
Green Growth through Open Innovation

~ A Silicon Valley Perspective ~

RCAPS Seminar

Asia Pacific University

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Masa Ishii

Managing Director - AZCA, Inc.

Venture Partner - Noventi



Introduction

Venture Capital



Open Innovation



Asia-Pacific New
Business
Development



IP Management



“Entrepreneurship”

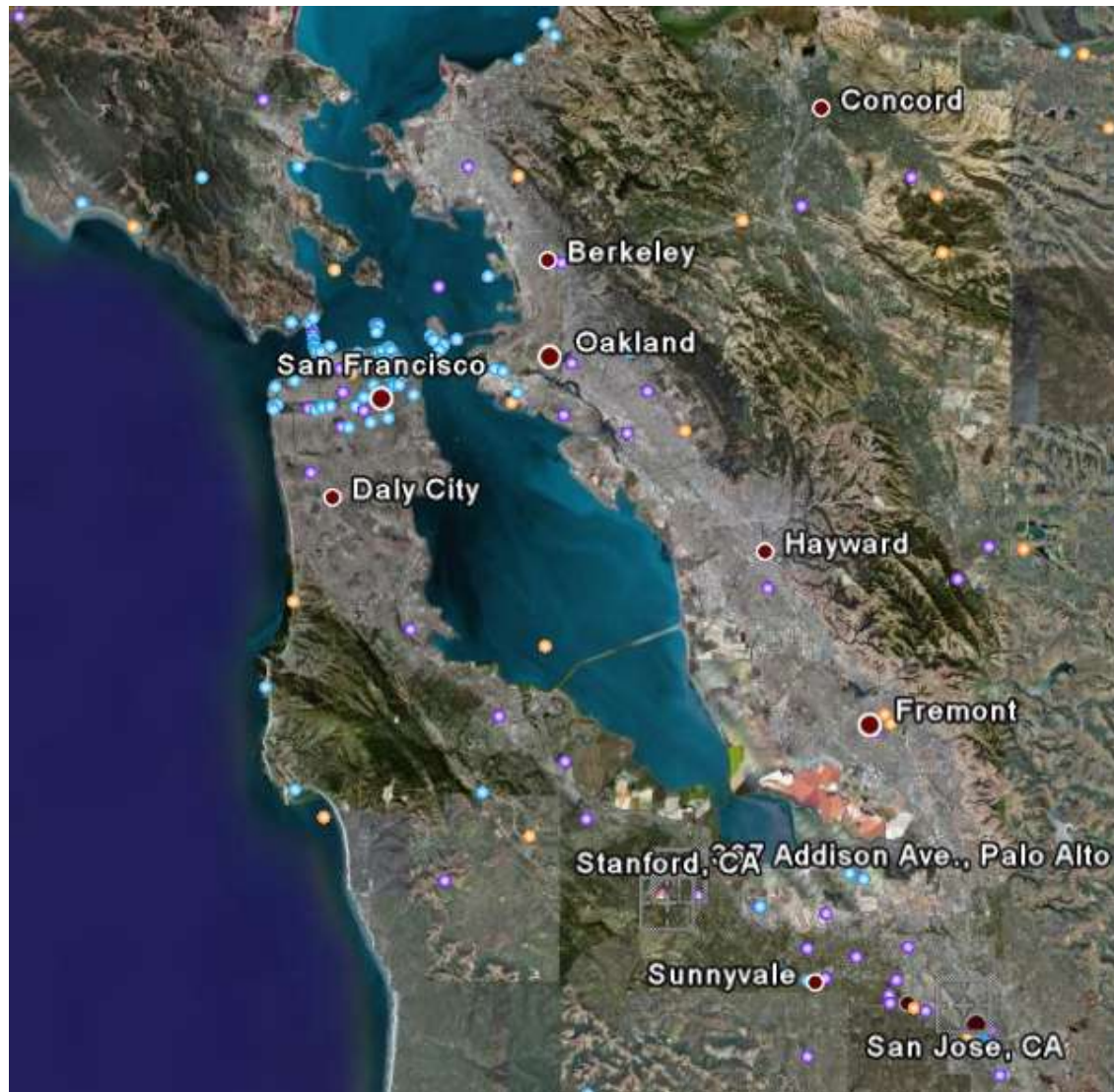


Steven Jobs' Speech at Stanford University in 2005



Steven Paul Jobs, February 24, 1955 - October 5, 2011

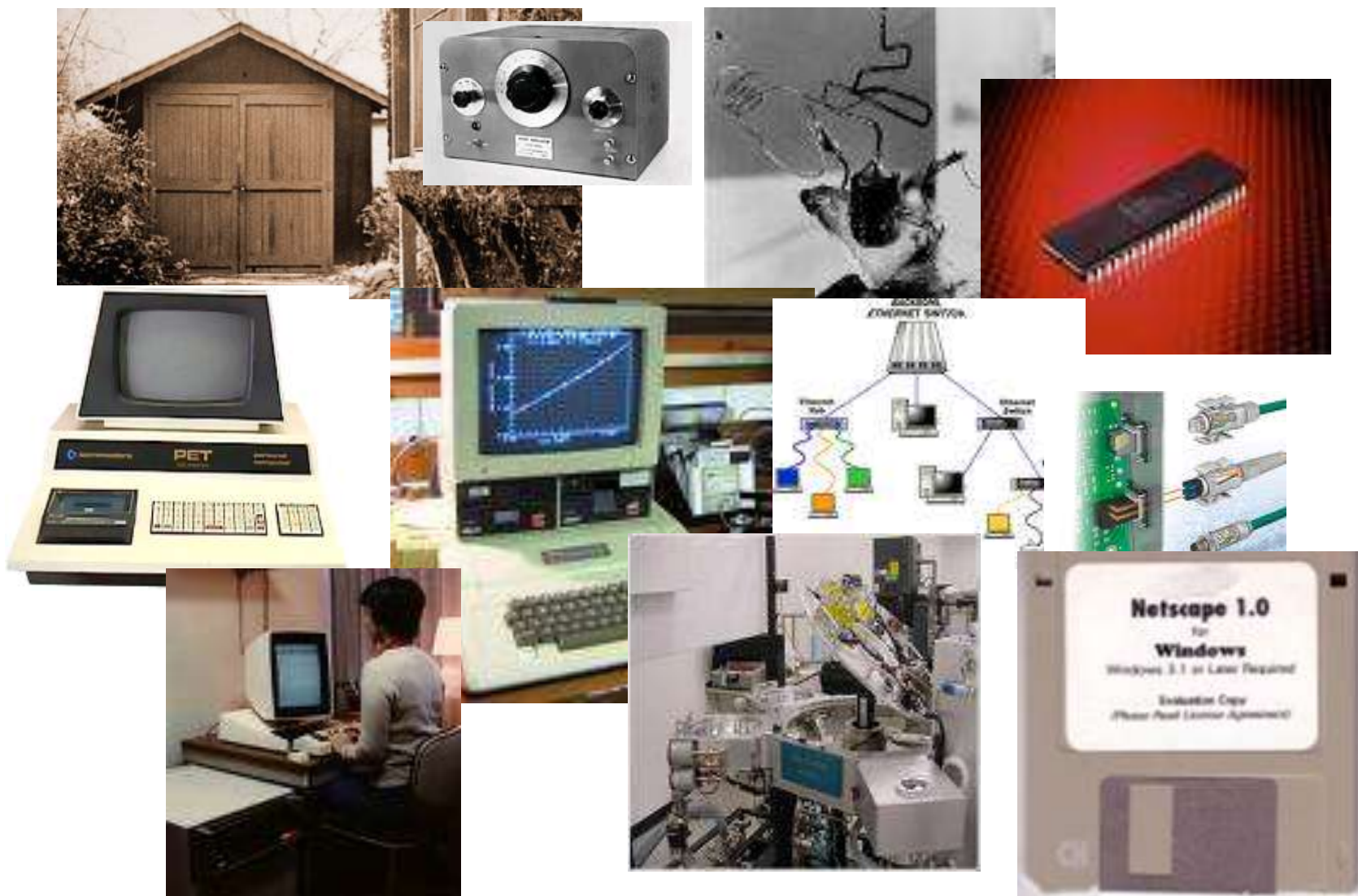
Where is Silicon Valley anyway?



Bay Area before Becoming “Silicon Valley”



History of Silicon Valley



Silicon Valley Today

- People with diverse cultural background
 - 36% of the population is foreign born
 - 55% of engineering professional is foreign born
 - 48% of people speak languages other than English at home
- High Education Level
 - Universities and research institutions such as Stanford University, UC Berkeley, PARC, SRI International
 - More than 40% of people have bachelor or higher degrees (US average 27%)
- Abundant High-tech Talent (2006)
 - Software: 101K
 - Innovation Services: 77K
 - Semiconductor: 57K
 - Hardware: 54K
 - Components: 24K
 - Biomedical: 21K

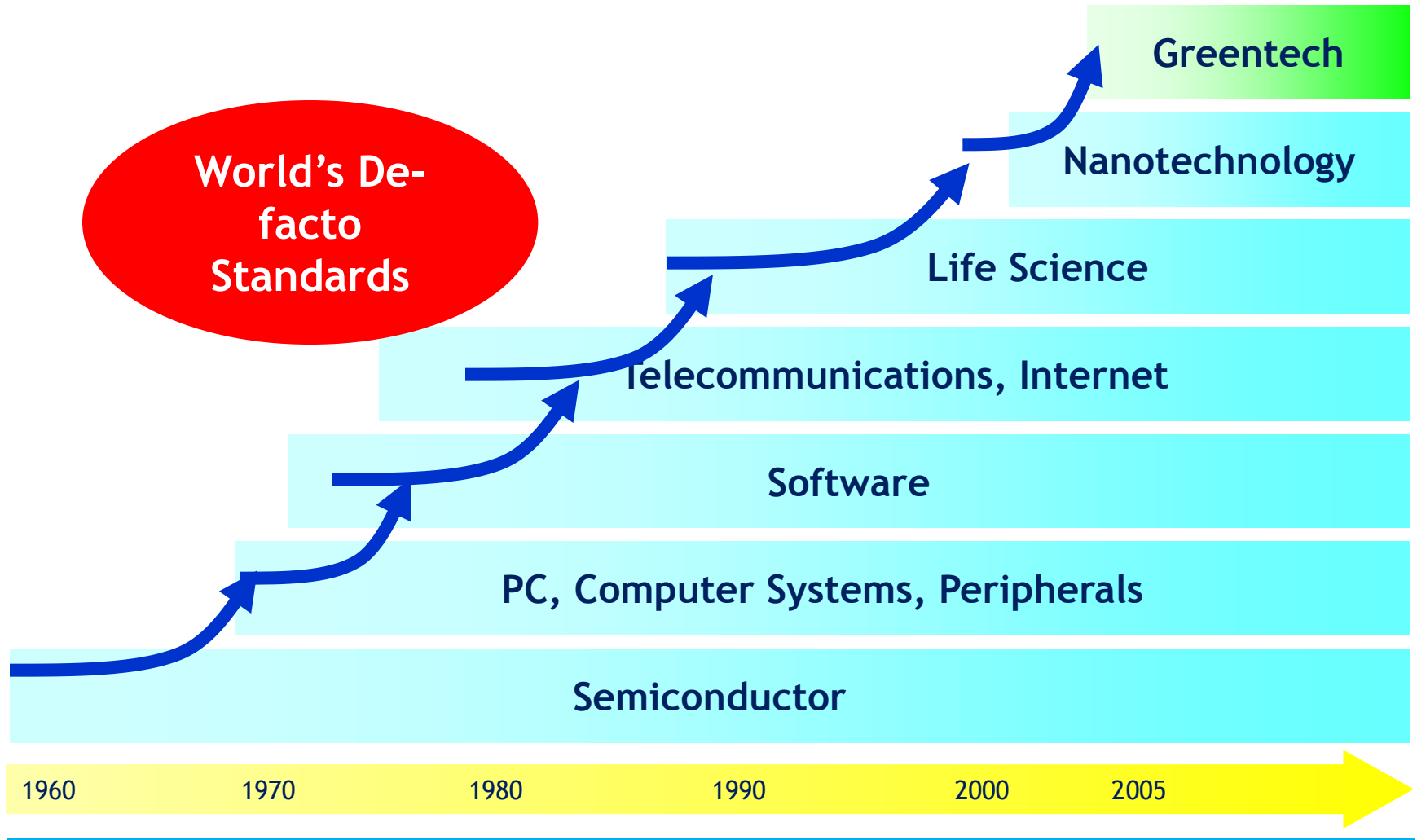
- Mecca of High-tech Industries
 - 15,000 high-tech companies (2007)
 - Value added per capita: \$224,200 (US average \$85,800)
 - Patents - 7459 patents in 2000 up to 8809 patents in 2003 (40% of California State, 10% of the entire US)
- Abundant financial source to back venture activity
 - 40% of VC money flows into Silicon Valley
 - Over 300 VC firms
- Strong informal network
 - High mobility of people
 - Seminars and conferences and universities and research institutions
 - Grassroots networking events
 - “Silicon Valley Club” of entrepreneurs and VCs
- San Jose became 10th largest city in the US (passing Detroit)

VC Investments by State



Source: NVCA

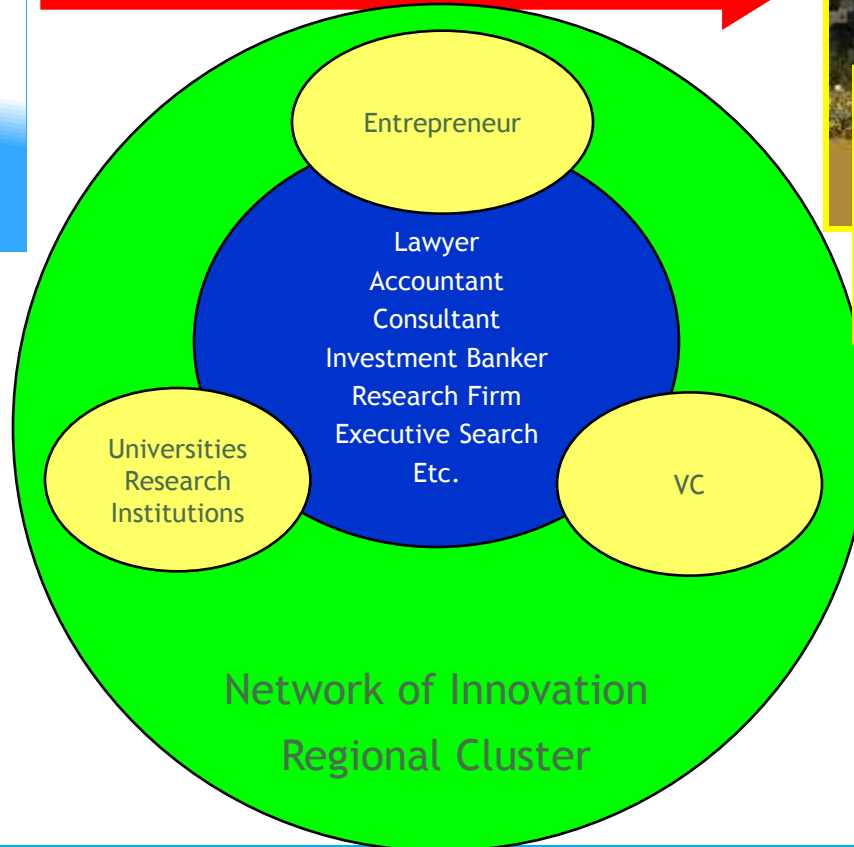
Waves of High technology



High-tech Ecosystem of Silicon Valley



Idea



New Products

Notable Players in Silicon Valley

The image is a map of Silicon Valley with red dots marking the locations of major tech companies and their founders. Red arrows point from the callout boxes to the corresponding locations on the map. The callouts include:

- ORACLE**: Callout for Oracle, with a photo of Larry Ellison.
- Google**: Callout for Google, with photos of Sergey Brin and Larry Page.
- TESLA MOTORS**: Callout for Tesla Motors, with a photo of Elon Musk.
- AZCA**: Callout for AZCA, located in the center of the map.
- hp**: Callout for HP, with a photo of William Hewlett & David Packard.
- Apple**: Callout for Apple, with a photo of Steven Jobs.
- intel**: Callout for Intel, with a photo of Andy Grove.
- ebay**: Callout for eBay, with a photo of Pierre Omidyar (French-born Iranian-American).
- YAHOO!**: Callout for Yahoo!, with a photo of Jerry Yang.
- William Shockley**: Callout for Intel's founder, with a photo of William Shockley.
- Bill Gates**: Callout for Microsoft's founder, with a photo of Bill Gates.

Silicon Valley's Fundamental Characteristics

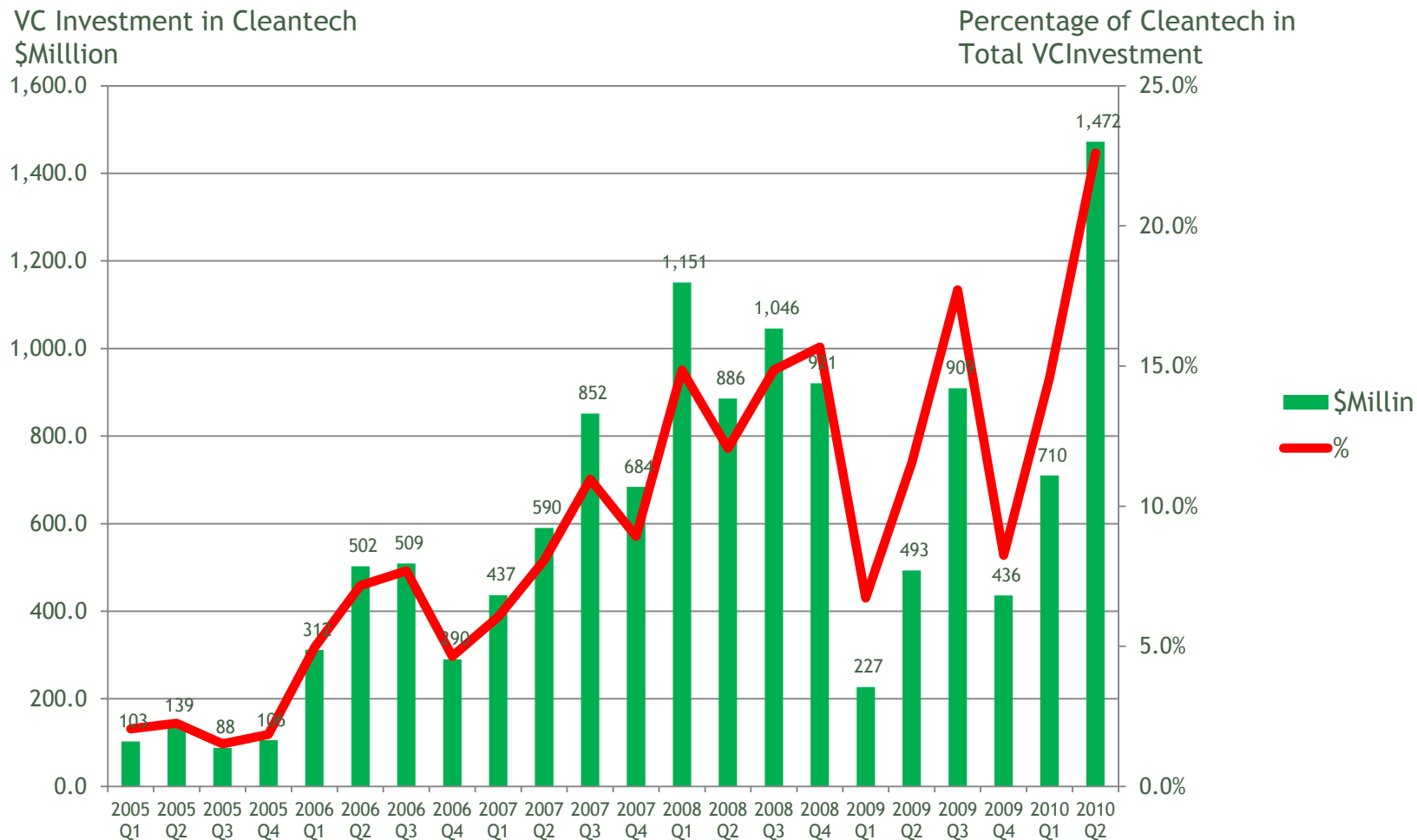
Keyword 1: *Openness*

- **Openness** to people with different background
- **Openness** to new ideas (technology, business model) → “*Out of the Box Thinking*”

Keyword 2: *Tolerance for Failure*

- Low risk high return
- Many attempts, many failures behind some success

VC Investment in Cleantech Sector



Source: Thomson Financial/NVCA

Requirement for Greentech Cluster Growth

Survey Results on 25 Investors

Requirement	#Answers
Entrepreneurial Culture, Abundant Entrepreneurs	13
Aggressive Government Policies	12
Excellent Universities, Research Institutions	11
Access to Financial Sources (e.g., VC)	8
Market Potential	8
Deal Flow	4
Customer Awareness	3

Greentech Policies of California State

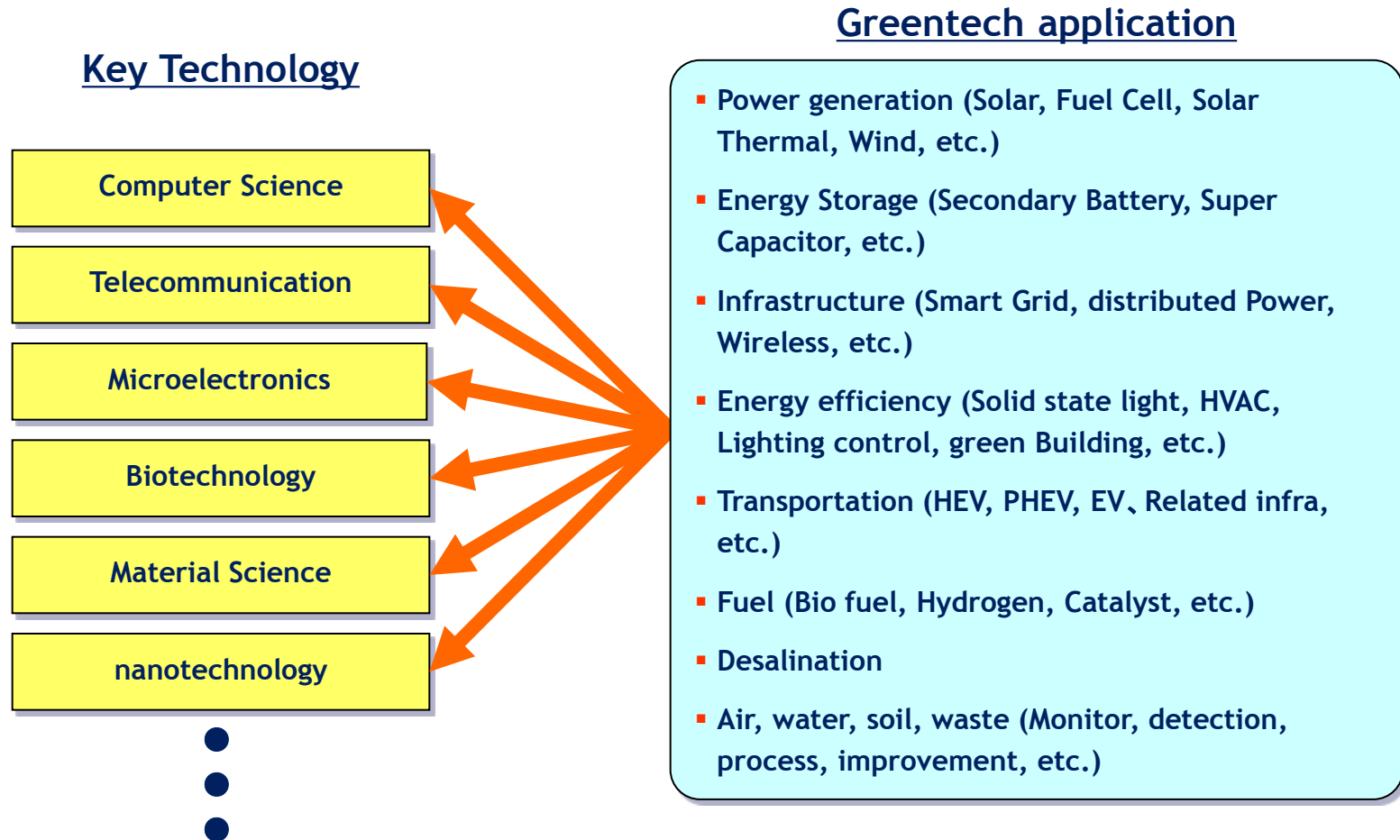
- Public Energy Research (PIER) Program
- The Green Wave Initiative
- California's Renewable Portfolio Standard (RPS)
- Renewable Energy Incentive Programs
- Renewable Resource Trust Fund
 - Solar PV Initiatives
 - California Solar Initiative (CSI)
 - Energy Efficiency Rebates
 - Diesel Emission Reduction Plan

“Green New Deal” by President Obama

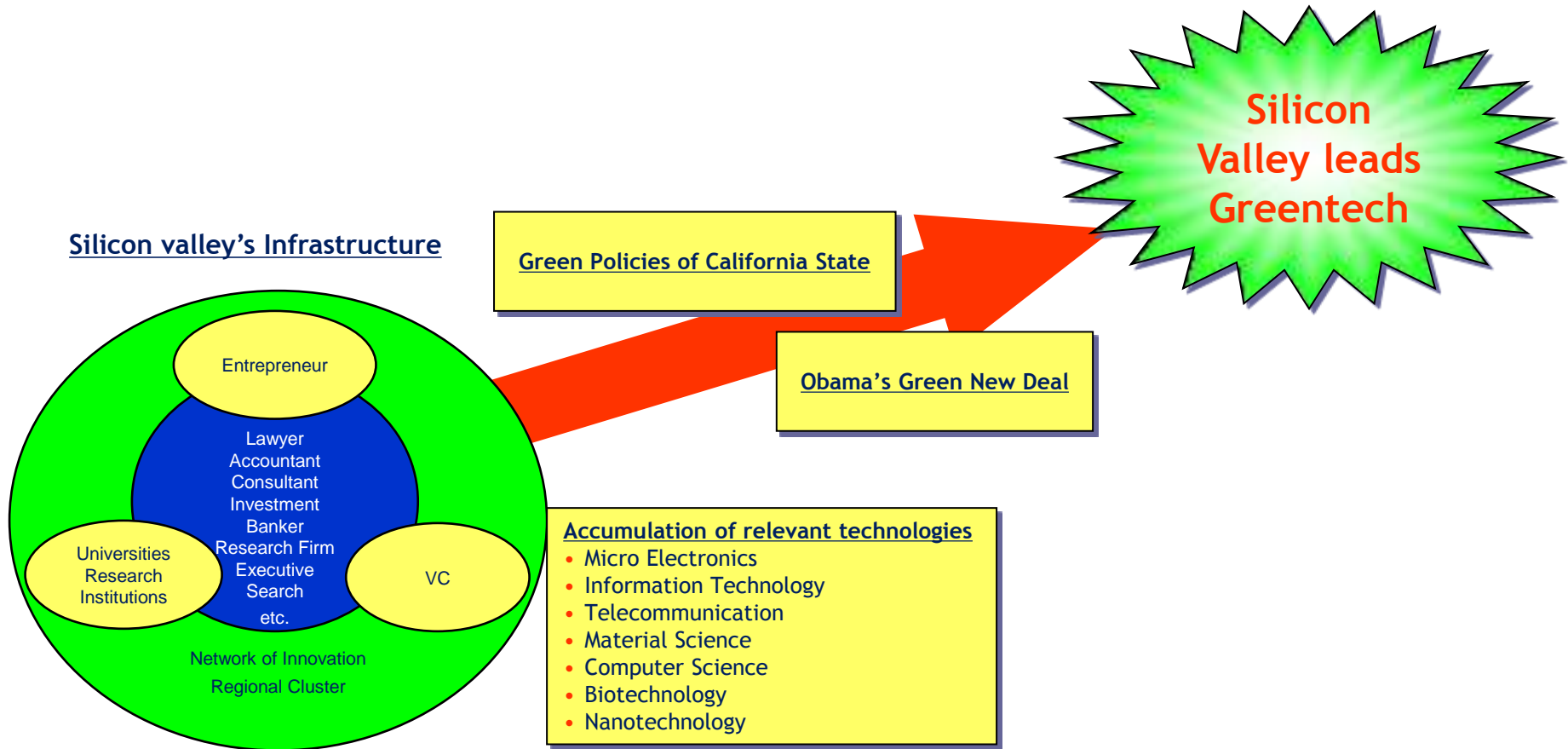
Key Points

- Create 5 million new jobs by investing \$150 Billion in Greentech during the next 10 years
- Reduce the use of crude oil by equivalent amount of import from Middle east and Venezuela within the next 10 years
- Introduce 1 million plug-in hybrid cars made in USA by 2015
- Usage of renewable energy - 10% by 2012, 25% by 2025
- Reduce green house gas emission by 80% by 2050 as compared in 1990

Greentech and Key Technologies



Silicon Valley's Leading Position in Greentech



Commercialization in Greentech



Sustainable Growth

Sustainability = “Meeting the needs of the present without compromising the ability of future generations to meet their own needs”*

P3 =

People



Planet



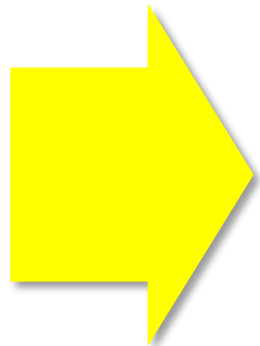
Prosperity



* - UN definition

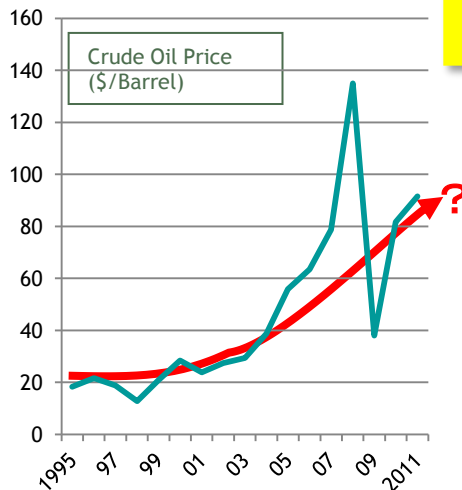
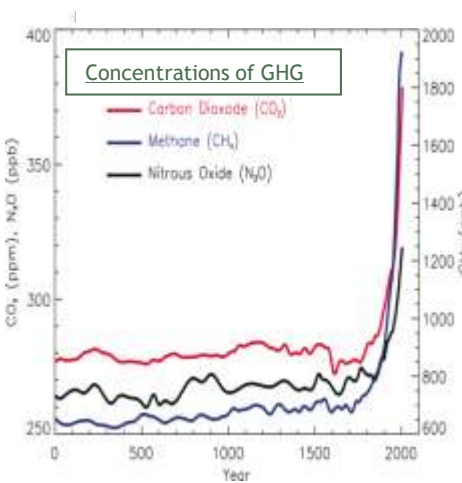
Open Innovation for Sustainable Growth

We don't have the time!!



OPEN INNOVATION

- *Share information to speed up the innovation*
- *Cooperate across traditional boundaries*



Green Open Innovation

Examples



wbcasd

Eco-Patent Commons

- Launched in January 2008, in collaboration with the World Business Council of Sustainable Development (WBCSD)
- Contribute environmental patents to the public domain. Started with a donation of 31 patents by IBM
- IBM, Nokia, Pitney-Bowes, Sony, Xerox, DuPont, Dow Chemical, Bosch, Hitachi, Ricoh, Taisei, etc.

THEGREENXCHANGE

GreenXchange

- Launched in January 2010
- Web-based marketplace for sharing IP, leading to new sustainable business practices and innovation
- Nike, BestBuy, et. al., partnered with *Creative Commons*

International Open Innovation

Tesla Motors

Case



- Core Competence
- Powertrain
 - System control software

Tesla and Panasonic collaborate to develop next-generation battery cell technology



Panasonic
ideas for life

Sony plans to make batteries for electric vehicles

SONY

Tesla motors and Toyota intend to work jointly on EV development



Tesla-powered Toyota RAV4 E.V. to be built in Canada, not California

TOYOTA

International Open Innovation

Tesla as a “Green Energy” Company

Case

Musk Foundation

Donated US\$250,000 to build a PV system



Donating time and resources to manage the project, which will provide renewable electricity to a city facility located on reclaimed industrial land not suitable for agriculture



Soma City, Fukushima prefecture, Japan



International Open Innovation for Green Growth!!

