.2 %	<b>\$134,330</b>	0.7 %
Computer hardware engineers	88,470	0.1	<b>106,550</b>	1.0
Computer software application engineers	79,780	0.4	<b>100,630</b>	2.2
Network systems administrators	62,130	0.2	<b>89,380</b>	0.4
Computer programmers	65,510	0.3	<b>87,940</b>	0.6

### 2004 TAX RETURNS BY ADJUSTED GROSS INCOME

	\$200,000-\$499,999		\$500,000-\$999,999		\$1 MILLION OR MORE	
	No. of Returns	Share of Total	Returns	Share of Total	Returns	Share of Total
<b>Silicon Valley</b>	<b>54,987</b>	<b>5.4%</b>	<b>9,180</b>	<b>0.9%</b>	<b>5,774</b>	<b>0.6%</b>
California Average	403,174	2.8	84,355	0.6	62,771	0.4

Sources: California Franchise Tax Board; Queens College Sociology Department; Census Bureau; Center for the Continuing Study of the California Economy; National Association of Realtors

The New York Times

...is very high

Source: [www.decheung.com](http://www.decheung.com)



## *Lessons Learned – Silicon Valley*

- Success breeds success
- Make a continuous search for opportunities as a part of daily culture
- Develop “monopolizing” clusters
- Not all ideas must be new
- Self-confidence helps
- Perfecting business models, placement, marketing and timing



# Warum Silicon Valley?

## Standard:

Warum muss man trotz einer vernetzten Welt noch immer nach Silicon Valley, um etwas zu erreichen?

## Mattes:

Wenn ich in Silicon Valley in der Früh zum Starbucks gehe, **laufe ich schon an drei Investoren und fünf Entrepreneurs vorbei**. Jeder ist dort entweder Unternehmer oder Investor oder irgendein Zuarbeiter für einen Entrepreneur, etwas anderes gibt es dort nicht. Die treffe ich beim Frühstück, beim Mittagessen, auf der Straße. Das ist eine Petrischale für Tech-Start-ups, so etwas gibt es hier nicht. Wenn ich hier in Wien zum Starbucks gehe, bin ich ein Alien.



Daniel Mattes  
(38, in Freiburg und Wels aufgewachsen)  
gründete u.a. 1999 Auftrag.at,  
2005 mit Roman Scharf Jajah  
für Internet-Telefonie,  
2010 Jumio für Online-Zahlungen.

Source: [www.derstandard.at](http://www.derstandard.at)