



SMEs and Regions: Innovating in a Global Economy



AnnaLee Saxenian, Dean & Professor
UC Berkeley School of Information

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Today's plan:

- *Research findings*
 - From self-sufficient corporations to regional ecosystems
 - Local and global networks support innovative recombination
- *Policy lessons*
 - There is no recipe
 - Competition as differentiation
 - Search locally and globally
 - Institutionalize change

20th century company

- Hierarchy
- Vertical integration
- Long term planning
- Internal job ladders
- Corporate loyalty



20th century innovation: R&D lab



Silicon Valley: regional ecosystem

- Entrepreneurship
- Experimentation
- Open boundaries
- Collective learning
- Resilience

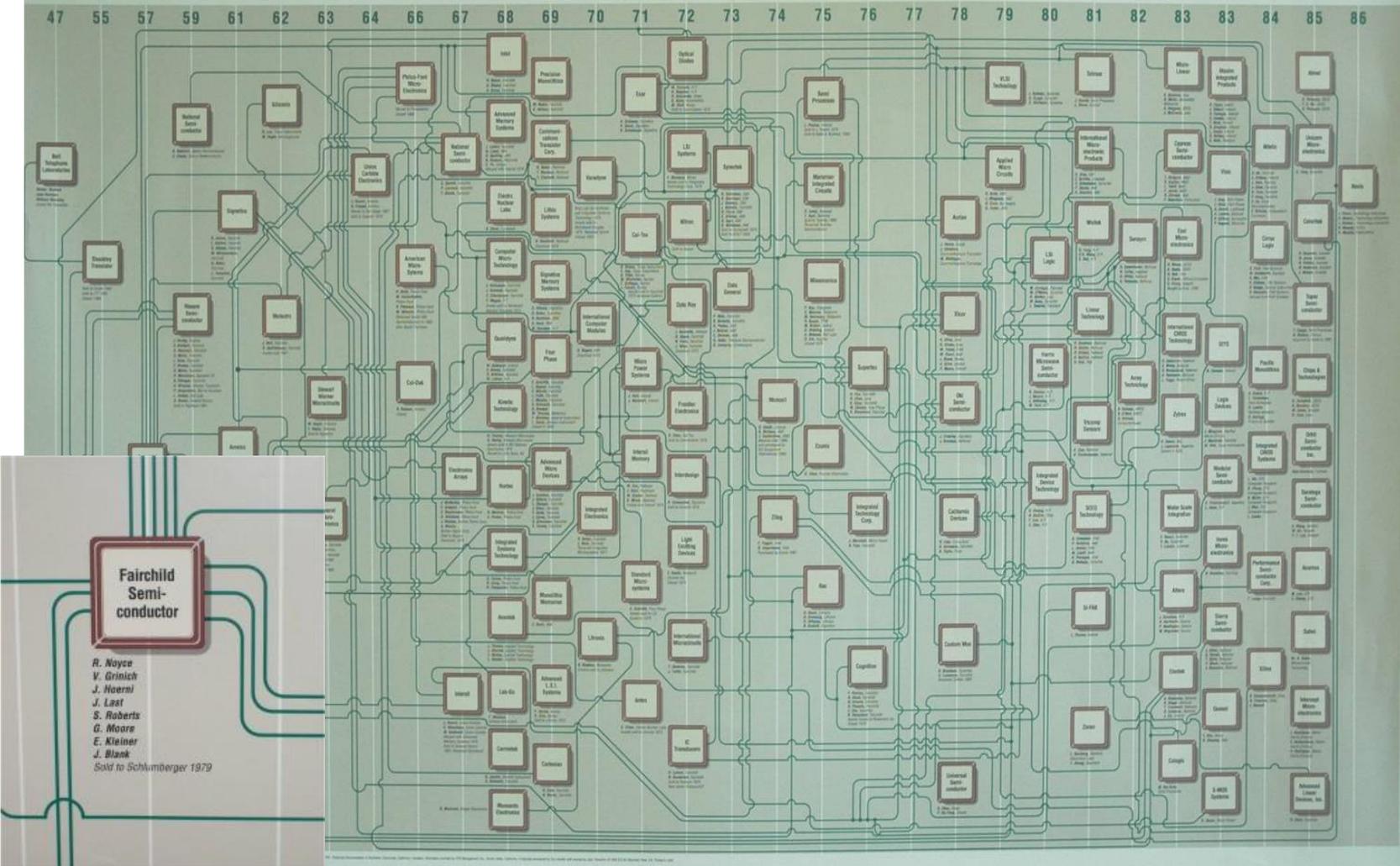


Institutional underpinnings

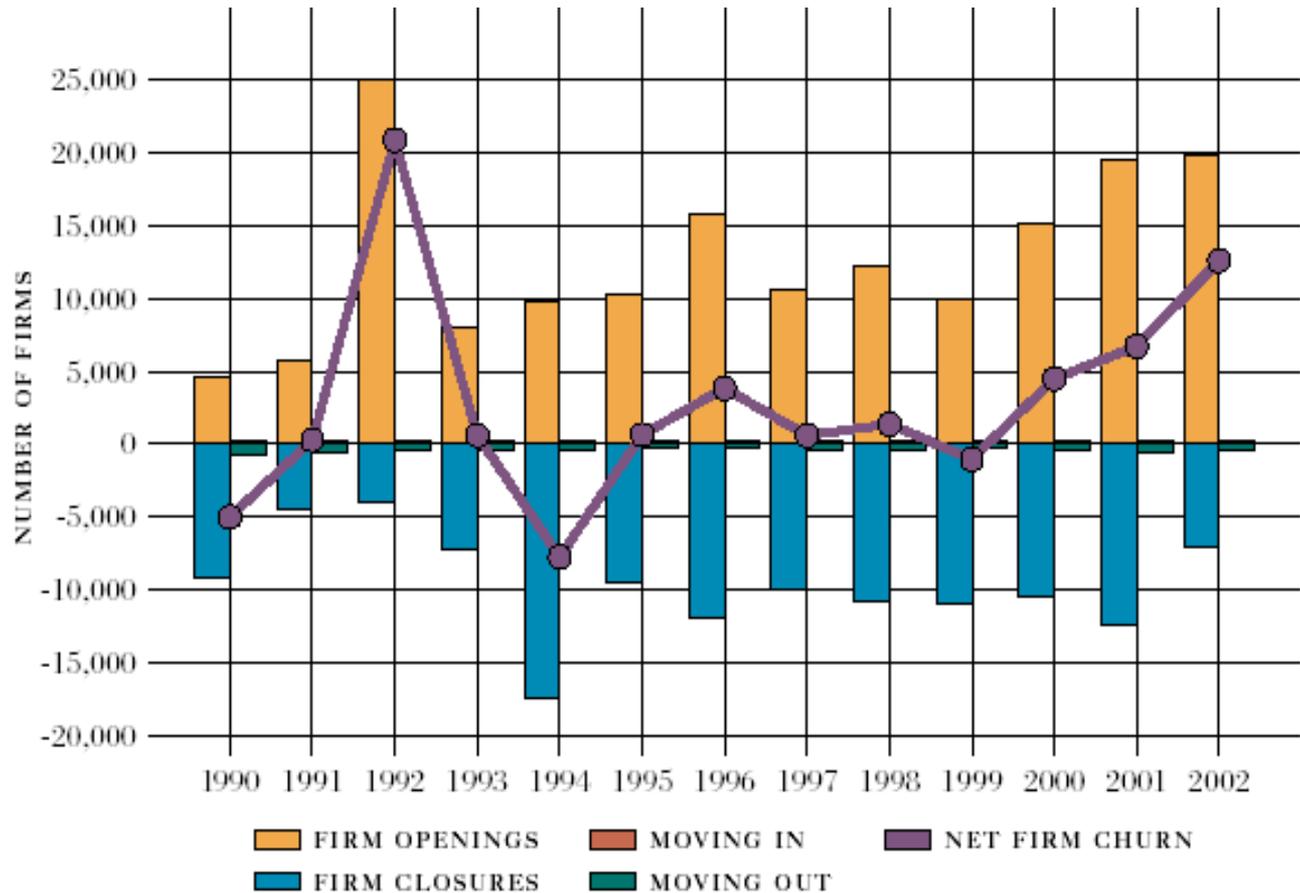
1. Federal research funding, 1940s-70s
2. State investments in infrastructure and higher education, 1960s-70s
3. Financial ecosystem: venture capital, etc.
4. Legal: non-competes not enforced
5. Culture of openness

Silicon Valley culture

SILICON VALLEY GENEALOGY



Proliferation of SMEs

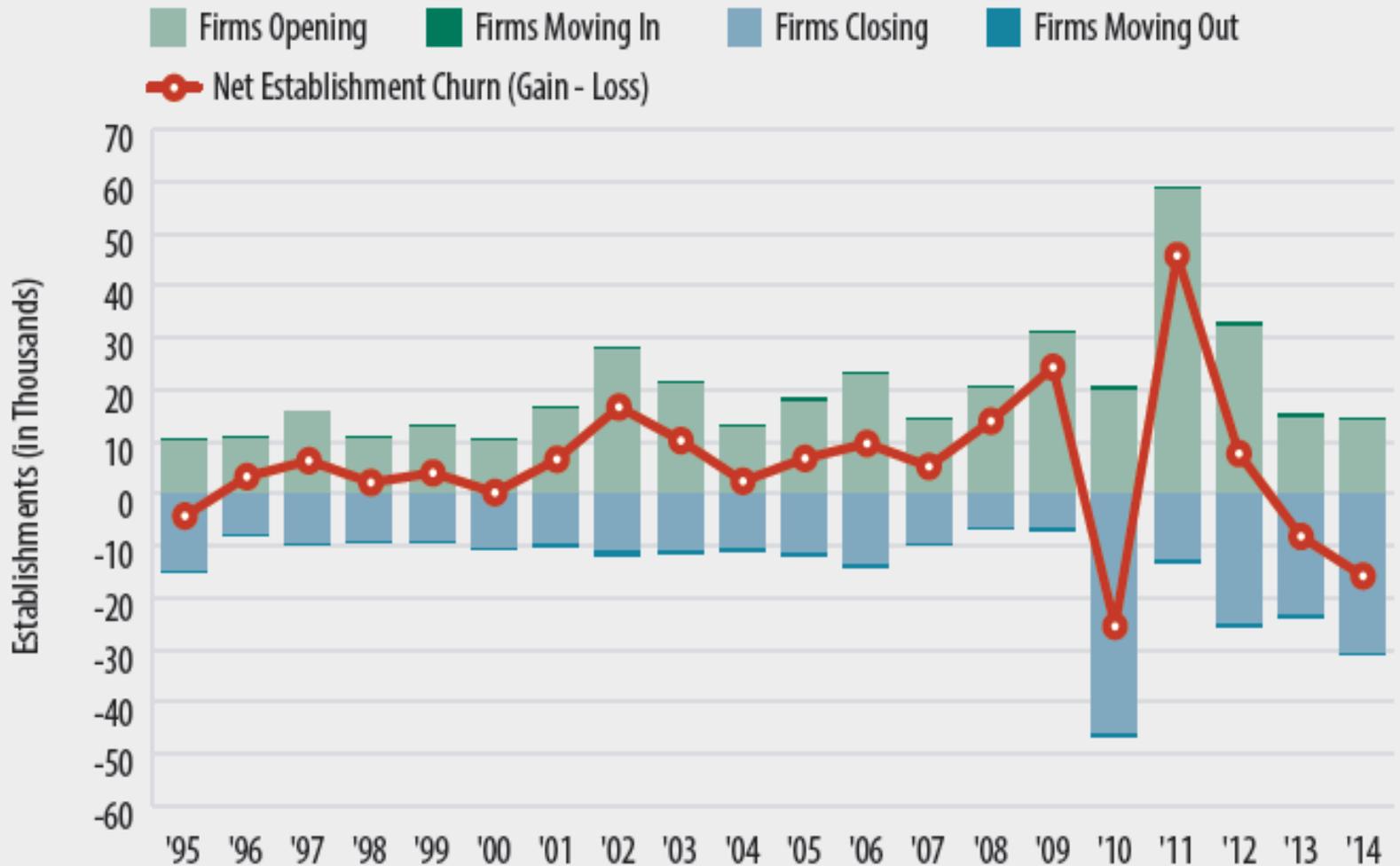


Over 29,000 companies started in 1990s; only one-quarter have 5 or more employees, most have 1-4

Entrepreneurial churn continues

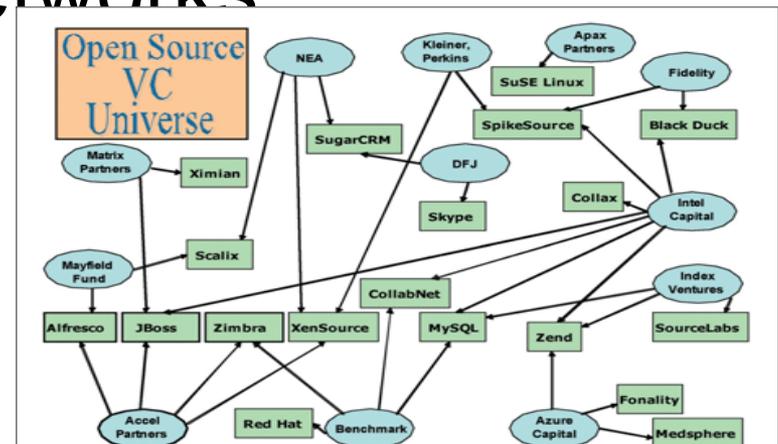
Establishment Churn

Santa Clara & San Mateo Counties



Local search supports SMEs

- Professional and technical networks
 - Alumni associations
 - Ethnic and technical networks
- Venture capital networks
- Informal social networks

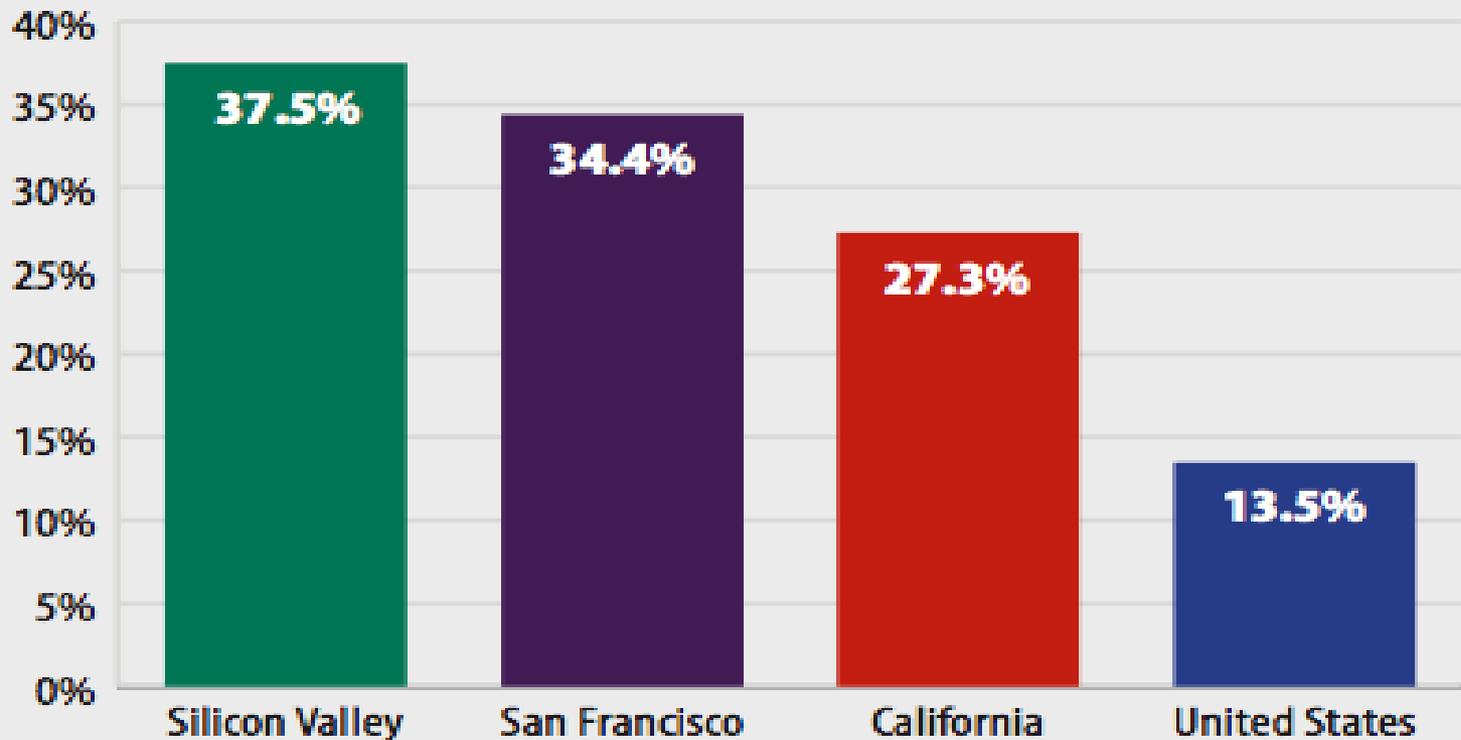


Silicon Valley absorbs immigrants

Foreign Born

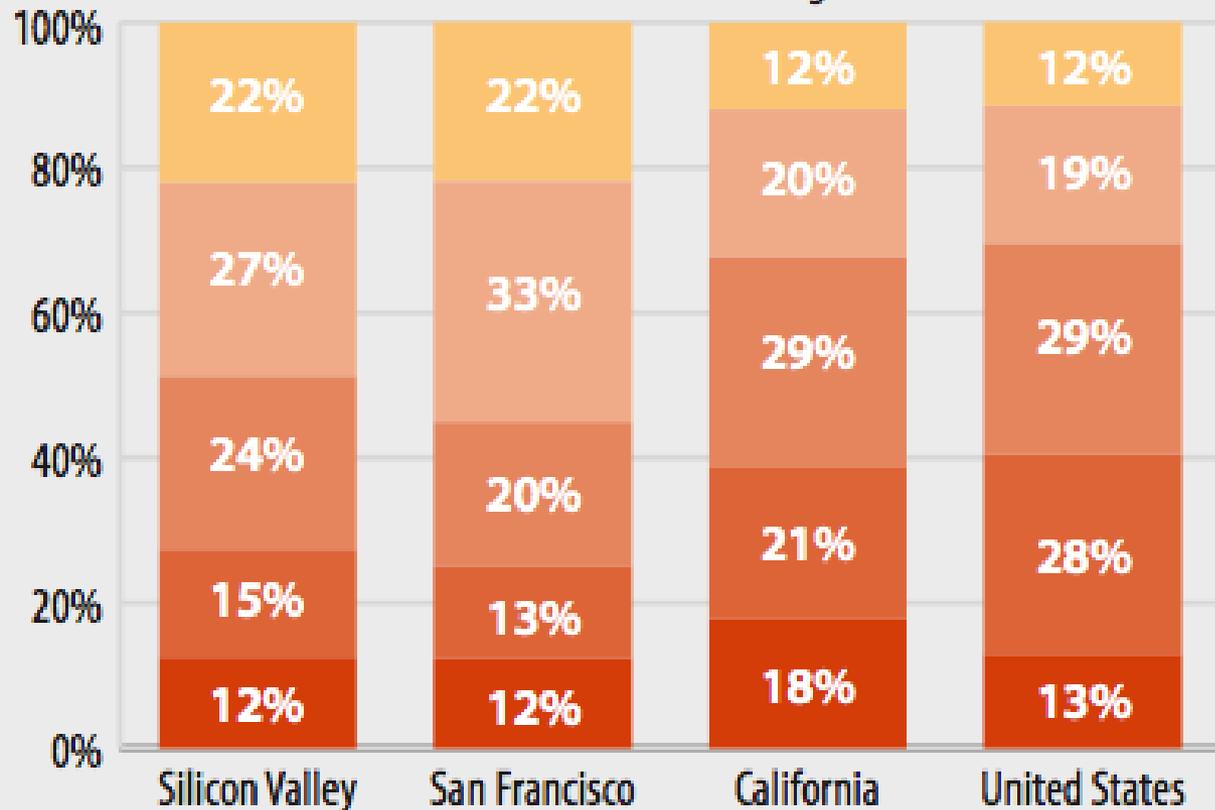
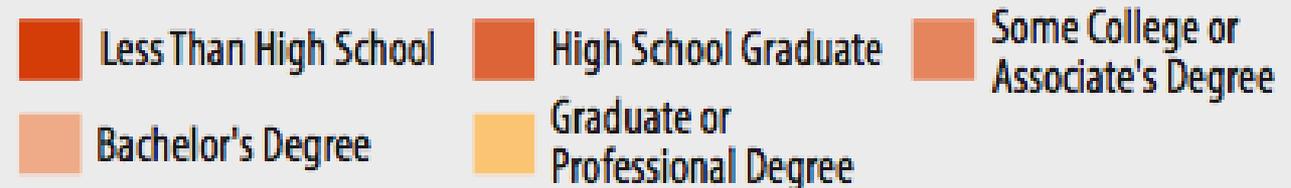
Percentage of the Total Population Who Are Foreign Born

Santa Clara & San Mateo Counties, San Francisco, California, and the United States | 2015



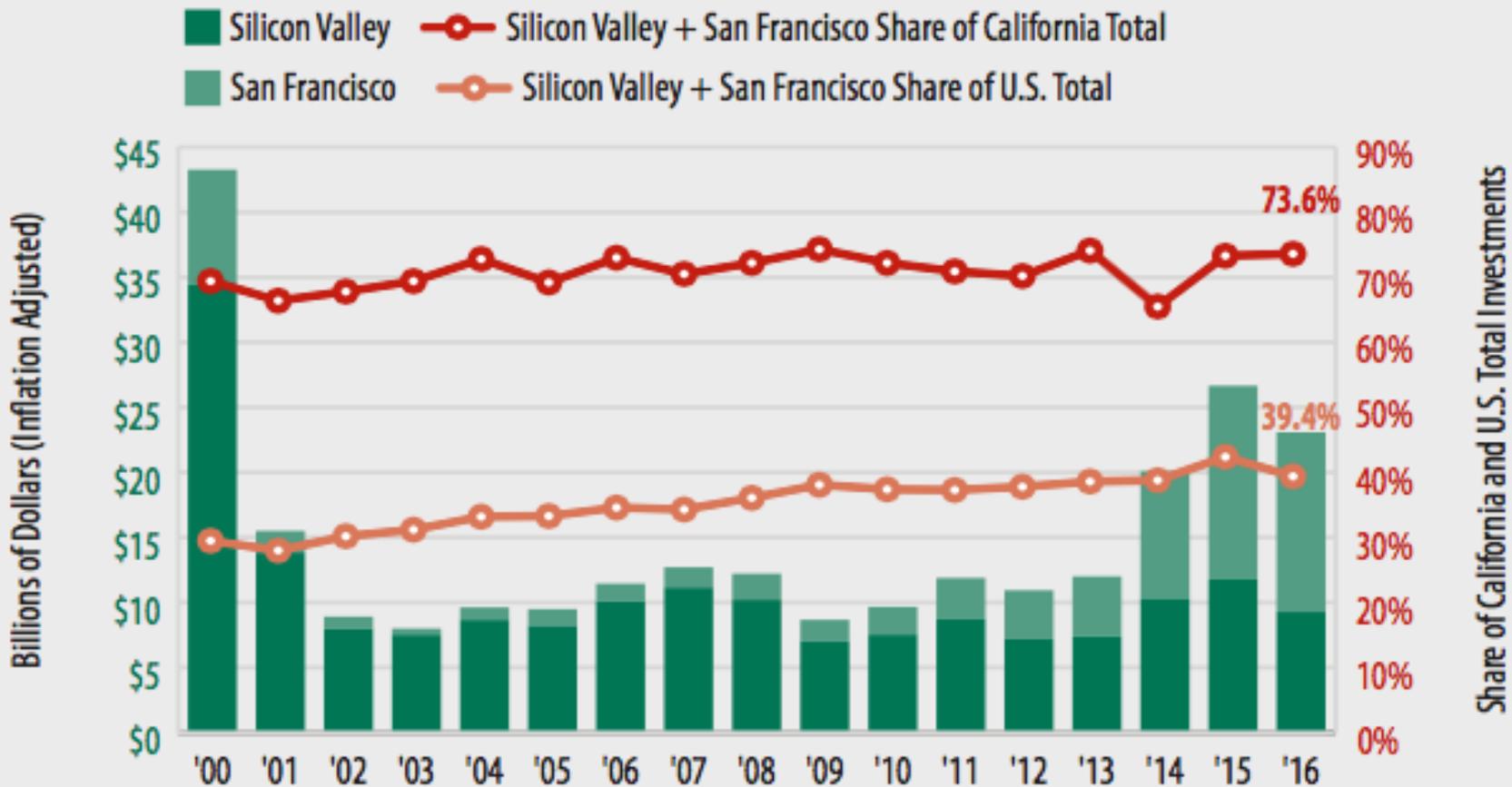
. . . and the highly educated

2015



Venture capital remains 40% of US

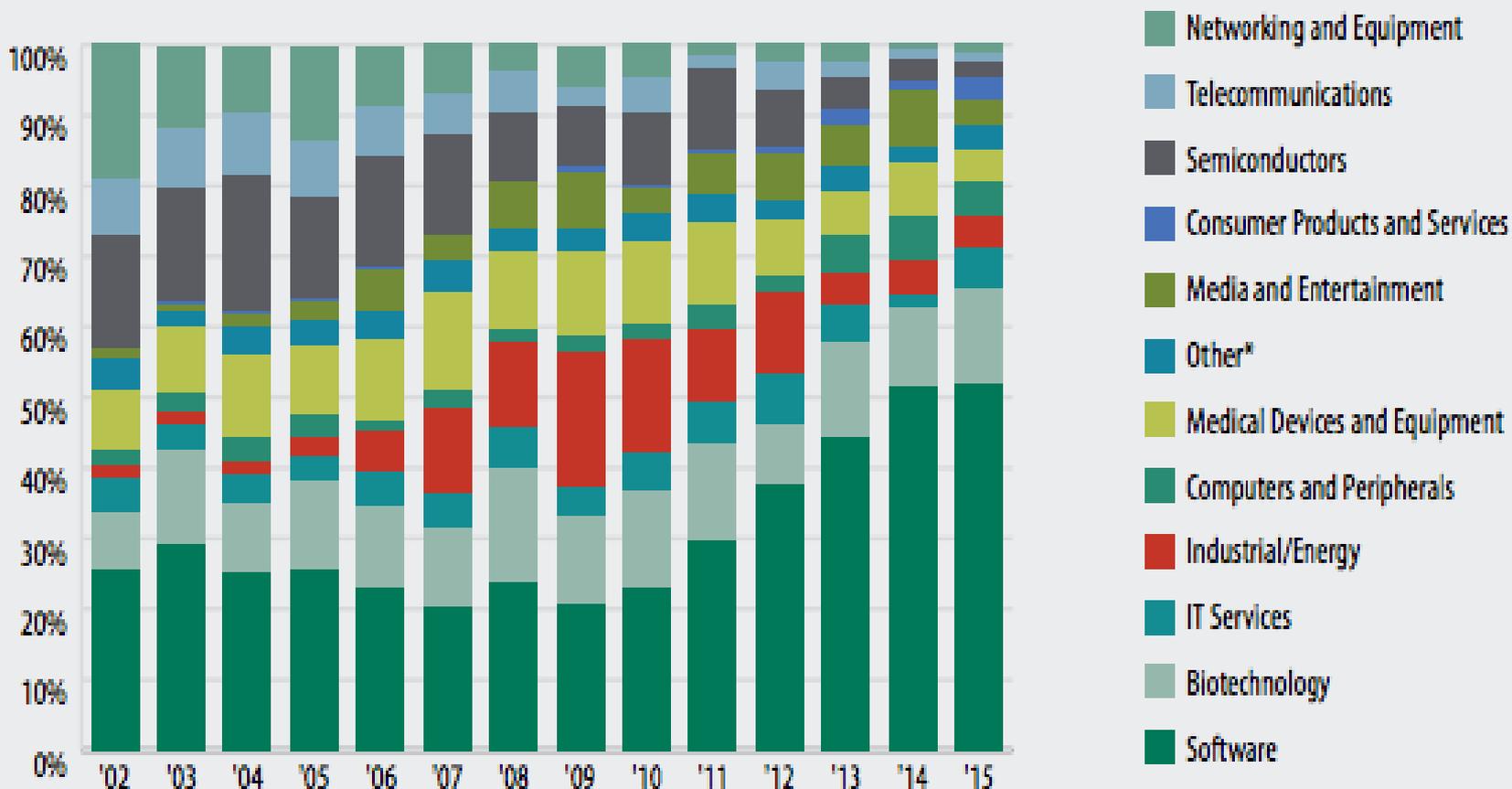
Silicon Valley and San Francisco



Venture capital by industry

Venture Capital by Industry

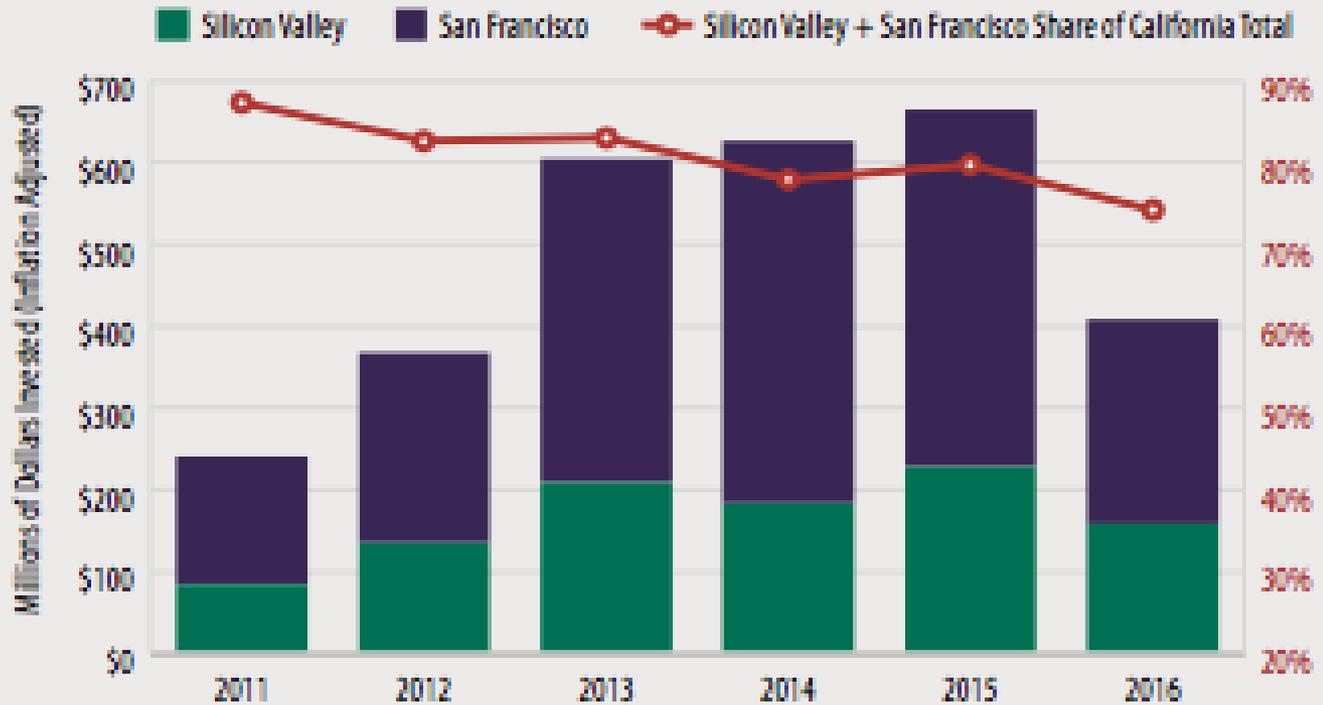
Silicon Valley



Financial diversification

Angel Investment

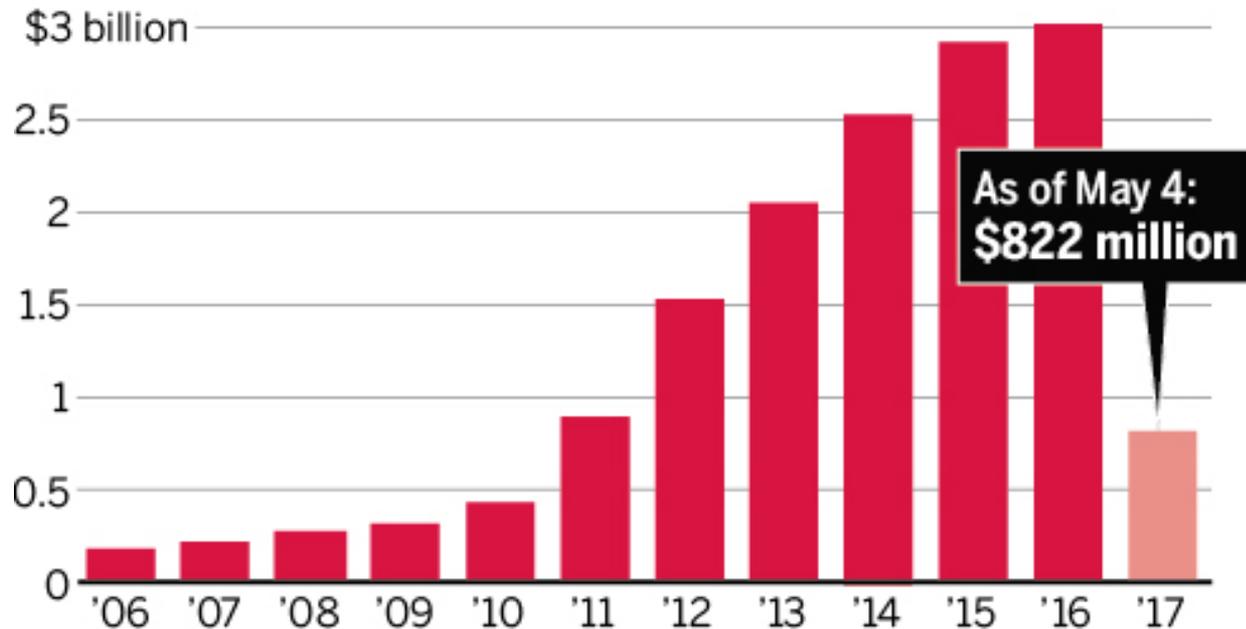
Silicon Valley, San Francisco, and California



Growth of early stage investing

THE GROWTH OF EARLY-STAGE INVESTING

Investors in the U.S. poured more than seven times as much cash into early-stage or “seed” deals last year as they did in 2010. The jump in early-stage spending far outpaced the growth of the overall market, which saw deal value roughly double during that time.



Source: PitchBook Data, Venture Monitor report by PitchBook,
National Venture Capital Association

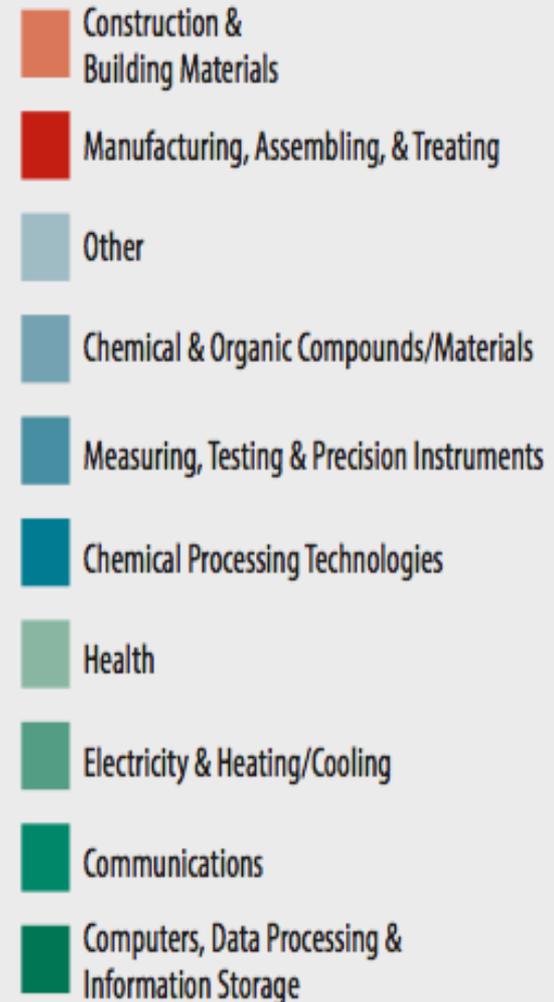
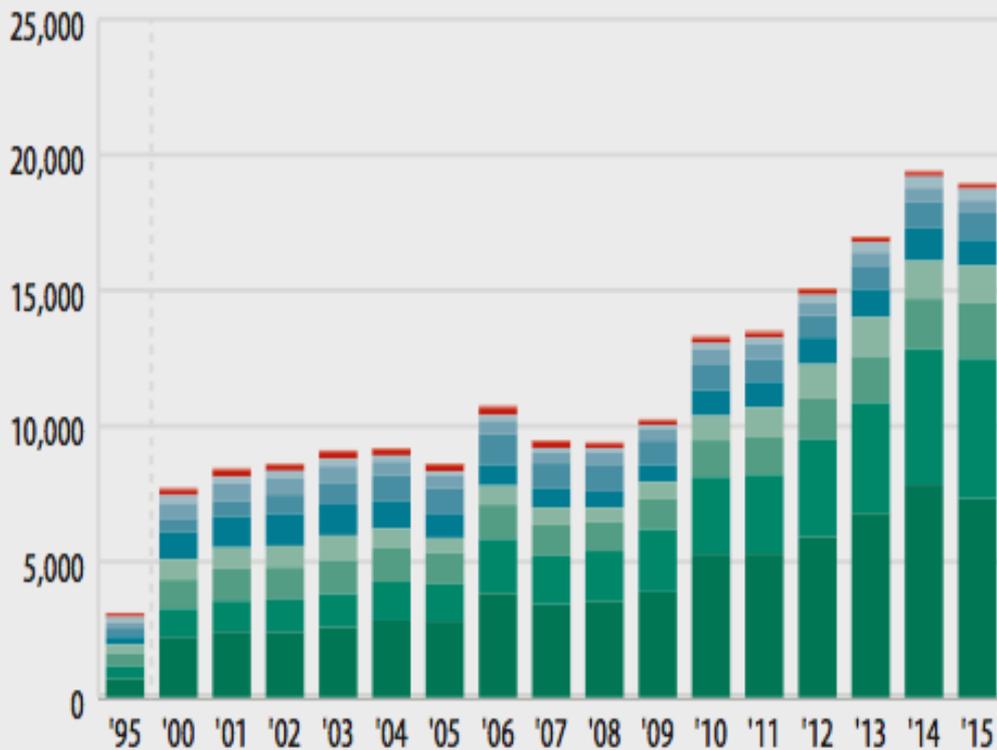
BAY AREA NEWS GROUP

Innovative recombination

Patent Registrations

By Technology Area

Silicon Valley



New global firms every decade



1940-60

1970

1980

1990

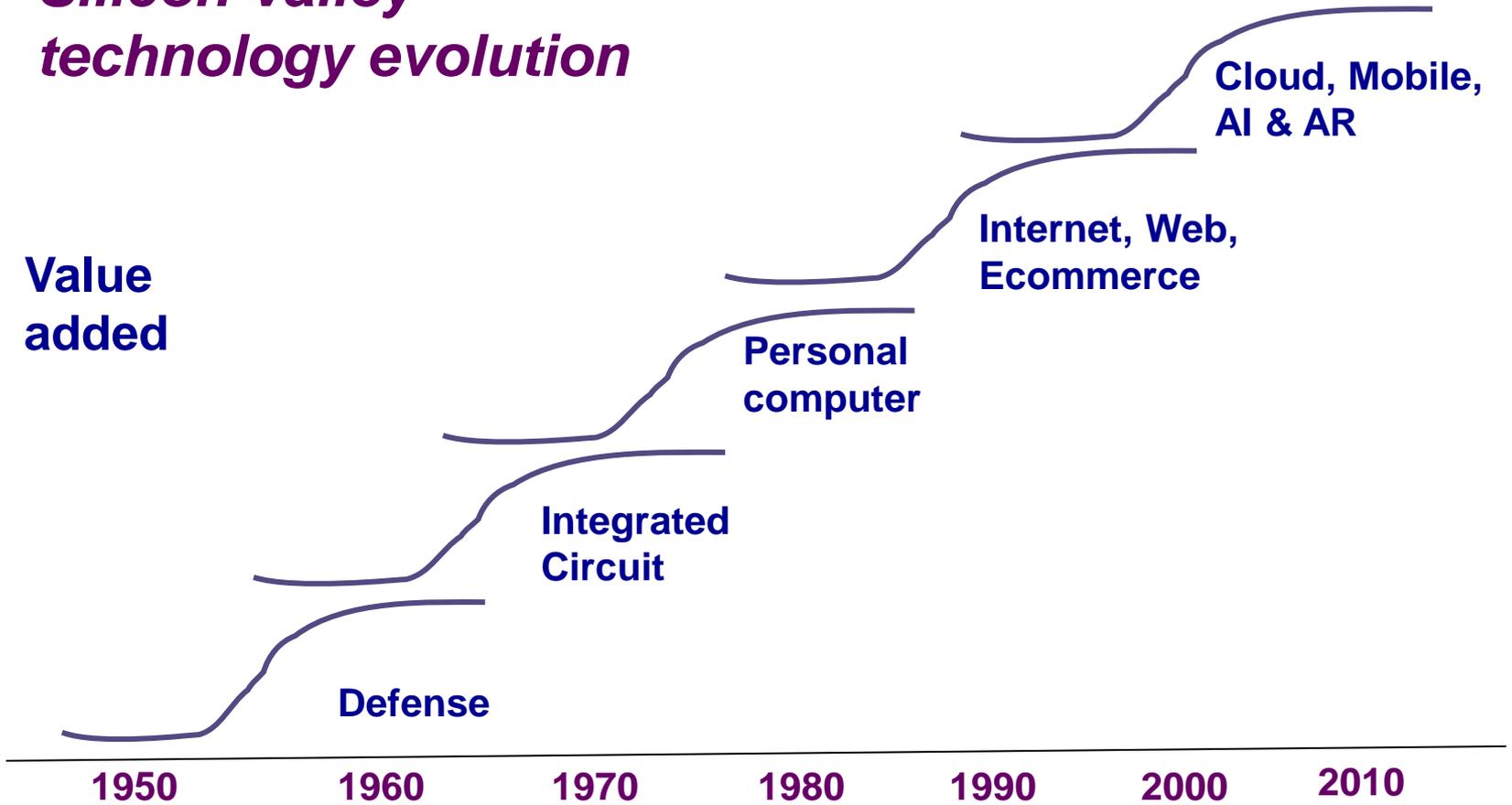
2000

2010

Technological evolution, 1950-2015

Silicon Valley -- technology evolution

**Value
added**



Global competitive environment

Information technology revolution means:

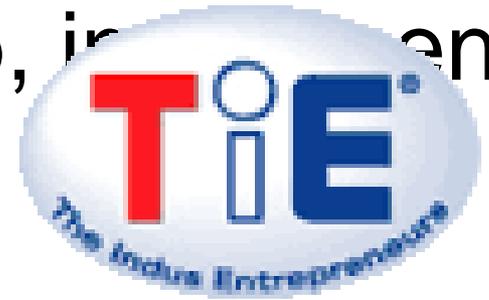
1. Dramatic increase in potential solutions to problems – end of fixed technology trajectories
2. Innovative solutions can come from anywhere

*Rise of
global supply
chains*



Rise of Diaspora networks

- Ethnic and technical identities/networks
- Professional mentorship, in-country events
- Links to home countries



HYSTA



Taiwan: from SV imitator to SV partner

1960 & 70s- GDP per capita < \$2500

1980s- Reverse engineer/clone pcs, OEM for US
Consult overseas Chinese, reform institutions

1990s- Return entrepreneurs, stock market boom

2000s- Global leader in IT systems production

- Perfects flexible, high quality, low cost systems
- Pioneers and dominates silicon foundry business



SV-Taiwan-China global networks



FOXCONN

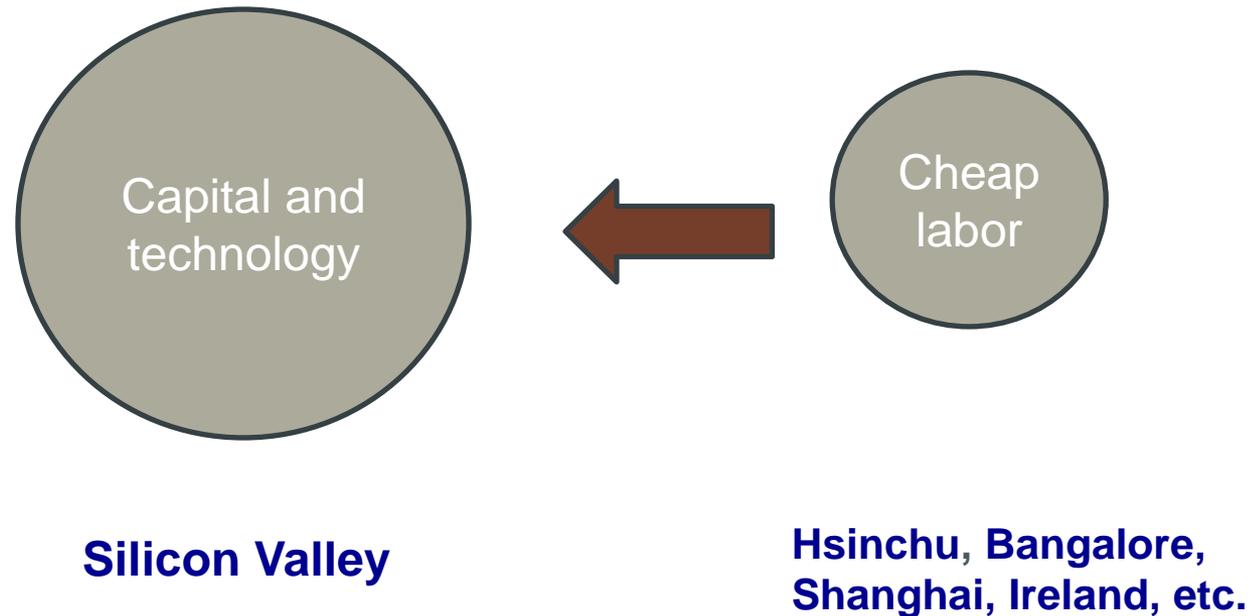


INNOLUX

Sintek

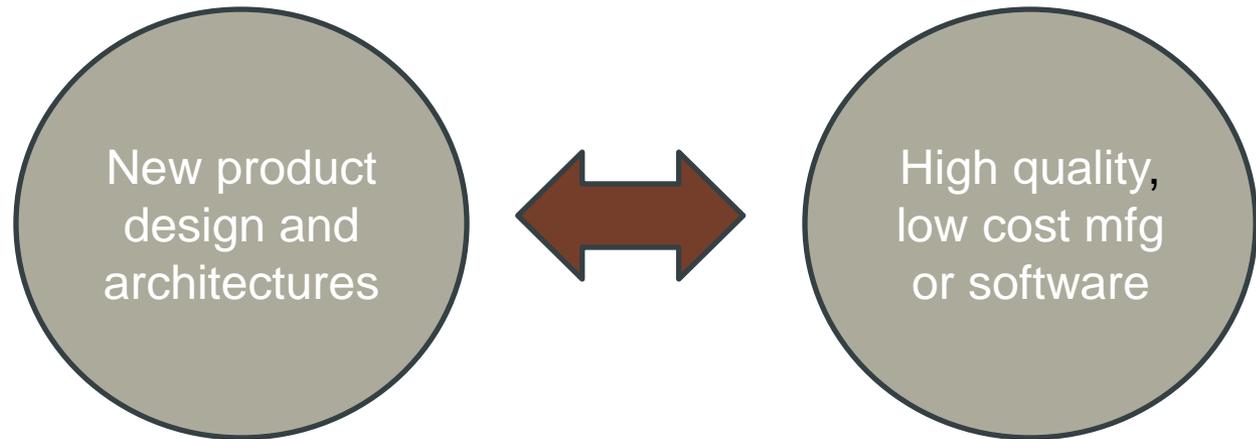
From core-periphery. . .

MNCs invest in periphery for lower cost labor, land, etc.



. . .to reciprocal regional upgrading

Two way collaborations between specialized firms of all sizes



Silicon Valley

**Hsinchu-Taipei,
Bangalore, etc.**

Today's plan:

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- *Policy lessons*
 - There is no recipe
 - Compete by differentiating
 - Search locally and globally
 - Institutionalize change

Lesson 1. There is no recipe



Recipe 1. Perfect “free” markets

- Remove trade barriers
- Minimize regulation
- Privatize state-owned businesses
- Macro-balance: “get prices right”
- Protect property rights



Recipe 2. “Grow” Silicon Valley

Silicon Valley Recipe

- Technology park
- Incubator
- University research
- Venture capital
- Lots of engineers

Partner with, rather than try to replicate, Silicon Valley.

Skolkovo technology park

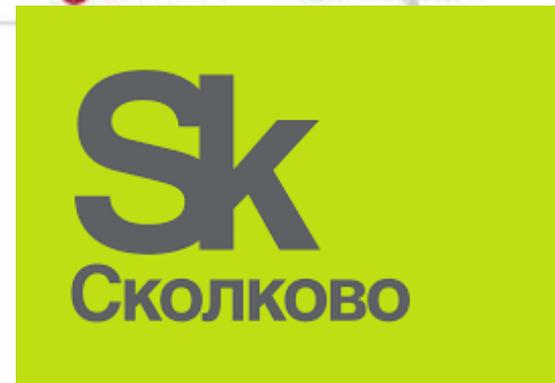
An ultra-modern science community for the development and commercialization of new technologies will be built in the Moscow Region.

25,000 to 30,000 people will work and live in Skolkovo.



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Recipe 3. Build national innovation

- Support national “champions”
- Invest in national innovation system
- Fund strategic technology sectors



Lesson 2. Differentiate locally

... and lower costs later

Cost-cutting doesn't offer sustainable advantage and undermines regional ecosystem



Identify local strengths

Build networks that help:

- Identify distinct firm/regional capacities
- Locate untried markets

Identify public inputs to support growth

Experiment and iterate

*Public-private
partnerships*



Invest in local capacities, inputs

- Invest in building local capabilities e.g. Training, research on new processes, technical assistance, standard setting, export promotion, IP protection, etc.
- Industrial/agriculture extension



Lesson 3. Connect globally

Connect to, rather than try to replicate, dynamic firms and regions

- Global connections are necessary, but not sufficient
- Scan externally for markets and partners
- Partner to jointly solve shared problems



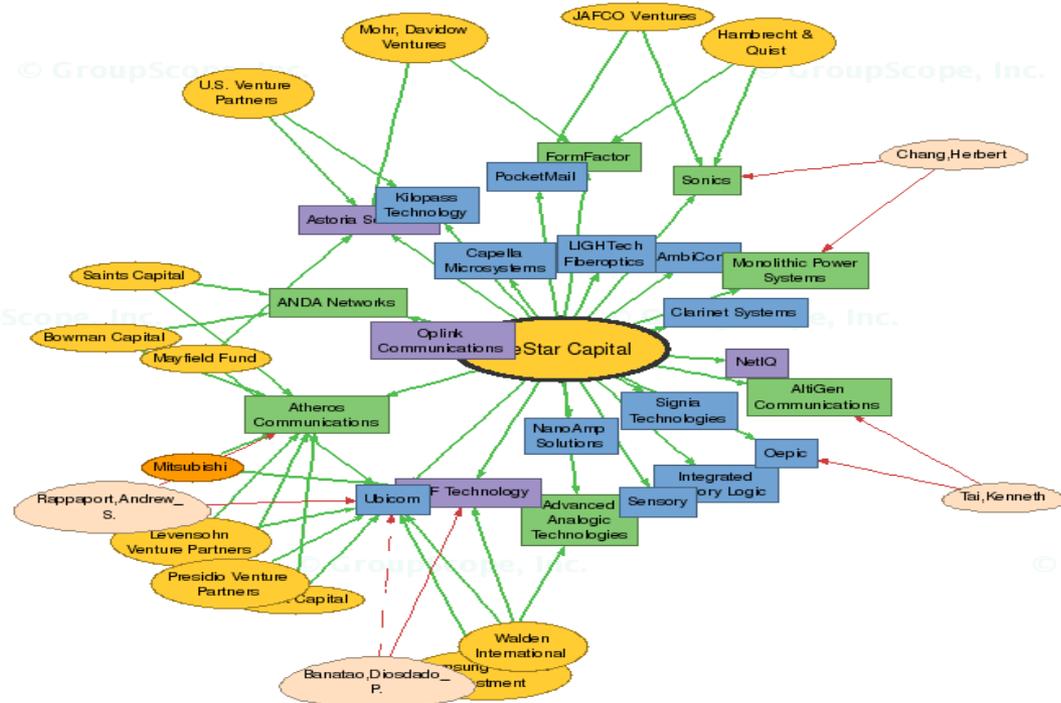
Diaspora as global search network

- Help policy makers define strategy
- Transfer global “best” practice
- Identify new markets and partners
- Broker technology or institutional adoption
- Overcome political opposition to reform



VC and global search networks

LinkSViewer Relational map for investor 'InveStar Capital'



Active Companies: ■ Private ■ Public ■ Acquired
 Investors: ○ Individual ○ Venture Capital ○ Corporate
 People: ○ Board Member* ○ Management Team
 * Board Members also on a Management Team are colored as Board members
 Hint: Double-click on any person to see their LinkSV profile pop-up
 Background: ▲ School ■ Experience

— Investor to Company; Capital Investment
 — Person to Company; Current Management Team
 — Person to Company; Current Outside Board Member
 - - - Current Advisory Board Member
 . . . Current Board Observer
 — Person's current affiliation
 — Person's past experience
 — Person's education; school attended



Diasporas and “peripheral” innovation

Tel Aviv, Israel



Bangalore, India

Ireland: Inward FDI as a search network



Case of Armenia



Lesson 4. Support institutional change

Technology, capital, skill necessary, not sufficient

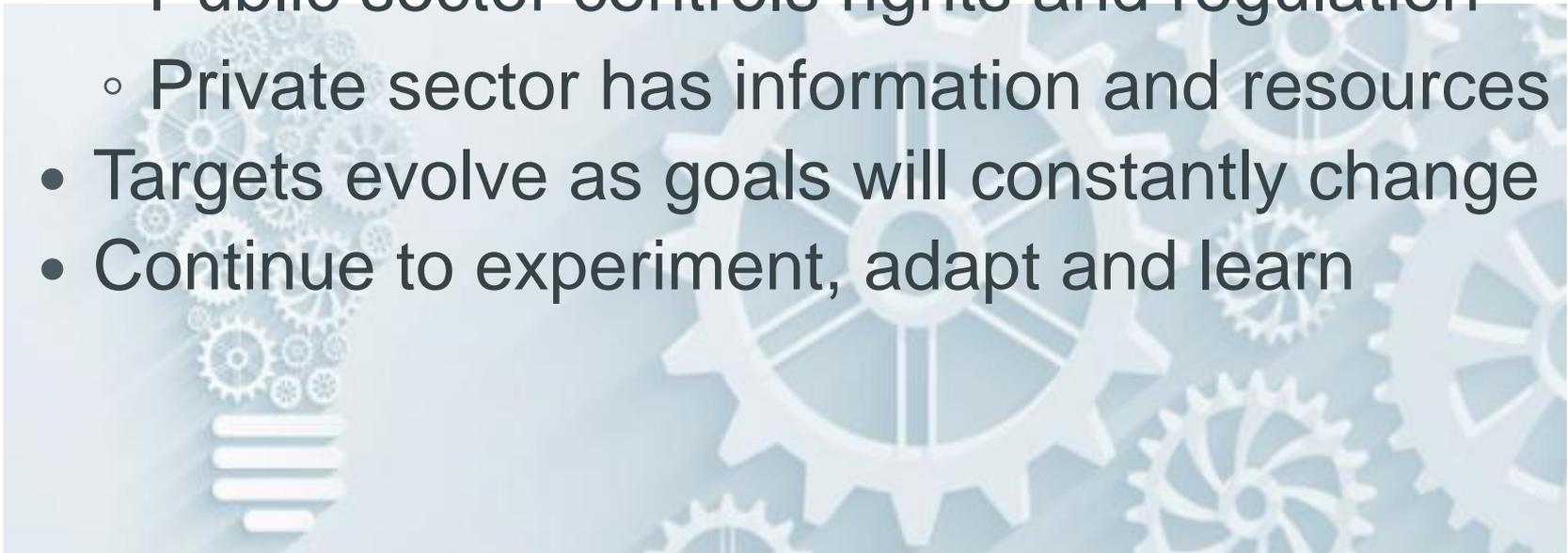
Economic development requires institutional change, e.g.

- Transparency, e.g. financial markets
- Competitive markets, e.g. telecoms
- Political and legal predictability, e.g. IP rights
- Minimize corruption



Open-economy development policy

- Create institutions for external search, partnering
- Build public-private sector partnerships
 - Public sector controls rights and regulation
 - Private sector has information and resources
- Targets evolve as goals will constantly change
- Continue to experiment, adapt and learn



Goal: incremental upgrading

- Incremental upgrading via specialization and collaboration—locally and globally—*cumulates to sustained growth*





Questions and comments

Professor AnnaLee Saxenian
anno@berkeley.edu