Revitalizing Venture Ecosystem in Japan

A Perspective from Silicon Valley

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Silicon Valley's Geography

50 Miles
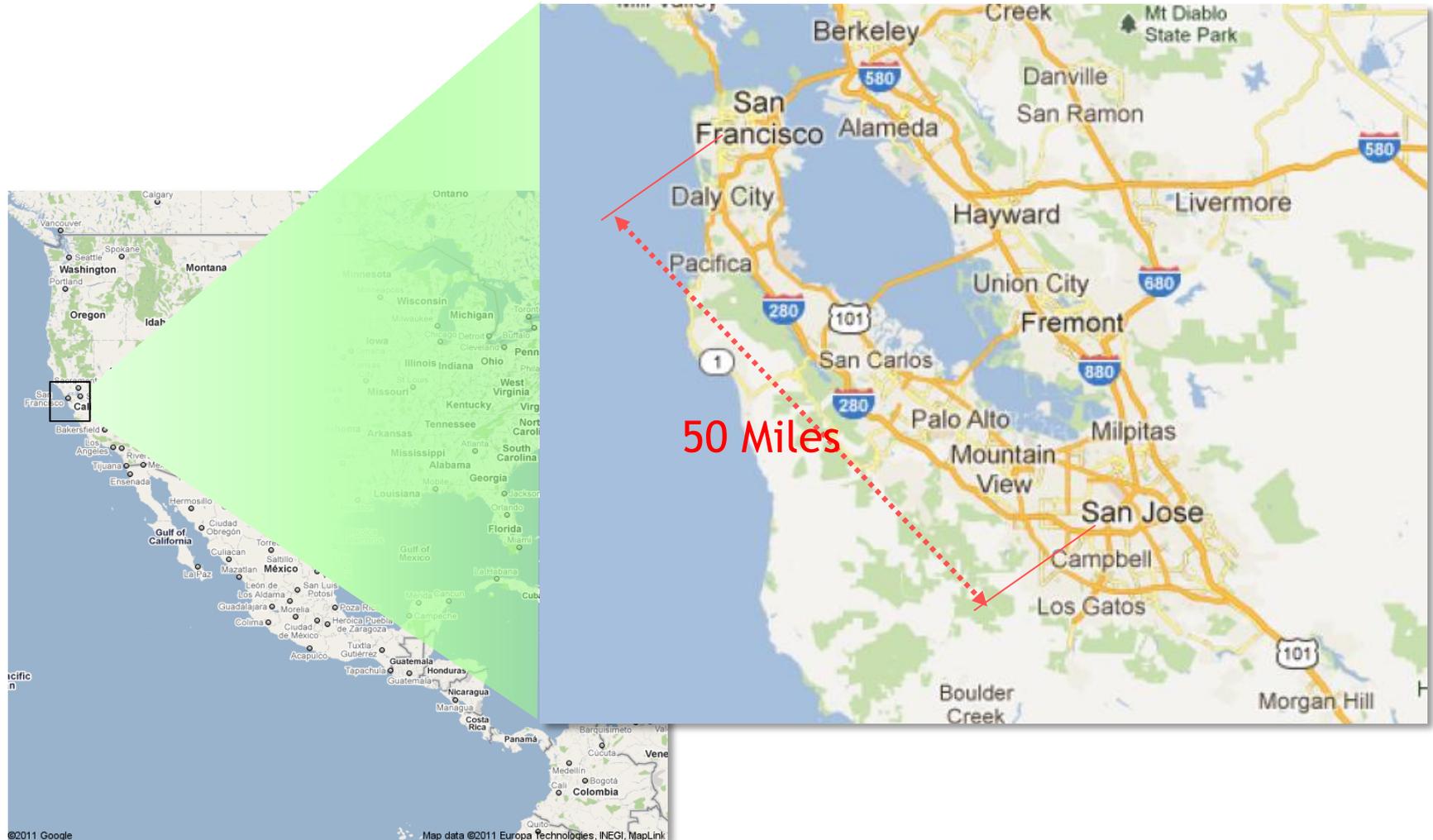
*- The term "Silicon Valley" was coined in 1971 by Don Hoefler in the column articles "Silicon Valley in the USA" in the magazine *Electronic News*.

Bay Area before Becoming "Silicon Valley"

A Few Memorable Photos
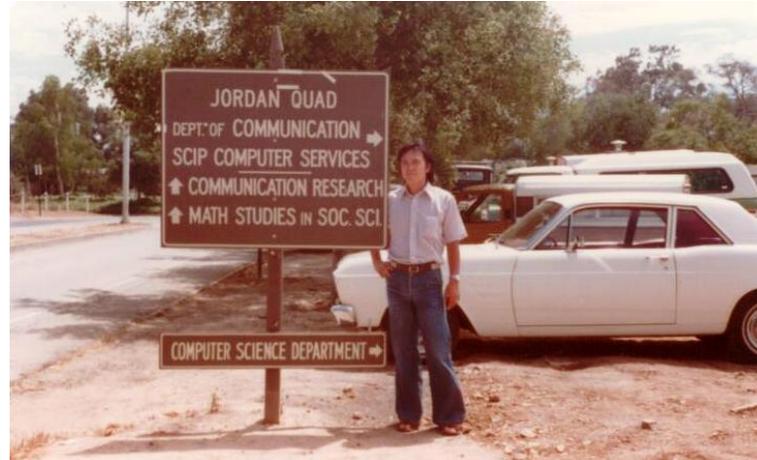
Waves of High-technology

World's Defacto Standard

Greentech

Nanotechnology

Life Science

Telecommunications, Internet

Software

Computer Systems, Peripherals

Semiconductor, IC

1939

1950   1960   1970   1980   1990   2000   2005

Silicon Valley Today
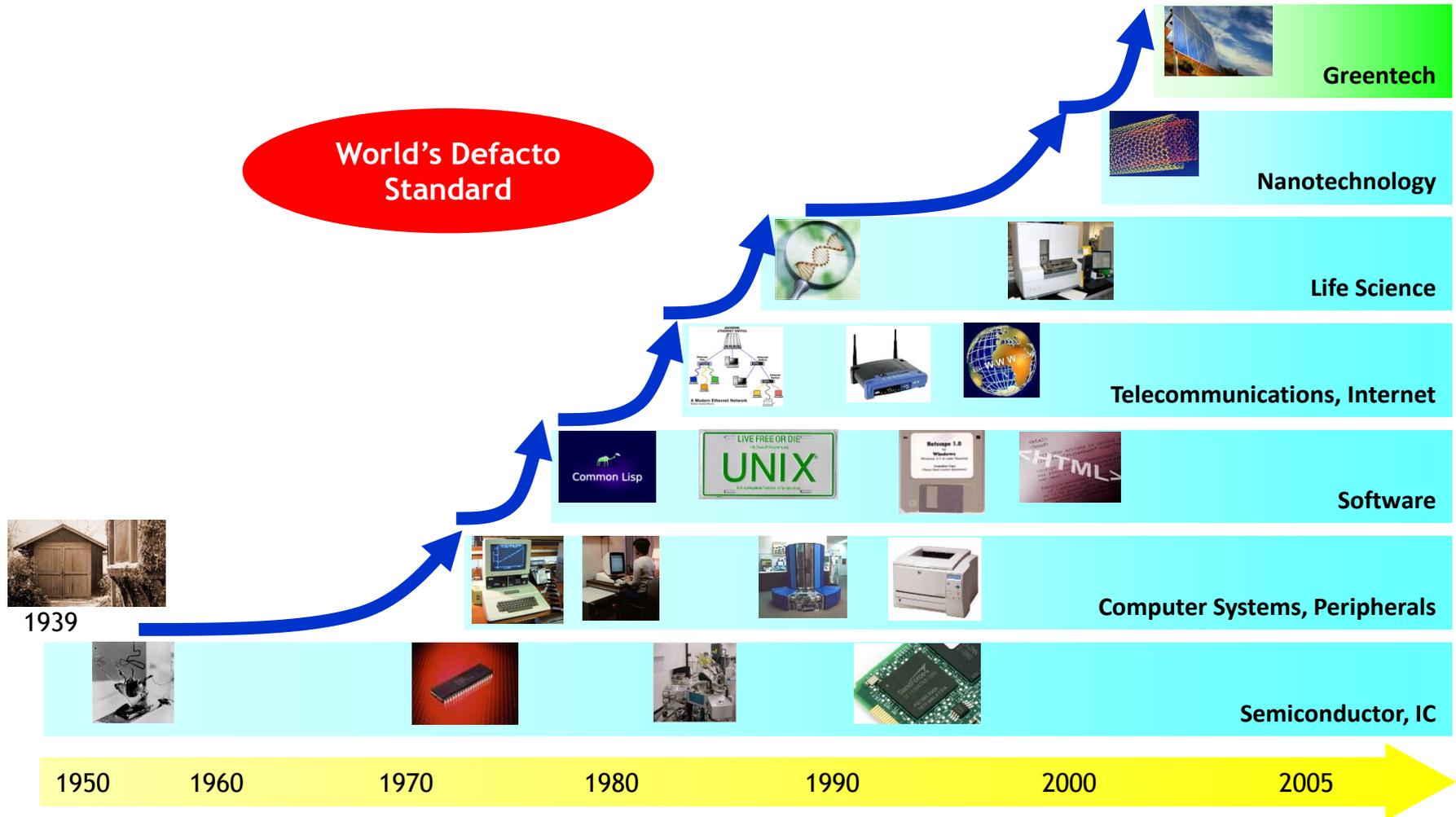
- ## People with diverse Cucltural background
  - 36% of the people are foreign born
  - 48% of the people speak languages other than English at home
  - 55% of engineering professional are foreign born

- ## High education level
  - Universities and research institutions such as Stanford University, UC Berkeley, PARC, SRI International, Lawrence Berkeley National Labs, etc.
  - 44% of people have bachelor or higher degrees (US average 27%)

- ## Mecca of high-tech industries
  - 15,000 high-tech companies (2007)
  - 450,000 people working in high-tech out of 1.7 million working force (total population 2.6 million)
  - 1% of the US population, 12% of patents applications

- ## Abundant financial source to back venture activity
  - $12B VC money invested in 2011 - 41% of US total ($28.7 B)
  - Over 300 VC firms – 842 VC firms in total US in 2011

US Graduate School Ranking

| Graduate School	Location	State	Score*				
			Biological Sciences	Chemistry	Computer Science	Physics	Total Score
Stanford University	Stanford	CA	4.9	4.9	5.0	5.0	19.8
Massachusetts Institute of Technology	Cambridge	MA	4.8	4.9	5.0	5.0	19.7
University of California--Berkeley	Berkeley	CA	4.8	4.9	5.0	4.9	19.6
California Institute of Technology	Pasadena	CA	4.7	4.9	4.2	4.9	18.7
Harvard University	Boston	MA	4.7	4.8	3.9	4.9	18.3
Cornell University	Ithaca	NY	4.4	4.4	4.5	4.7	18.0
Princeton University	Princeton	NJ	4.4	4.0	4.5	4.9	17.8
Columbia University	New York	NY	4.3	4.3	3.9	4.3	16.8
University of Michigan--Ann Arbor	Ann Arbor	MI	4.3	4.0	4.0	4.2	16.5
University of California--San Diego	La Jolla	CA	4.2	3.9	3.9	4.1	16.1
University of Illinois--Urbana-Champaign	Urbana	IL		4.5	4.6	4.6	13.7
University of Chicago	Chicago	IL	4.2	4.2		4.6	13.0
University of Wisconsin--Madison	Madison	WI		4.5	4.2	4.1	12.8
Yale University	New Haven	CT	4.5	4.1		4.1	12.7
University of Texas--Austin	Austin	TX		4.2	4.3	4.1	12.6
University of California--Los Angeles	Los Angeles	CA		4.2	4.0	4.1	12.3
Scripps Research Institute	La Jolla	CA	4.5	4.6			9.1
University of Washington	Seattle	WA	4.2		4.5		8.7
Johns Hopkins University	Baltimore	MD	4.6			4.0	8.6
University of Pennsylvania	Philadelphia	PA	4.3			4.2	8.5
University of Maryland--College Park	College Park	MD			4.0	4.2	8.2
Carnegie Mellon University	Pittsburgh	PA			4.9		4.9
University of California--San Francisco	San Francisco	CA	4.5				4.5
University of California--Santa Barbara	Santa Barbara	CA				4.5	4.5
Washington University in St. Louis	St. Louis	MO	4.5				4.5
Rockefeller University	New York	NY	4.5				4.5
Northwestern University	Evanston	IL		4.4			4.4
Duke University	Durham	NC	4.4				4.4
Georgia Institute of Technology	Atlanta	GA			4.3		4.3
University of North Carolina--Chapel Hill	Chapel Hill	NC		4.0			4.0
Pennsylvania State University--University Park	University Park	PA		4.0			4.0
Purdue University--West Lafayette	West Lafayette	IN			3.8		3.8
Brown University	Providence	RI			3.7		3.7

Impact of VC-backed Companies on the US Economy (2010)

- **80% of Innovation**

- **11% of Private Sector Jobs (11.9 Million)**
  - 90% of Software jobs
  - 74% of Biotechnology jobs
  - 72% of Semiconductor/Electronics jobs
  - 54% of Computer jobs
  - 48% of Telecommunication jobs

- **21% of US GDP ($3.08Trillion)**
  - 88% of Semiconductor/Electronics revenue
  - 67% of Biotechnology revenue
 - 46% of Computer revenue
  - 40% of Software revenue
  - 39% of IT services revenue

VC Investments by Region

Source: NVCA

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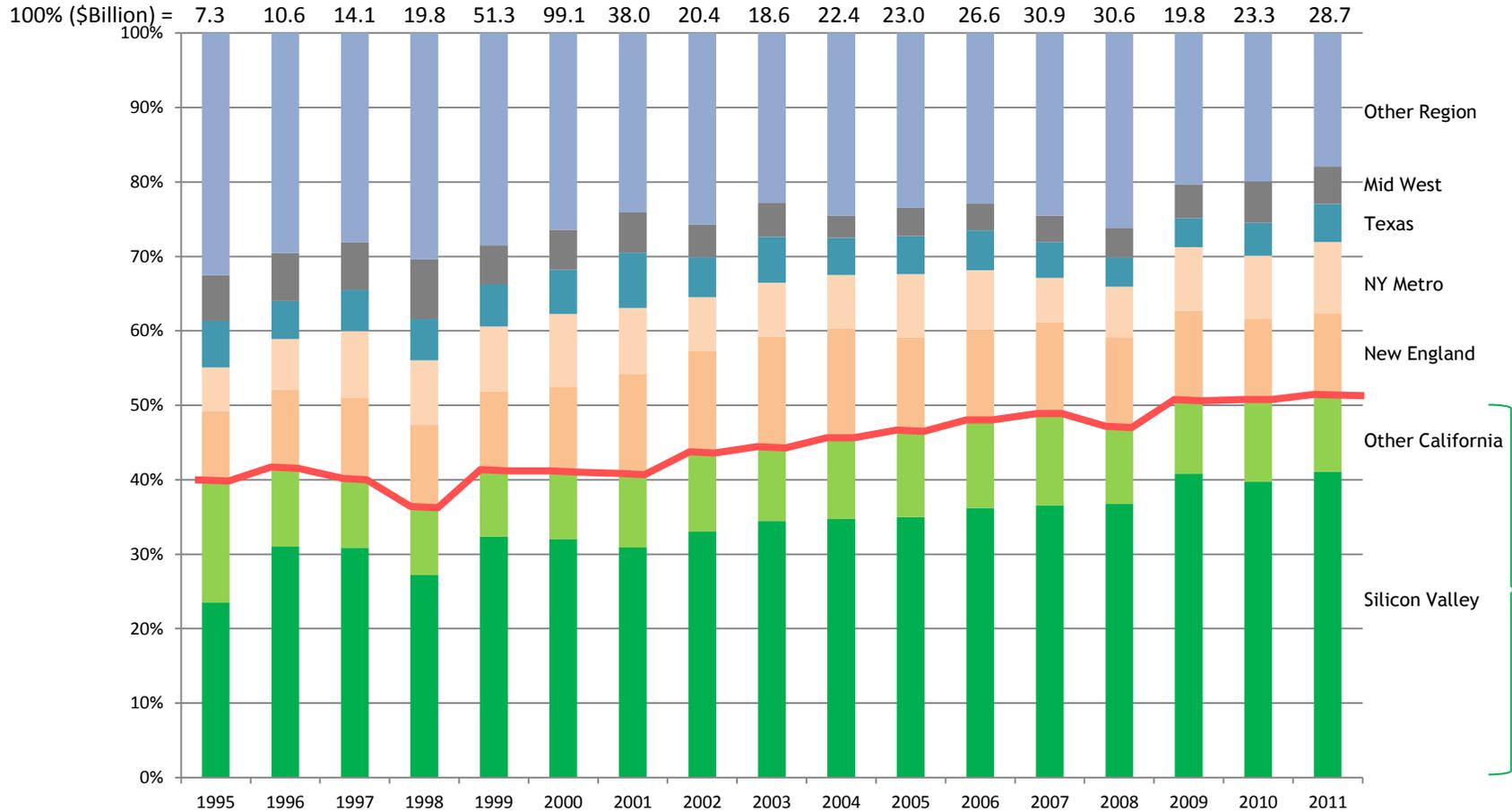
Innovation Ecosystem of Silicon Valley
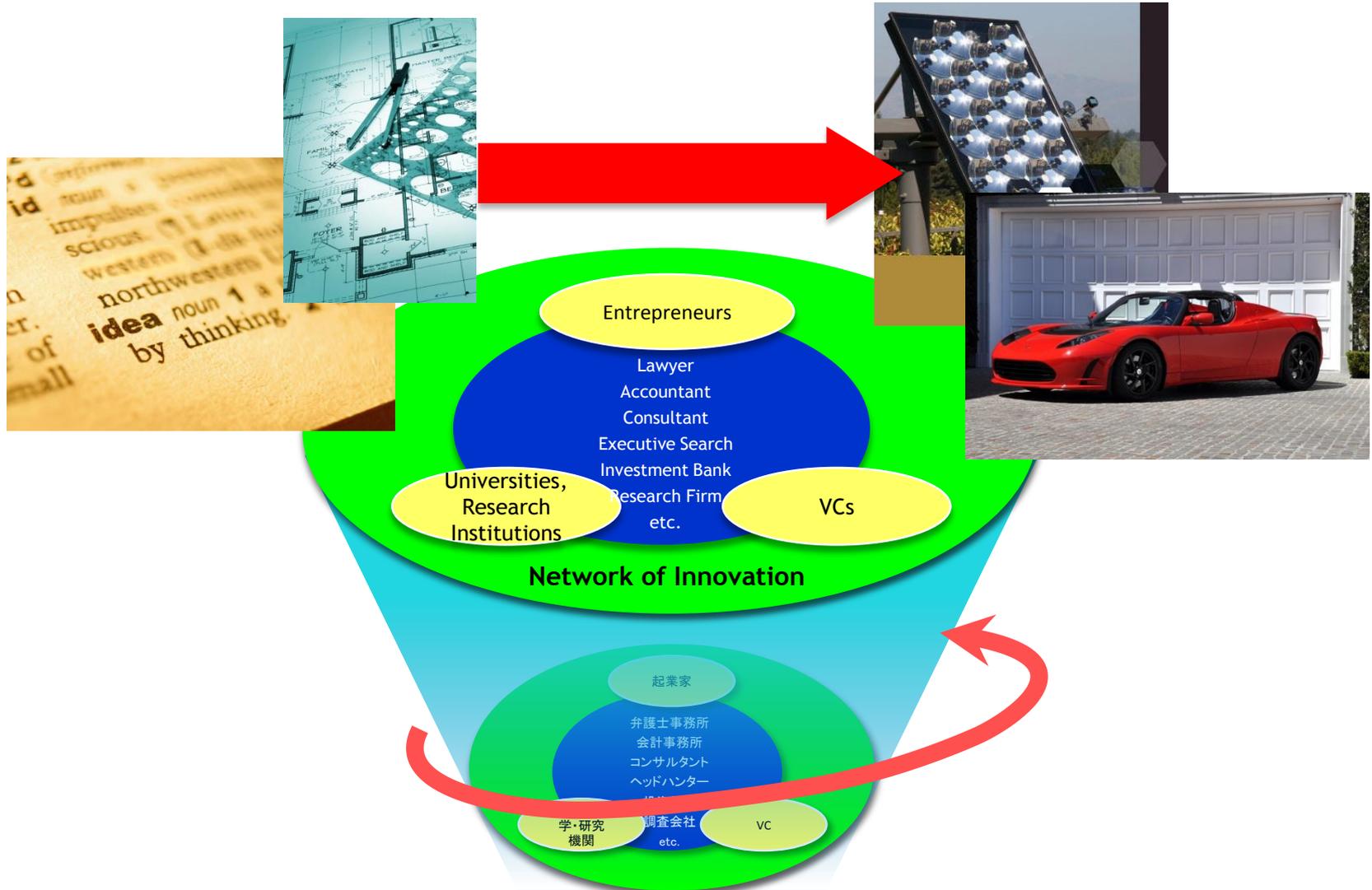
Key Components of Venture Company

Spin-off (Universities, Companies)

Serial Entrepreneur

Venture Company

Disruptive Technology, Solution

Strong Board

Strong Management

Risk and Reward

High-growth Target Market

Venture Capital

Other Support Structure

Openness, Tolerance for Failure Culture to Implement Ideas
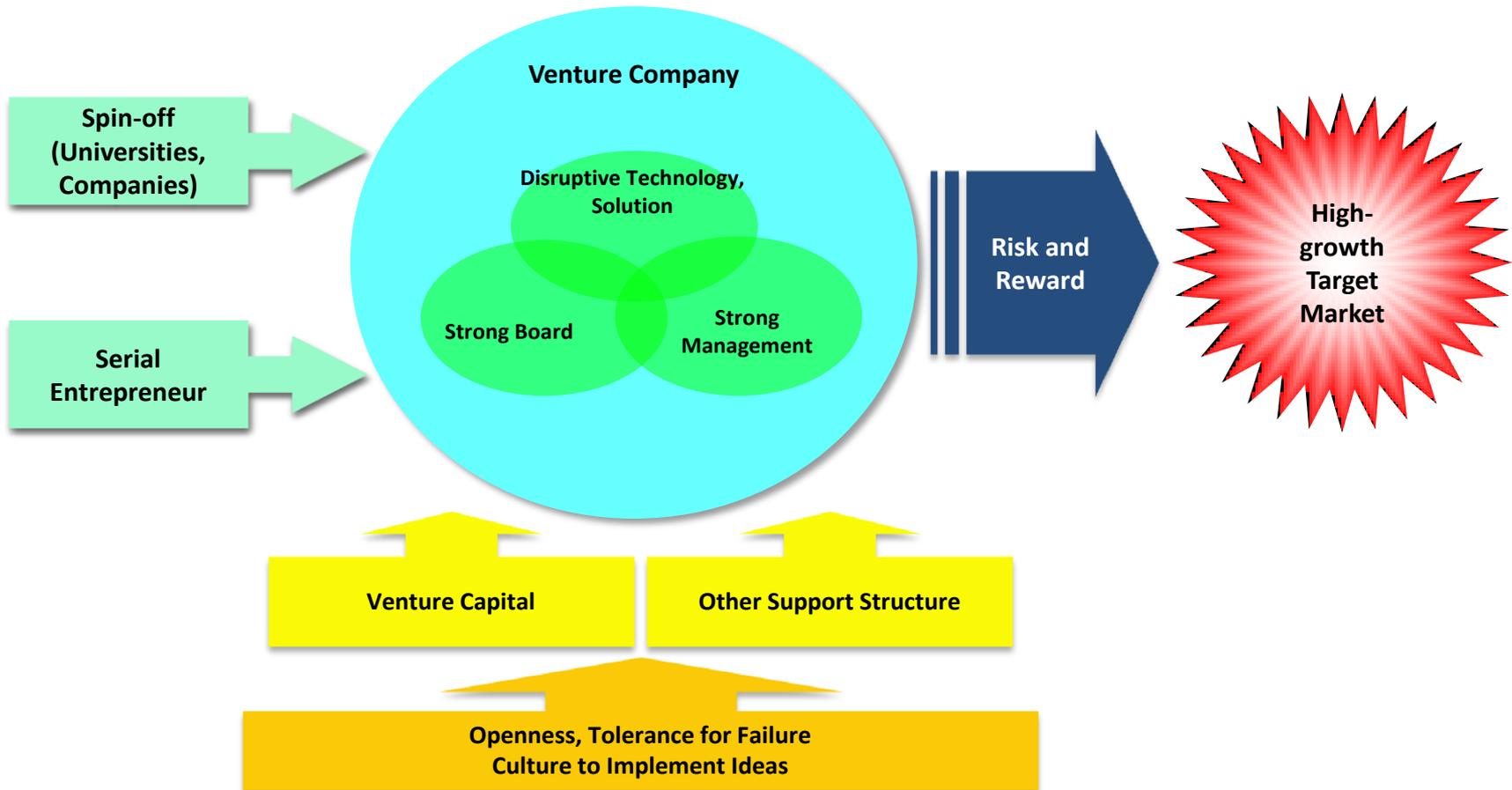
Notable Players in Silicon Valley

William Shockley

Bill Gates

Larry Ellison

Mark Zuckerberg

Sergey Brin

William Hewlett & David Packard

AZCA

Jerry Yang

Elon Musk

Steven Jobs

Andy Grove
(3rd employee)

Pierre Omidyar
(French-born Iranian-American)

Cultural Differences: *Silicon Valley vs. Route 128*

Silicon Valley	Route 128
Open, Flexible	Conservative, Secretive
Collaboration, Alliance	Self-contained, Vertically Integrated
Faithful to your own Capability	Faithful to Company
Objective: Self-realization	Objective: Reputation of Company
High Mobility of People	Long-term Employment
Open Systems Architecture	Proprietary Architecture
Incubators ("Silicon Valley in a Box")	(nothing equivalent)

Keys to Continued Innovation

Key Word 1:   *Openness*

- Openness to people with diverse background, strangers (regardless of the affiliation, title)

- Openness to new ideas (technology, solution, business model)
  ➔ "*Out of the Box Thinking*"

Key Word 2:   *Tolerance for Failure*

- Failure = Opportunity to learn

- Many, many attempts behind a few success

- Low risk high return for entrepreneurs

Open Innovation
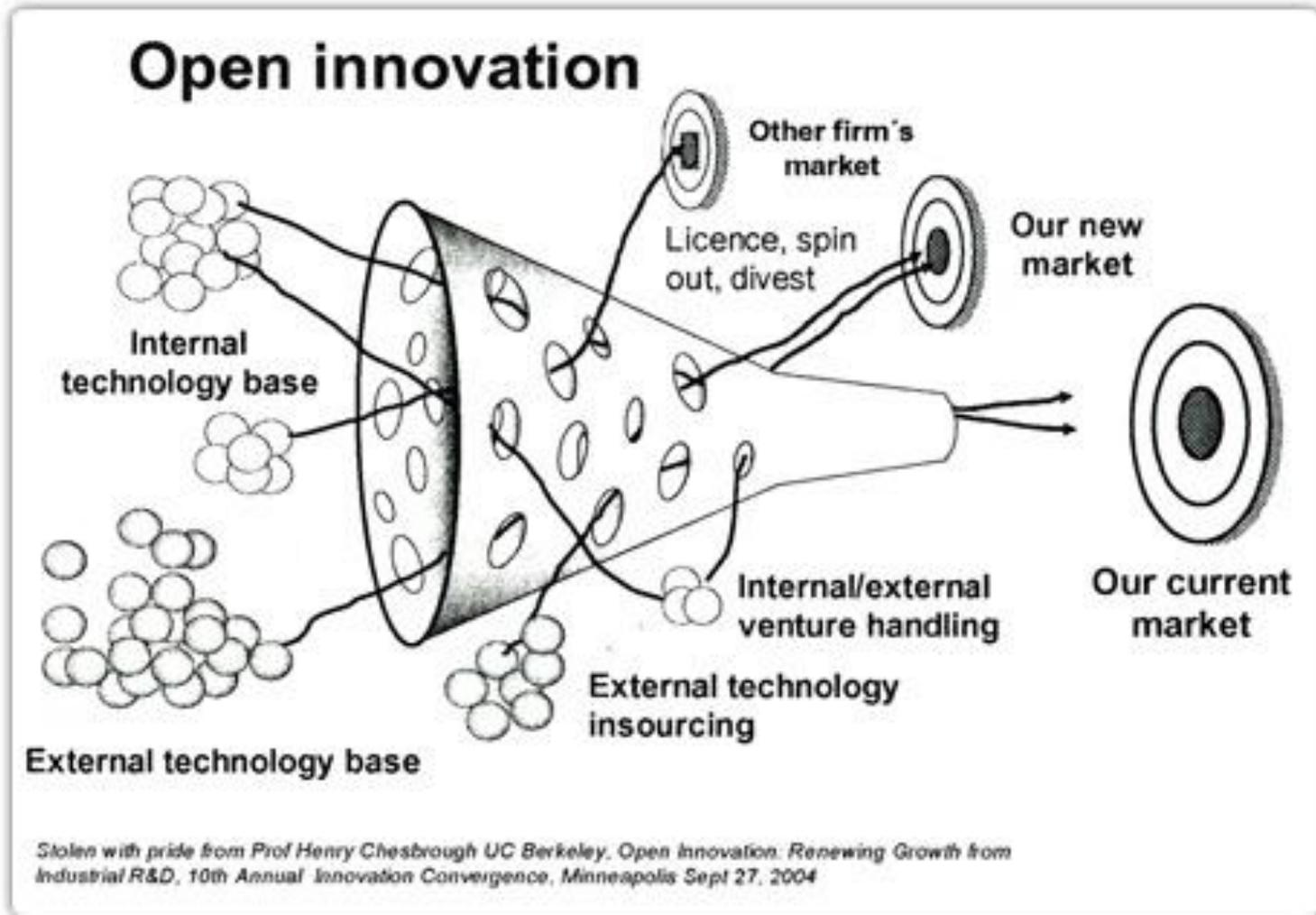
# Venture Ecosystem
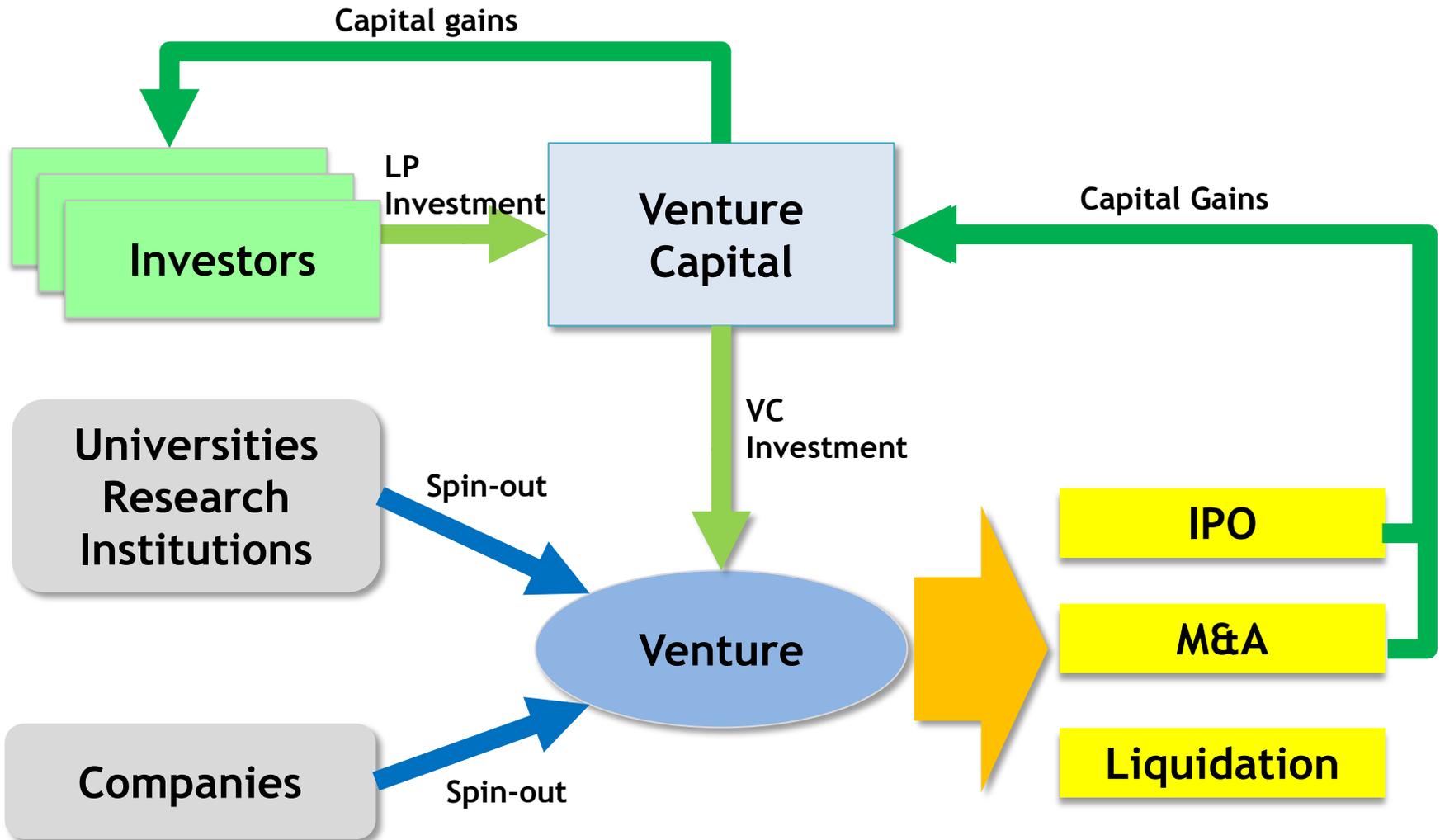
VC Investments and Exits in the US

Source: NVCA

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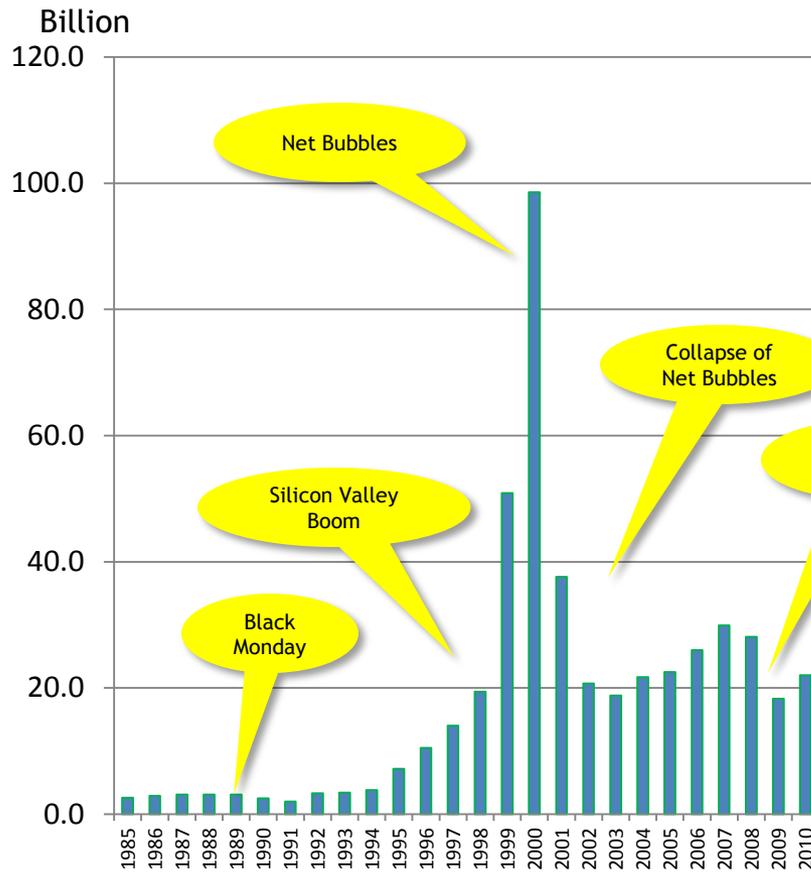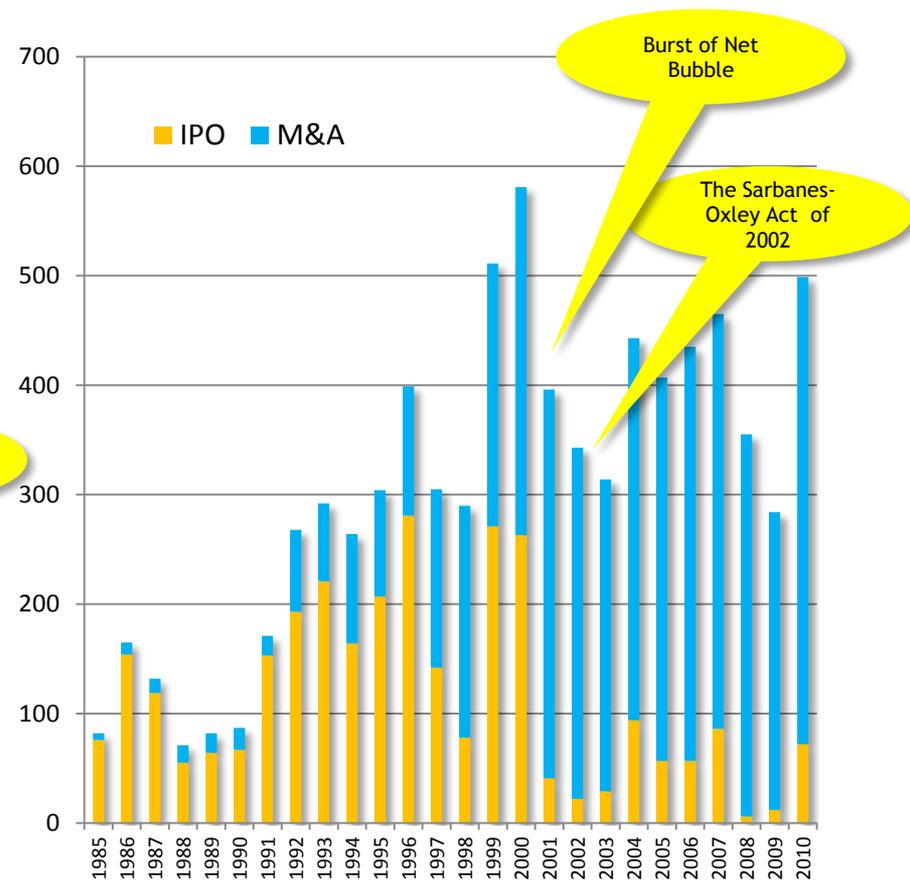
VC Investment Amounts by Region

¥1,000 Oku

Chart data (US, Europe, Japan):

Year	US	Europe	Japan
2005	23.2	18.6	2.6
2006	21.1	18.1	2.8
2007	24.4	6.7	1.9
2008	22.4	7.1	1.4
2009	14.2	4.3	0.9
2010	17.6	3.9	1.1
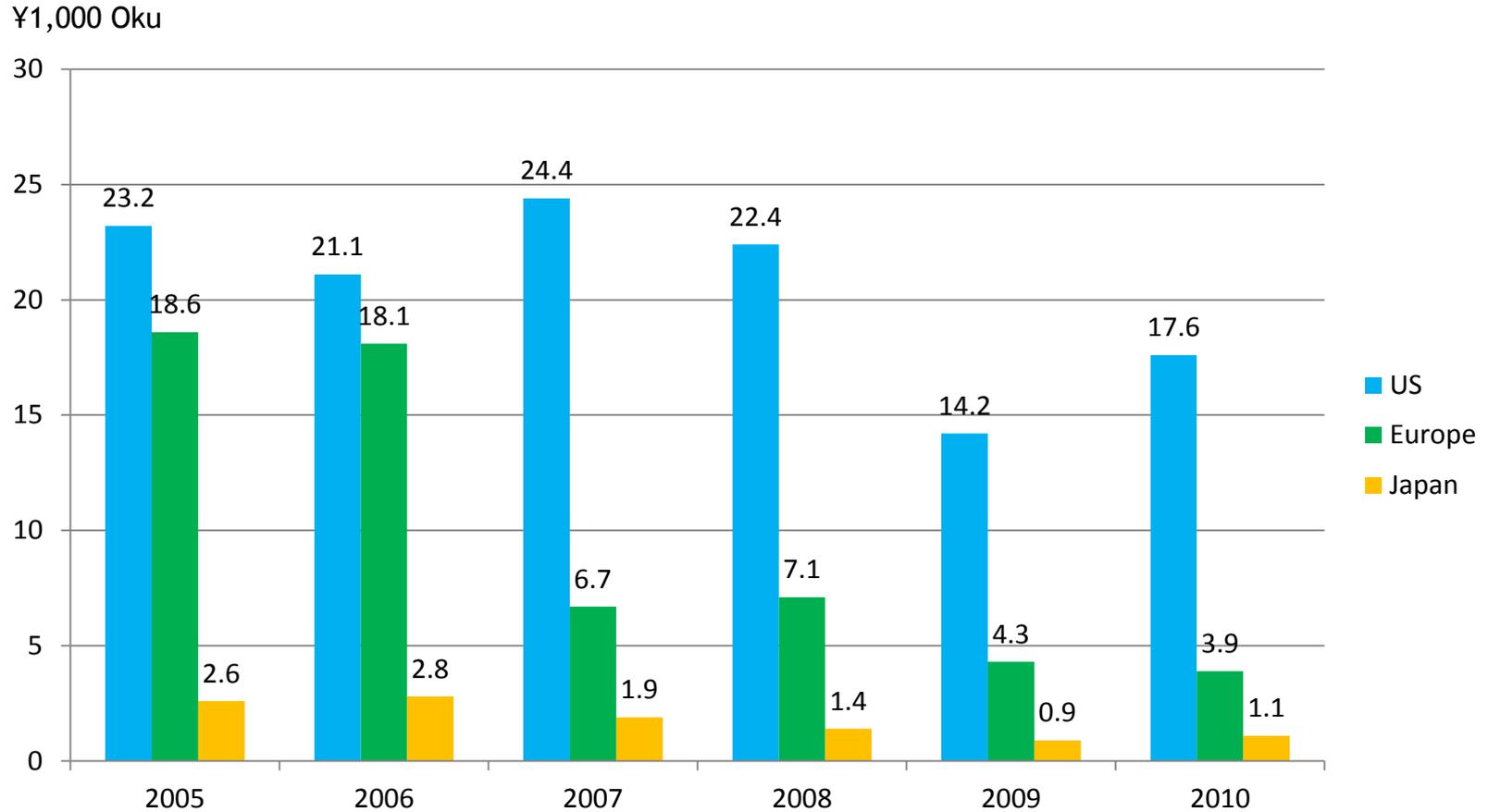
Note: Fiscal Year (April – March, next year) for Japan; Calendar Year for US and Europe
Source： NVCA ($1,00=¥90); EVCA; VEC

VC Exits

Source： VEC
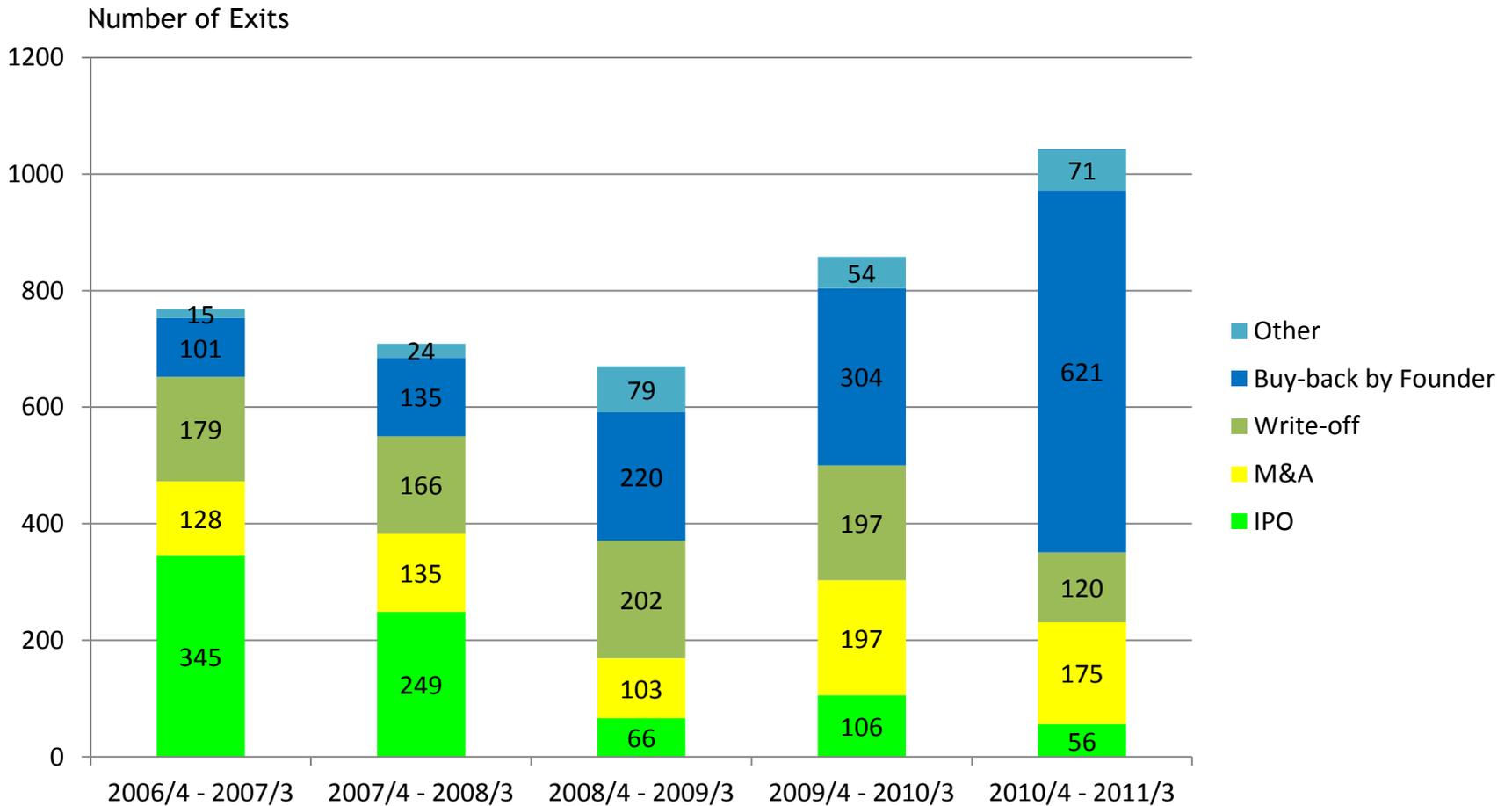
Ventures Started at Universities

Establishment and Close-down of University Ventures
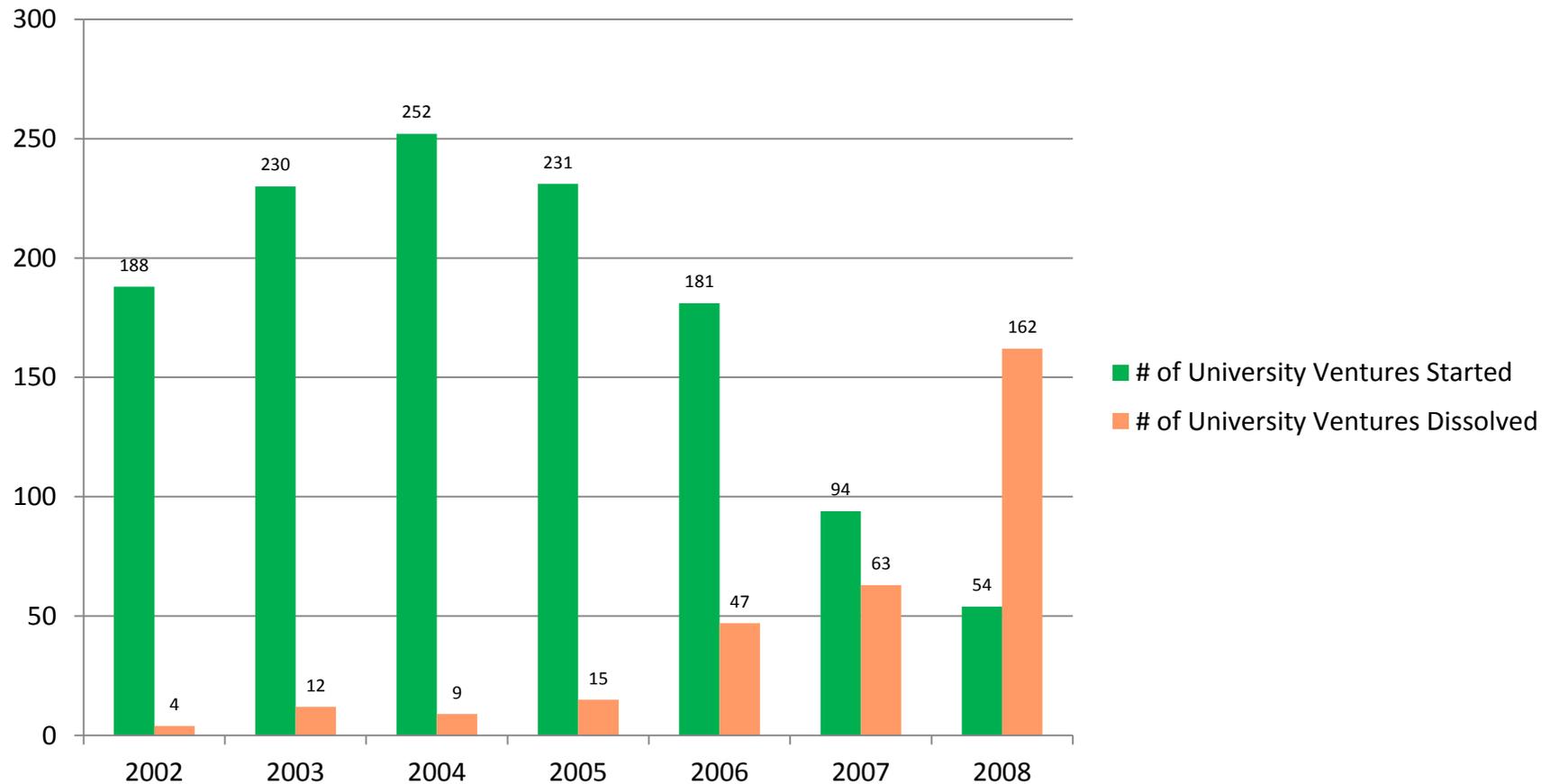
Bottlenecks of Venture Ecosystem
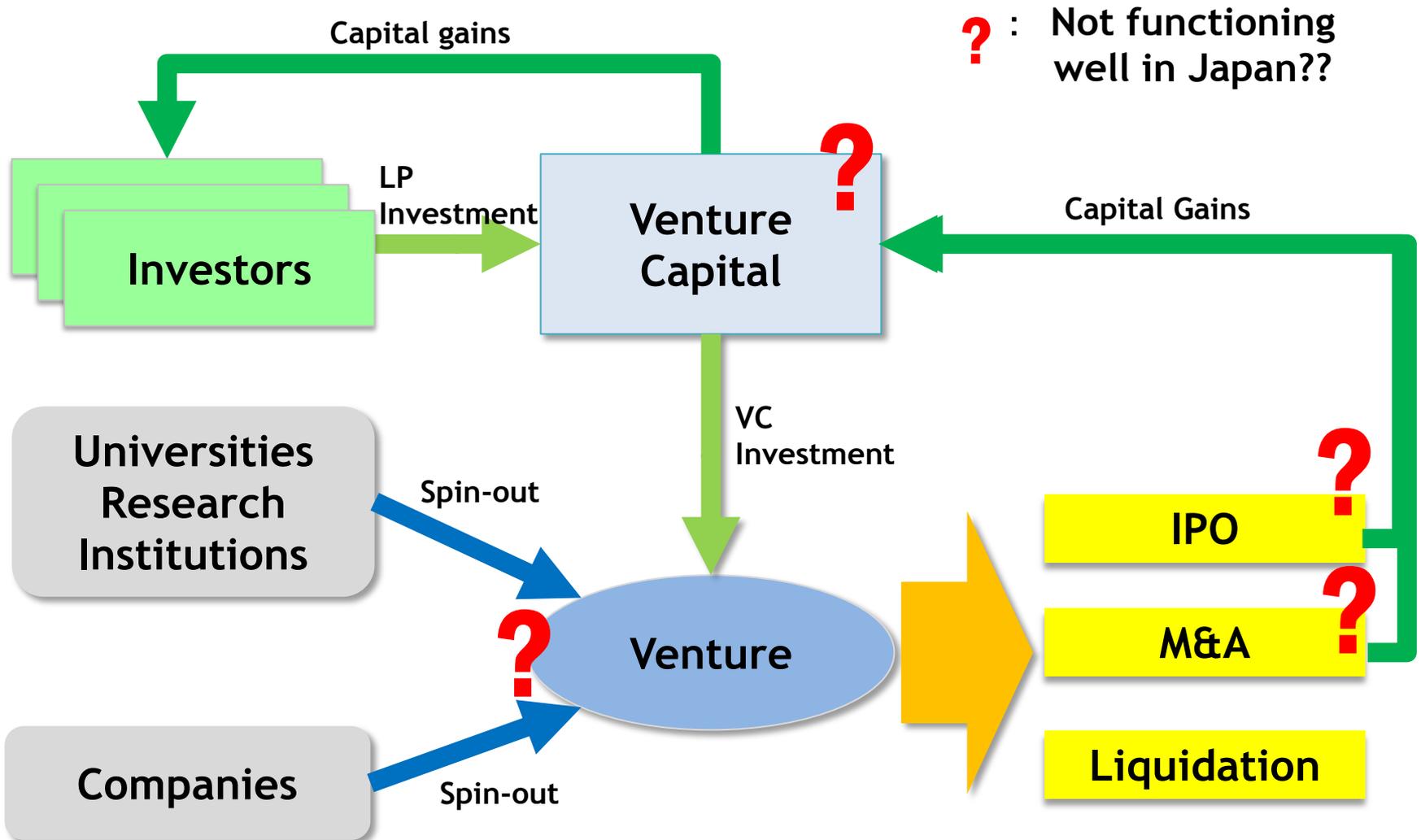
Issues for Fostering Venture Ecosystem

Environment fostered by History and Culture

- Demographics
  - Japan: Homogeneous; rapidly aging
  - US: Global immigrants nation
- Culture
  - Japan: "Nail that sticks out gets struck; Punitive for failures
  - US: Success brings both reputation and wealth; Generous to failures

Changes that can be Made with Efforts

- Enhancement of university business school, and corporate training programs
- Enhancement of professionals – lawyers, accountants, and consultants
- Fostering of venture capitalists capable of hands-on investment
- Promotion of industry-academic collaboration

Legal, Financial, Tax Measures

- Deregulation to encourage/ease university endowment and pension money to be invested in VCs
- Enhancement of Angel Investors through tax deregulation
- Expansion of stock options, preferred stock, and other instrument
- Enhanced portability of pension plans

3 Types of Japanese Companies

Future Growth

Large Established Corporation

- Grew big during the high economic growth era
- Stagnant since 2000
- Extrapolation of the past growth in planning the future growth
- Tend to look down upon small companies

"New Breed"

- Entrepreneurial management foundation
- Continued to grow through economic slowdown
- Clear growth vision involving structural changes
- Global business model

"Would be New Breed"

- Globally competitive technology
- May lack management skills to grow into big business
- May lack financial and human resources
- VC should be able to add value (supposedly)
- Large established corporations do not pay attention

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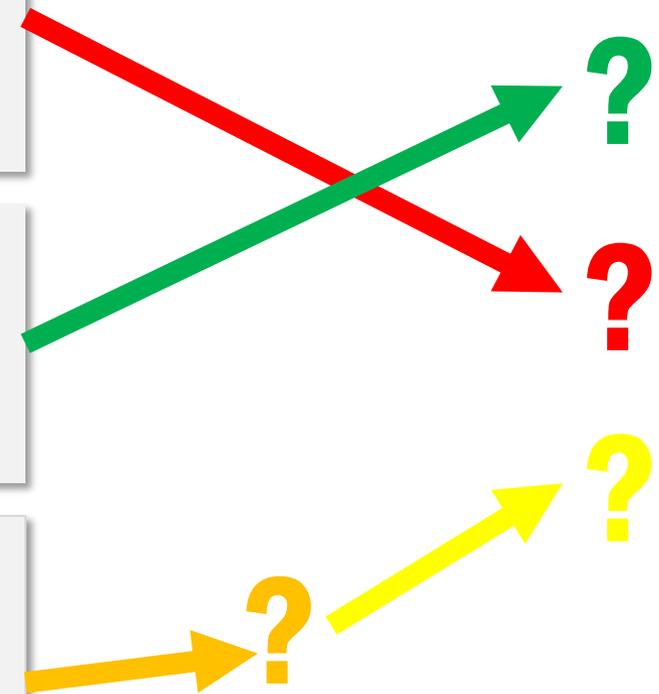
Increase M&A of Ventures by LECs

- Institutions (e.g., AIST, RIKEN) should hold technology show-case and exhibits technologies that would attract large corporations.
- MEXT and METI should provide opportunities for large corporations to meet with small companies and ventures.
- The Government should provide legal and tax incentives to encourage large corporations to acquire small companies and ventures.

"Brain Circulation"

Footprints of Asian Students (Today)
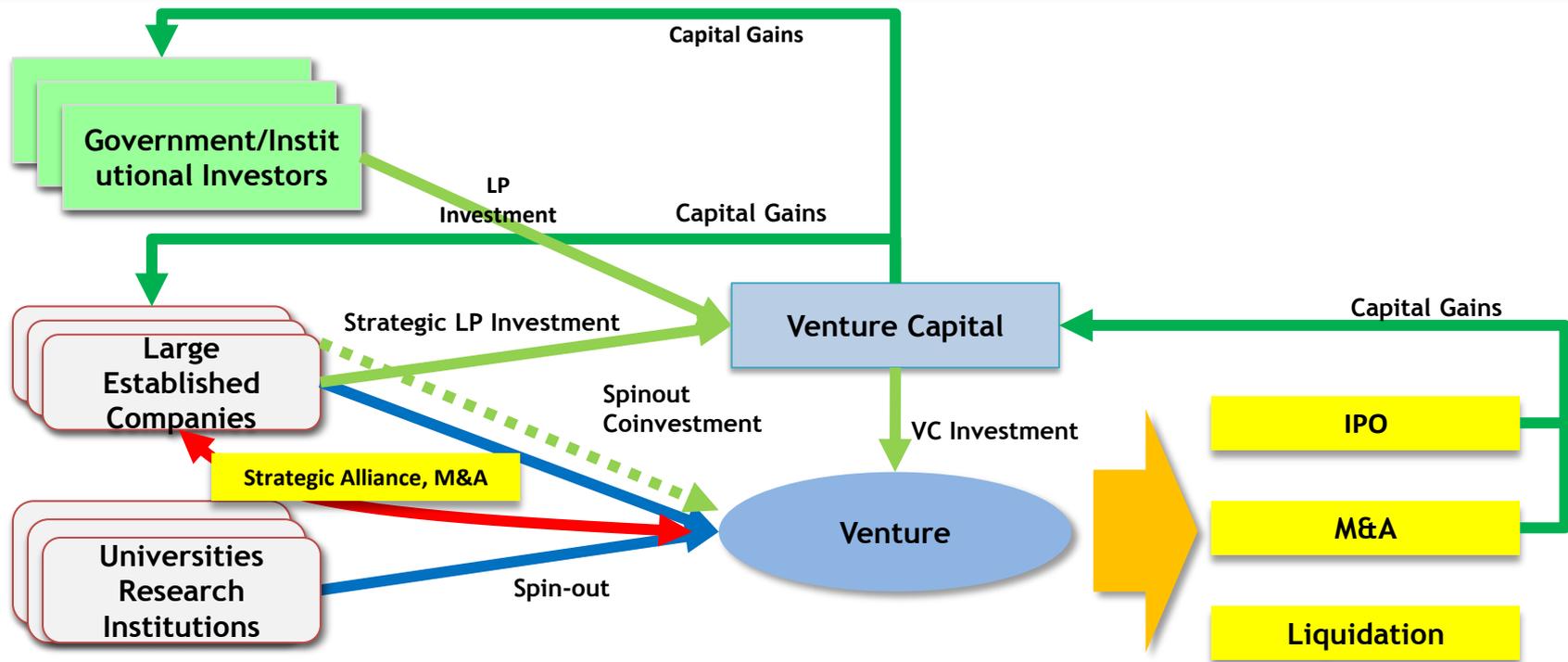
Promote Brain Circulation by capitalizing on SV innovation ecosystem

APU

- META: Program to send professionals to VCs in Silicon Valley
- INCJ*: Strengthen Network with Silicon Valley – establish INCJ-SV
- Large companies：Promote CVC、Global Human Resource Training in SV, Hire Global personnel
- Small companies and ventures：Capitalize on the support systems (e.g., JETRO BIC**)

Japan

Japanese Professionals (e.g., VC)

Small companies and Ventures

Silicon Valley

Japanese Professional Network

Support programs for Japanese companies （e.g., JETRO BIC）

Universities, Research Institutions

Venture Capital Firms
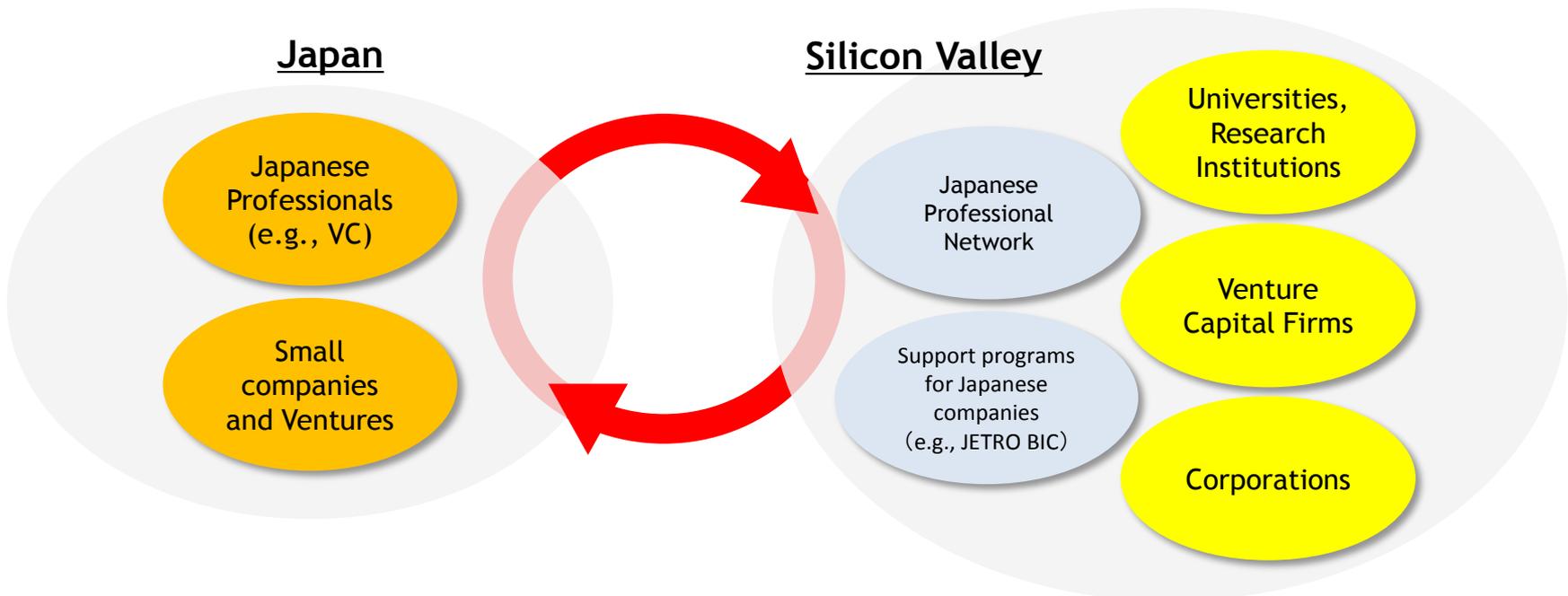
Corporations

*- Innovation Network Corporation of Japan
**- Business Innovation Center

How to Kill Ideas

- *We have never done that before.*
- *Has anyone else ever tried it?*
- *We tried that before, and it didn't work.*
- *If it was good – we'd already be doing it.*
- *It's too radical a change.*
- *That will make other equipment (or service) obsolete.*
- *Why change it, it's still working O.K.*
- *We did all right without it.*
- *We're doing the best we can.*
- *We are not ready for that.*
- *You're two years ahead of your time.*
- *We don't have the time.*

- *We are too small for it.*
- *That's not our problem.*
- *Too hard to sell.*
- *It costs too much.*
- *It's too hard, and it can't be done.*
- *That's beyond ou responsibility.*
- *It isn't in the budget.*
- *Can't teach an old dog new tricks.*
- *Let's form a committee.*
- *We'll be the laughing stock.*
- *That doesn't apply to us.*
- *It doesn't work in our industry.*