Engineering 145
Session 2
Silicon Valley and Entrepreneurship

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Stanford University

Agenda

1. Admit and Waiting List
2. Discussion of Stanford and Silicon Valley - Culture and History by Tom
3. The "Micro" Perspective: Key Technology Entrepreneurship Frameworks - Chi-Hua, Alex, and Tom
4. The "Macro" Perspective: Entrepreneurship and the Capital Markets - Alex and Chi-Hua
5. Opportunity Analysis Project, Mentors, and Study Team Formation - Chi-Hua, Tom, Alex
6. Guest Speaker: Alicia Morga, Consorte Media

Culture and History:
First, A Look at Stanford University

Culture and History: Early Years -- Fred Terman and HP

- Professor Terman brought Hewlett and Packard together at Stanford
- In 1939, the two decided to "make a run for it ourselves" and founded HP at a now-famous garage in downtown Palo Alto

Source: John Hennessy

Culture and History: Another Golden Age -- Early 1980s

- Many new technologies as radical innovations
- Emergence of John Hennessy as another Terman
- Very productive era ...

Culture and History: 1990s -- The Internet

- Two EE students in a trailer
- Use of Yahoo on and off-campus explodes
- Form independent company

Source: John Hennessy

Culture and History: 2000s

- Two students dissatisfied with Net search
- They work furiously in their spare time to develop a better way
- They form a company to exploit the opportunity others had left behind

Google™

Culture and History: 2000s Continued…

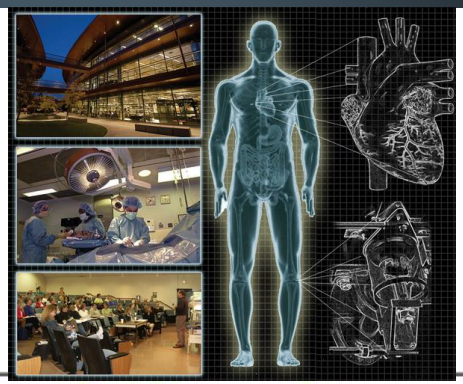
- Stanford alumni launch a variety of new ventures in web 2.0, clean tech, and life sciences

LinkedIn

OPEN Floodgate
Letting creativity flow

YouTube
Broadcast Yourself™

TESLA MOTORS



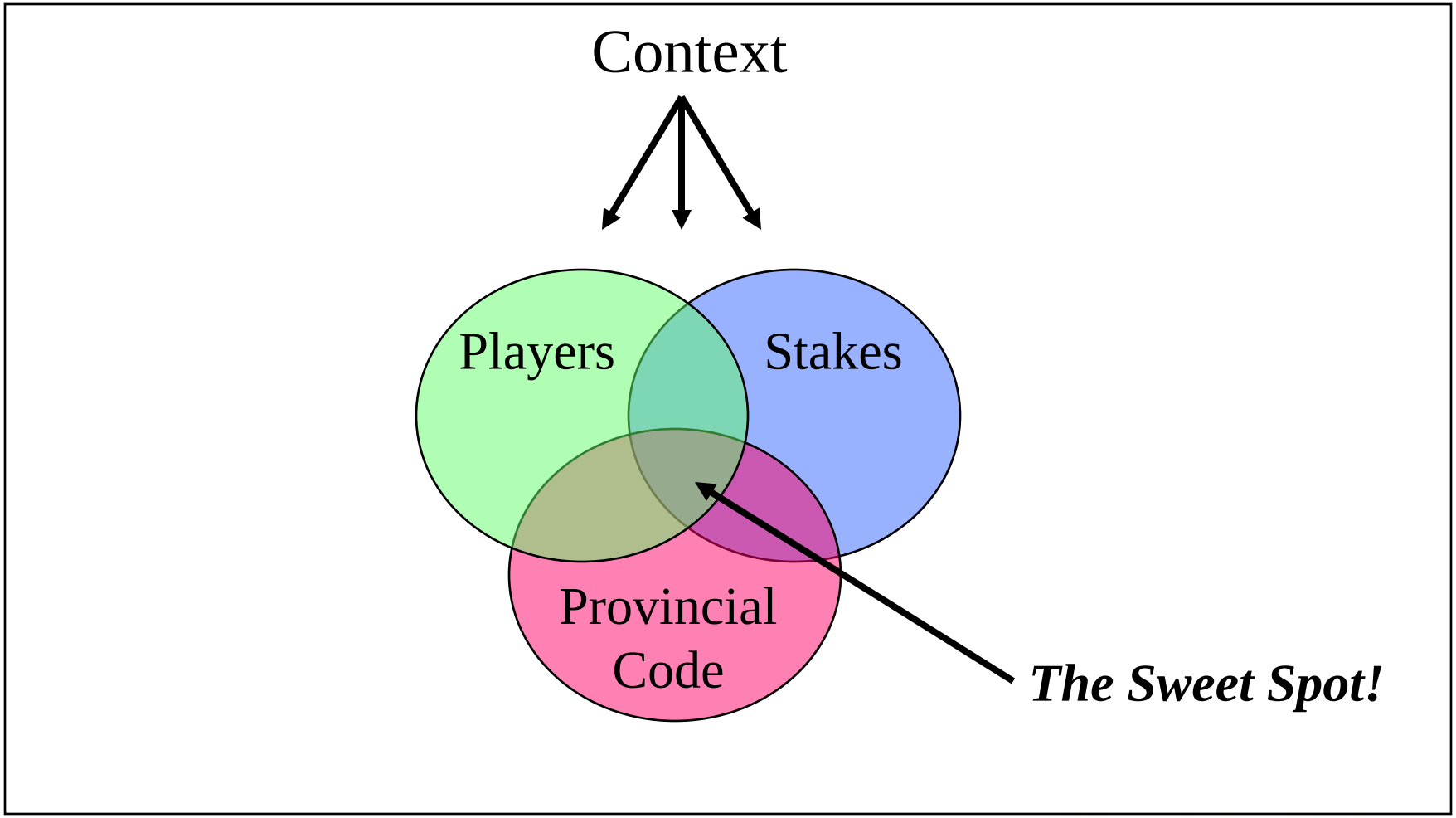
Culture and History: Stanford's Role in Silicon Valley

- Interaction with industry (via legacy just discussed)
- Research funding and creativity
- Silicon Valley as a nearby planting ground for ideas
- Role of students as inventors, as disseminators, and as part of the workforce
- Encouraging entrepreneurship …

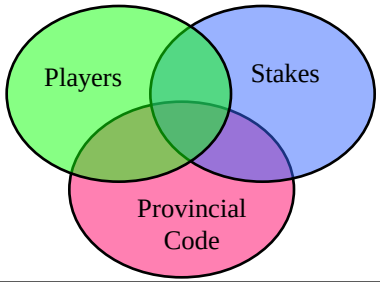
Culture and History: More Success Factors

- Talent pool and social networks
  - ✓Loyalty to the technology with a unique openness
  - ✓Highly skilled and motivated
  - ✓Diverse (highly multicultural)
- Many early adopters of new technology to quickly learn from
- Services infrastructure with many suppliers for outsourcing
- Venture capital for both financing *and* team building
- Entrepreneurial spirit
  - ✓Role models that demonstrate both confidence and paranoia
  - ✓OK to fail, learn from it, and then try again
  - ✓Flat organizational structures
  - ✓OK to talk/partner across company boundaries about common issues

Circles of Influence: A model to analyze Silicon Valley and its Context.



Context surrounds the Circles of Influence

Culture	Natural Resources	Justice System
Religions	Capital Markets	Political System
Ethics & Values	Labor Pool	Tax System
Languages		Education
Family Structure		Health Care
Climate	Technology	Welfare
Ecology	Communications	Public Safety
Geography	Transportation	Military

But Circles of Influence can shape the context.

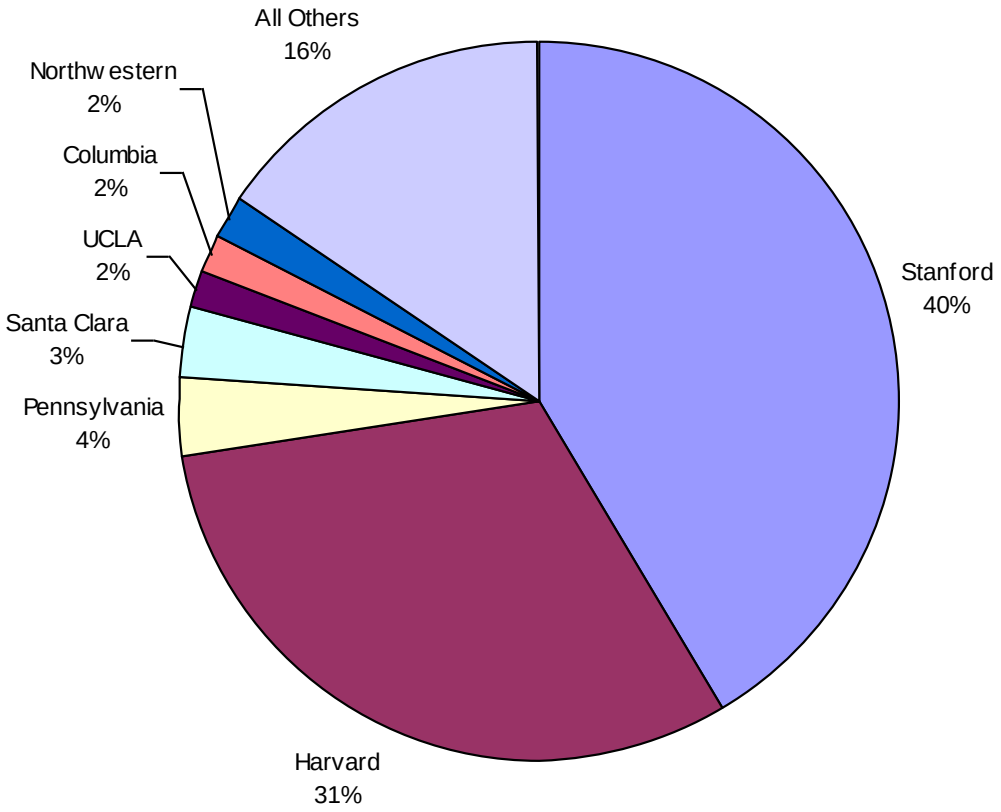
Culture and History: A Paradox

- The Conventional Wisdom:
  - Silicon Valley is a meritocracy.
- The Paradox:
  - Academic aristocracies sing praise to meritocracy

Would you expect such dominance of Stanford MBAs in a pure meritocracy?

Figure 4-3 VCs with MBAs from Leading Universities

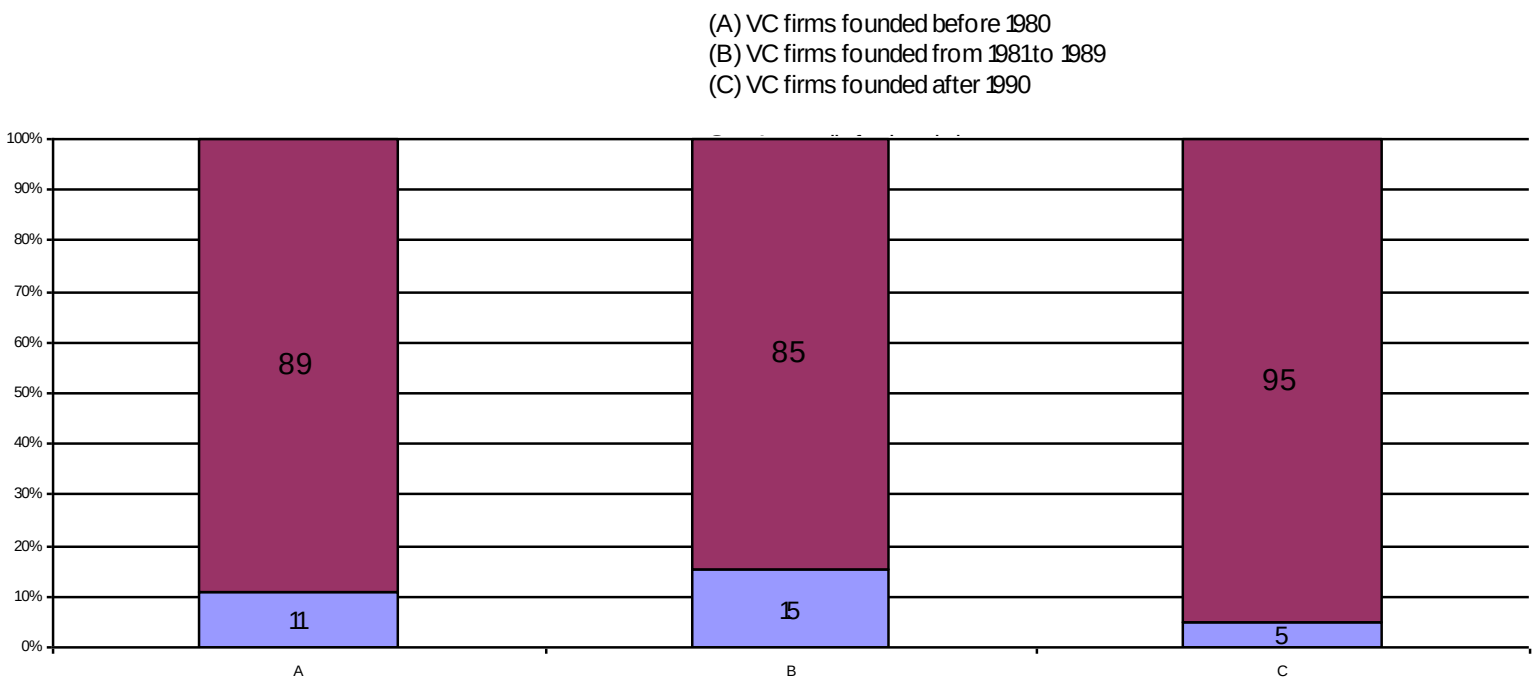
Source: Sample of 164 VC professionals from 21 Silicon Valley firms,



Would you expect such dominance by males in a pure meritocracy?

Fig 4.5: Gender Distribution in VC Firms of Different Founding Periods

Source: Sample of 323 VC professionals from 20 Silicon Valley firms in



Questions for Discussion

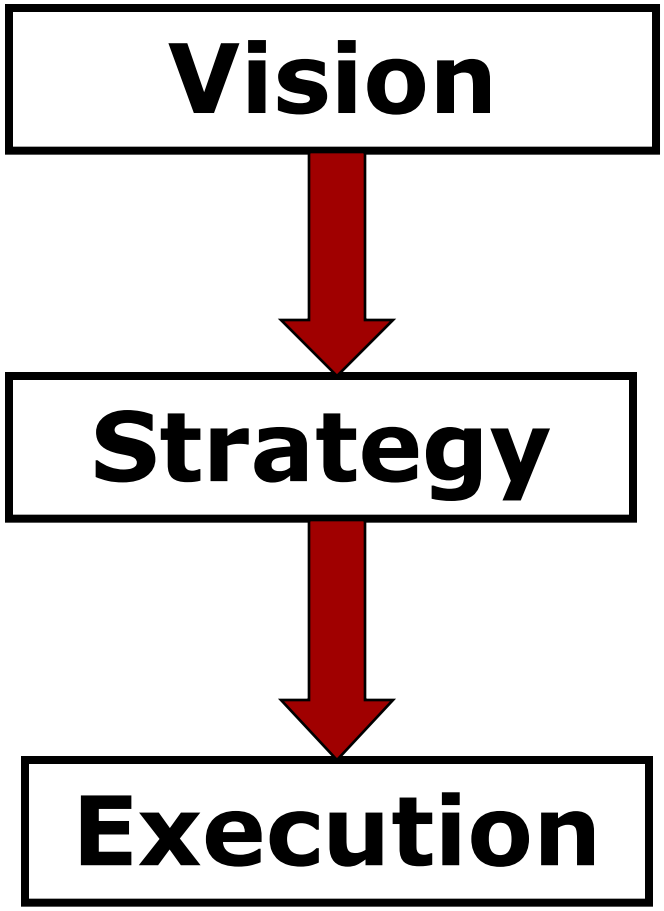
1. What could go right (and wrong) in Silicon Valley in the coming 10 years?

2. Where do you plan to live to start your career next year and why?

References for Stanford and Silicon Valley Content:
President John Hennessy of Stanford University:
James Gibbons of Stanford University; John Doerr of Kleiner Perkins;
John Chambers of Cisco; Annalee Saxenian and Homa Bahrami of UC Berkeley

The "Micro" Perspective: Key Technology Entrepreneurship Frameworks

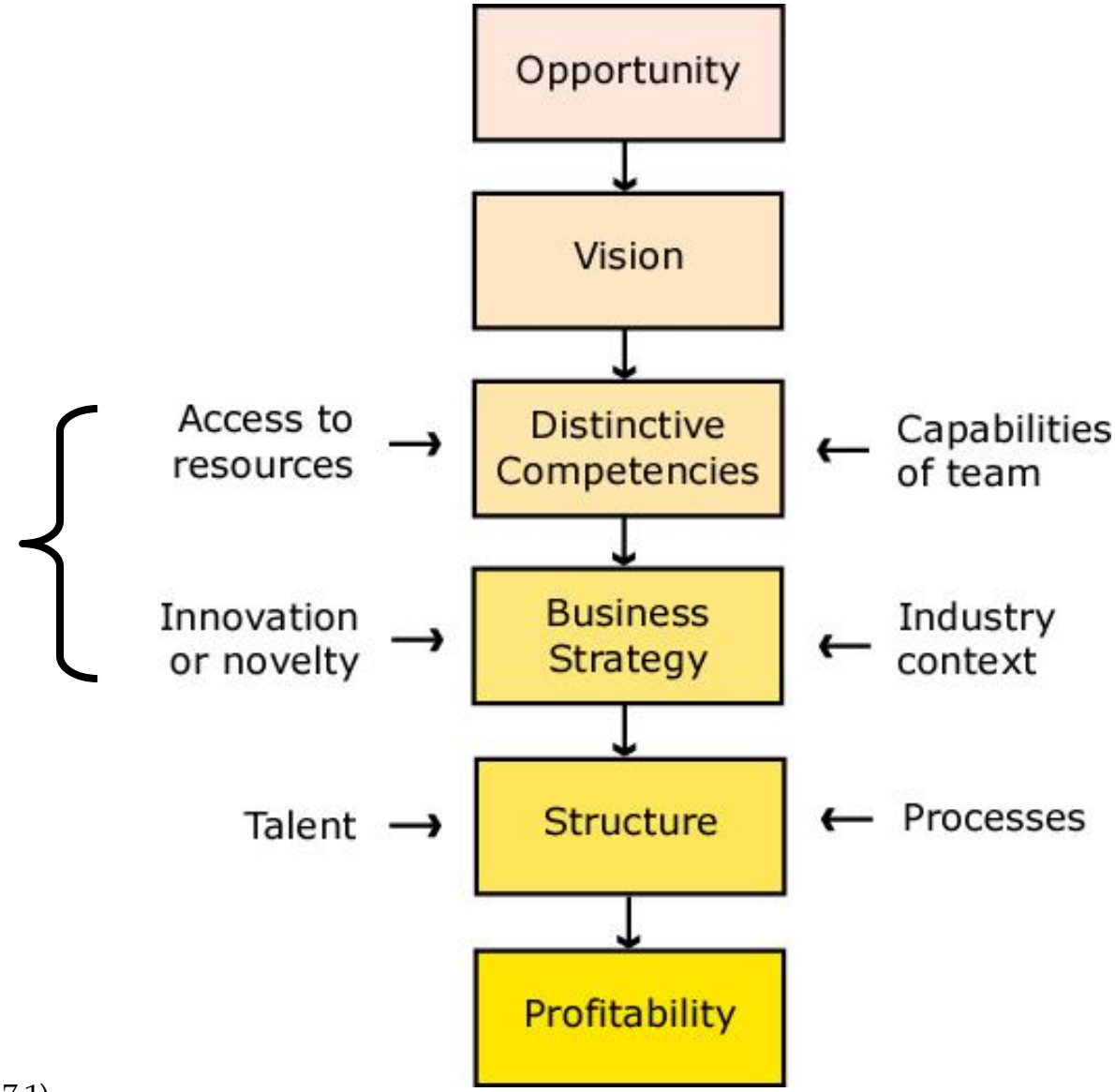
Key High-Technology Entrepreneurship Micro Framework #1: Dorf and Byers



Vision:

Strategy:

Execution:



Reference: Dorf and Byers (Figure 7.1)

Fundamental Questions: Vision

What do the founders wish to achieve with the business?
What is our shared vision and goals?
Where do we want to go and what business are we in?

Example: what business are they really in?

- Yahoo … Internet Directory?
- Palm … Organizers?
- Google … Search?

Fundamental Questions: Strategy

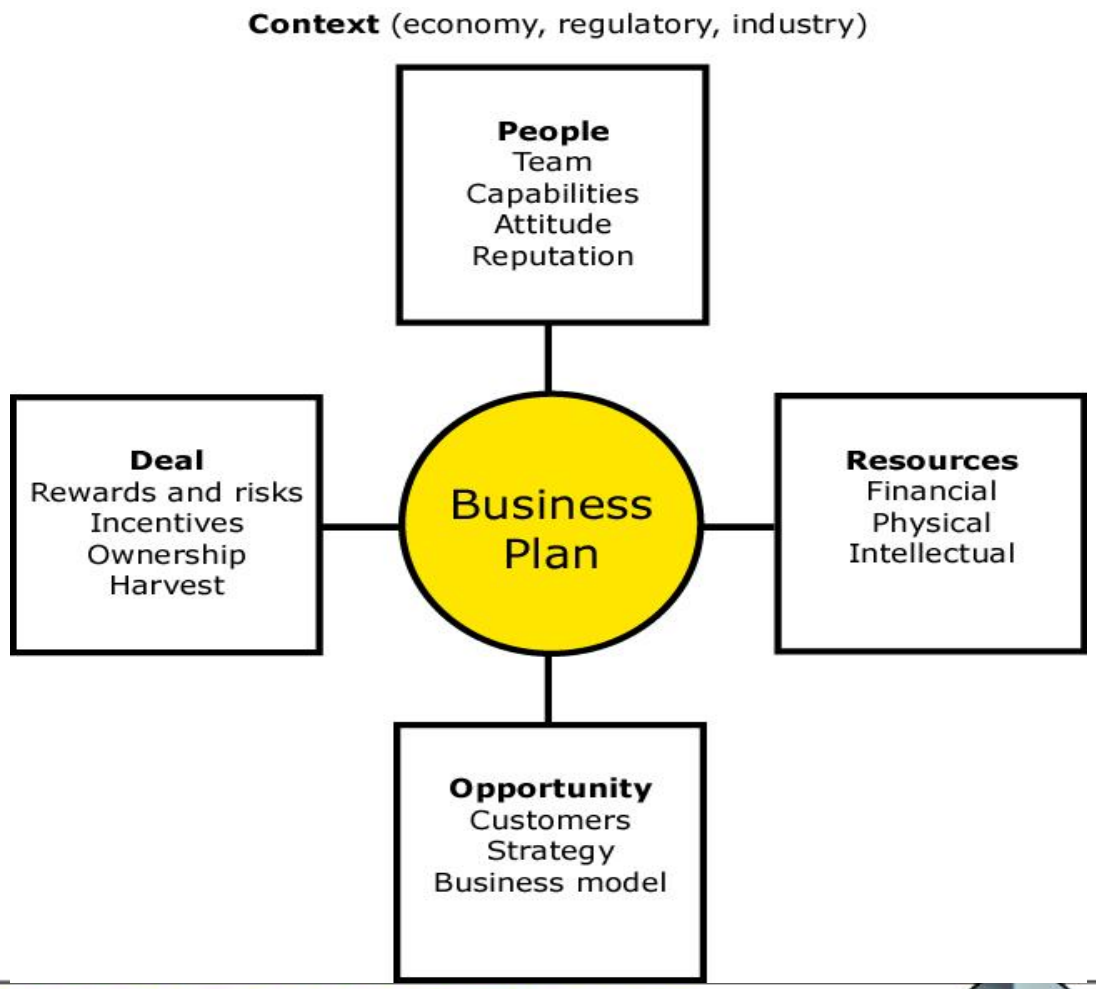
Do we have the right strategy?
Who is going to buy?
What are we selling?
Why are we better?

Fundamental Questions: Execution

Can we do it?
What resources are needed?
What is the blueprint for growth?
Can we adapt?

Reference: Steven Brandt

Key High-Technology Entrepreneurship Micro Framework #2: Sahlman's Concept of Fit



Reference: Sahlman

Micro Framework #3: Dynamics of the Start-Up Game

(1) Founding:

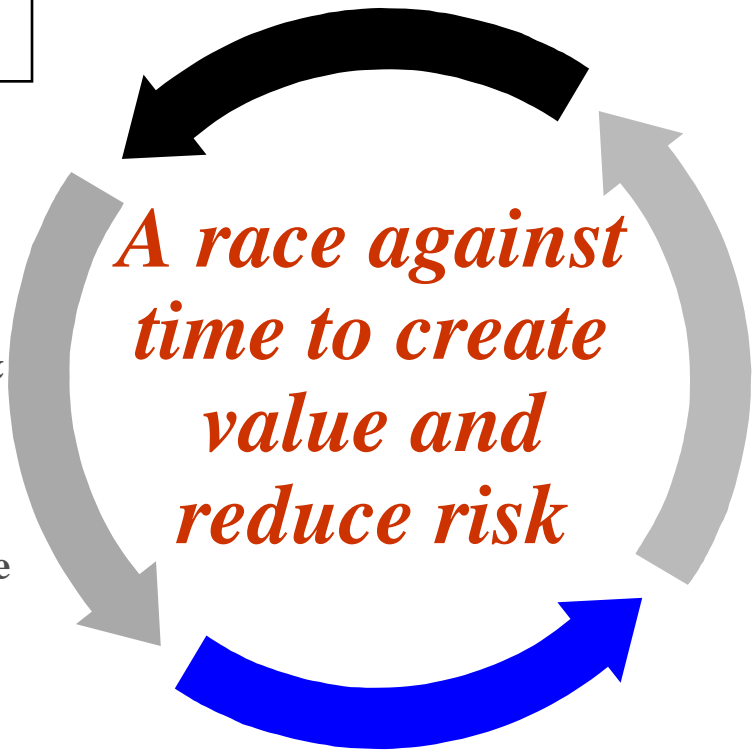
An entrepreneur begins with a vision and shares of stock in the new venture.

Entrepreneur trades stock for ideas, money, and people

Value has been successfully created.

(2) Seed Stage:

- **Venture capitalists provide money in return for stock**
- **Employees join via friends & associates in return for cash salary and stock options**
- **Ideas become intellectual property which represents the initial value in the company**



(4) Exit Stage:

- **IPO or M&A**
- **Entrepreneur, investors, and employees can cash in stock for money**
- **A viable company has been created or expanded**
- **Each entrepreneur continues to build the company, retires, or starts the game again**

Further growth is delayed until milestones are reached and risk of failure is reduced

(3) Growth Stage:

More money, ideas, and people are obtained, but for much less stock than in the earlier stage due to lower risk

Company balances earning cash, taking investment, and spending cash to create value

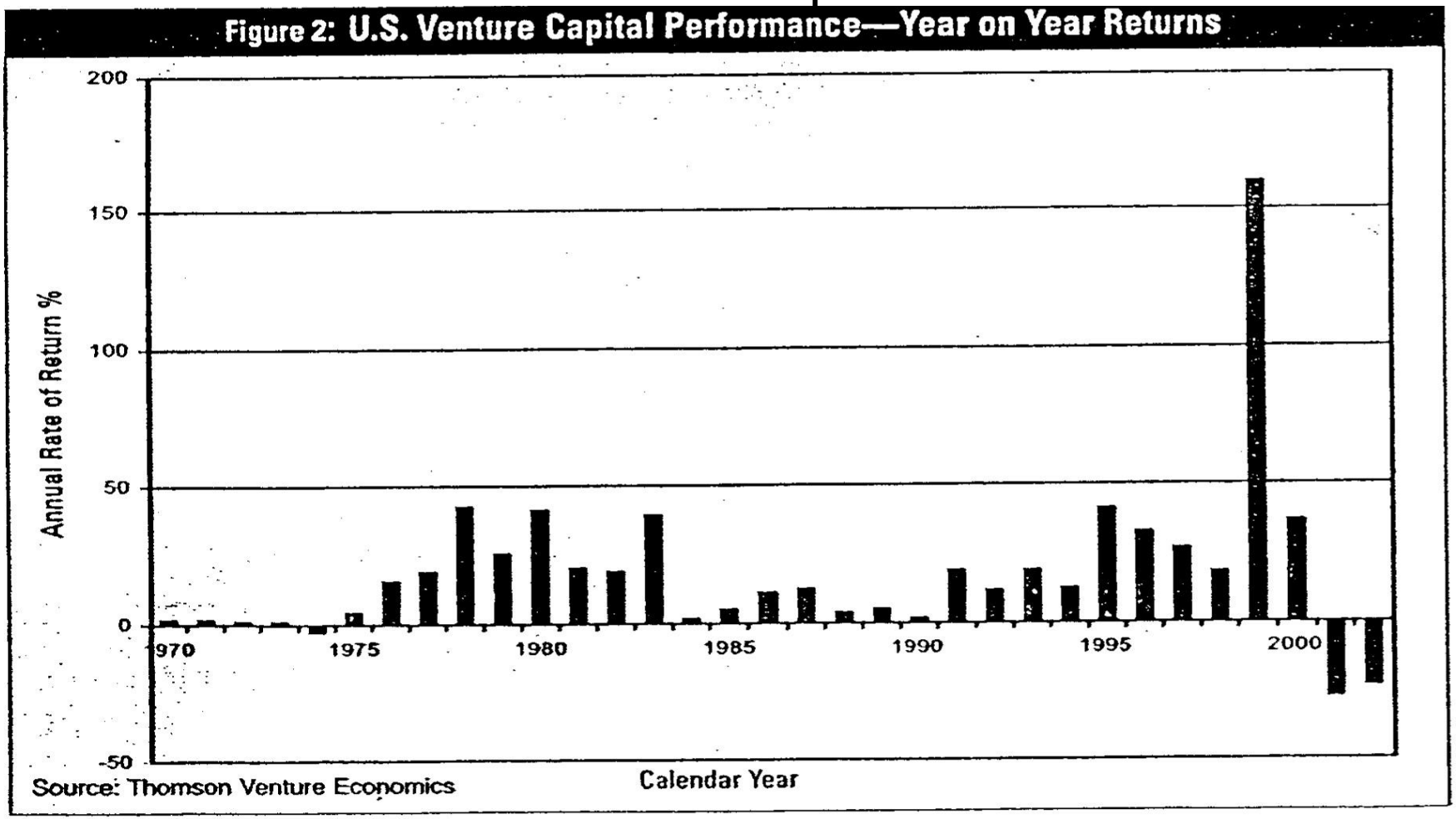
Reference: Start-Up by Jerry Kaplan

From Micro to Macro…Framework #4: Randy Komisar's "3 Questions Every Venture Capitalist Asks"

1. Big Market?
2. Winning Strategy?
3. Excellent Team?

Reference: Randy Komisar

The "Macro" Perspective: The Role of the Capital Markets



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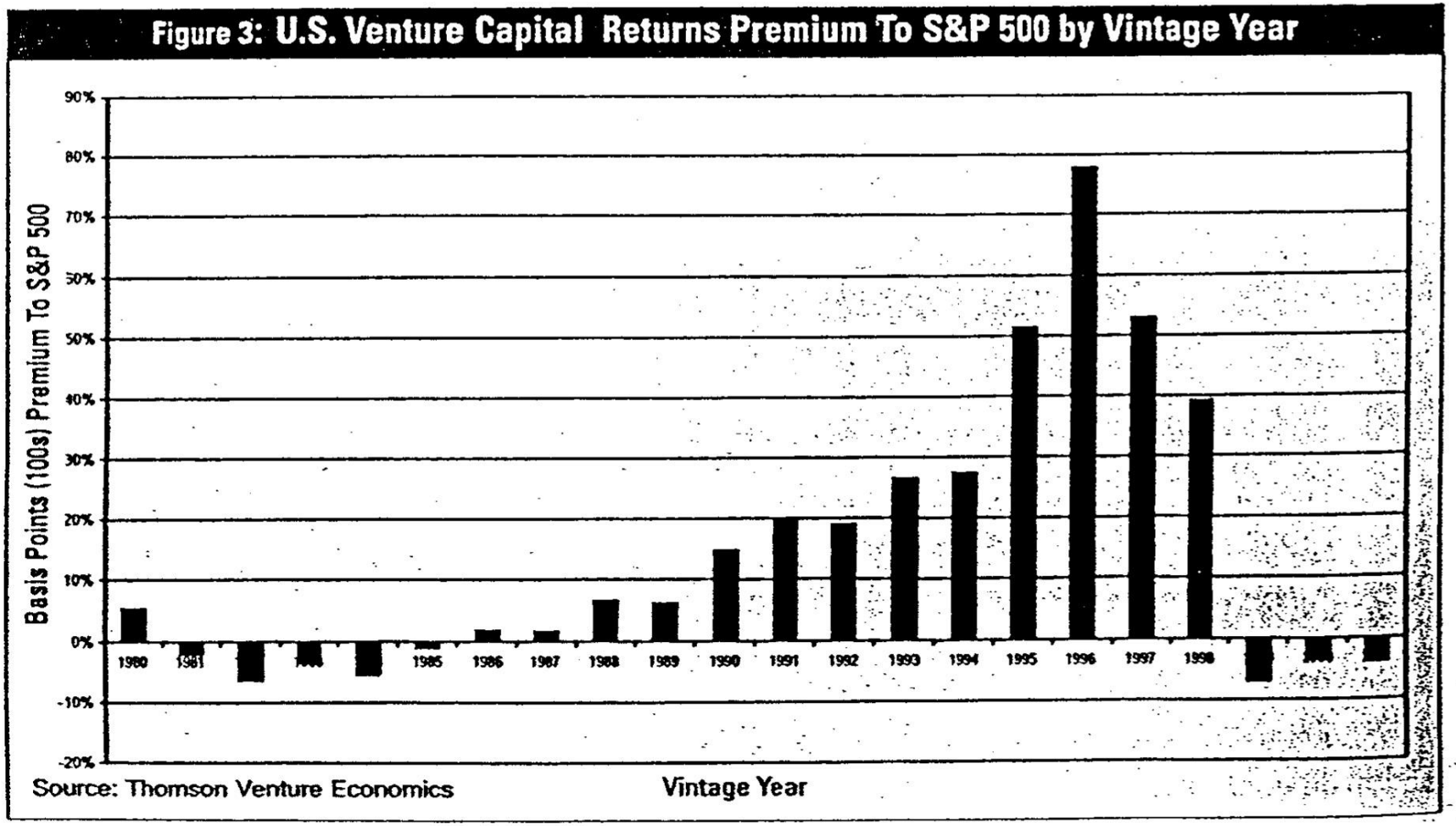

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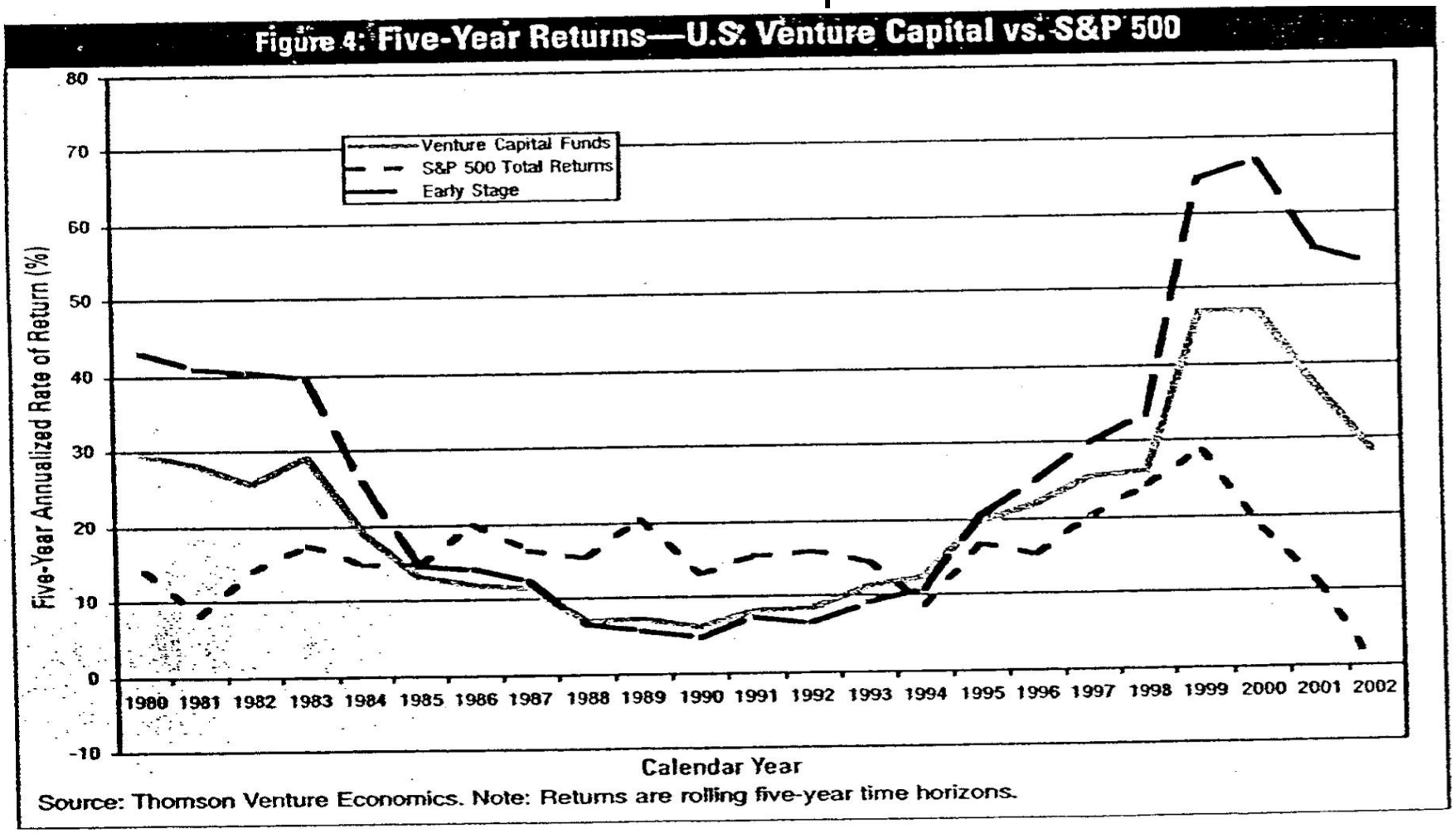

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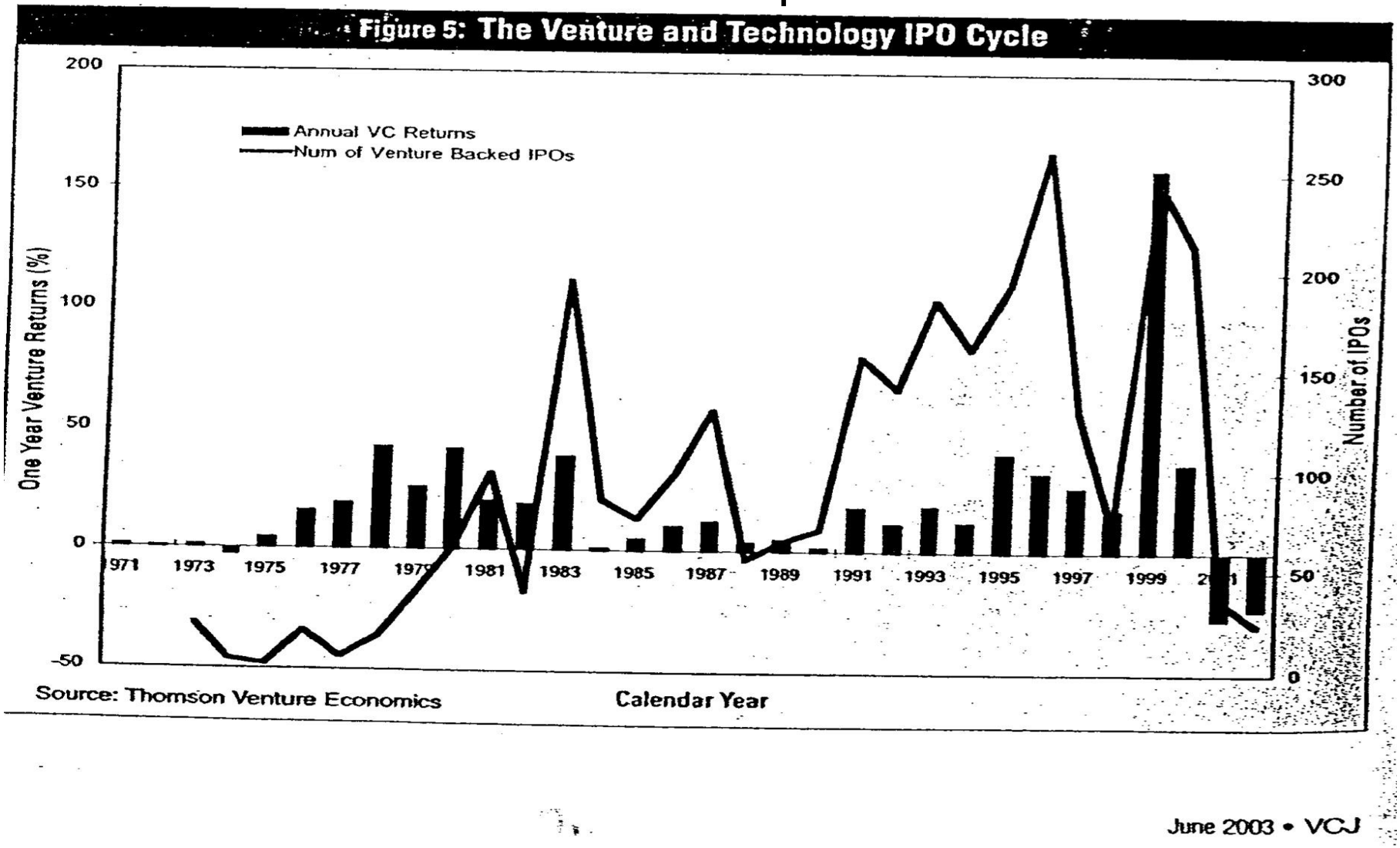

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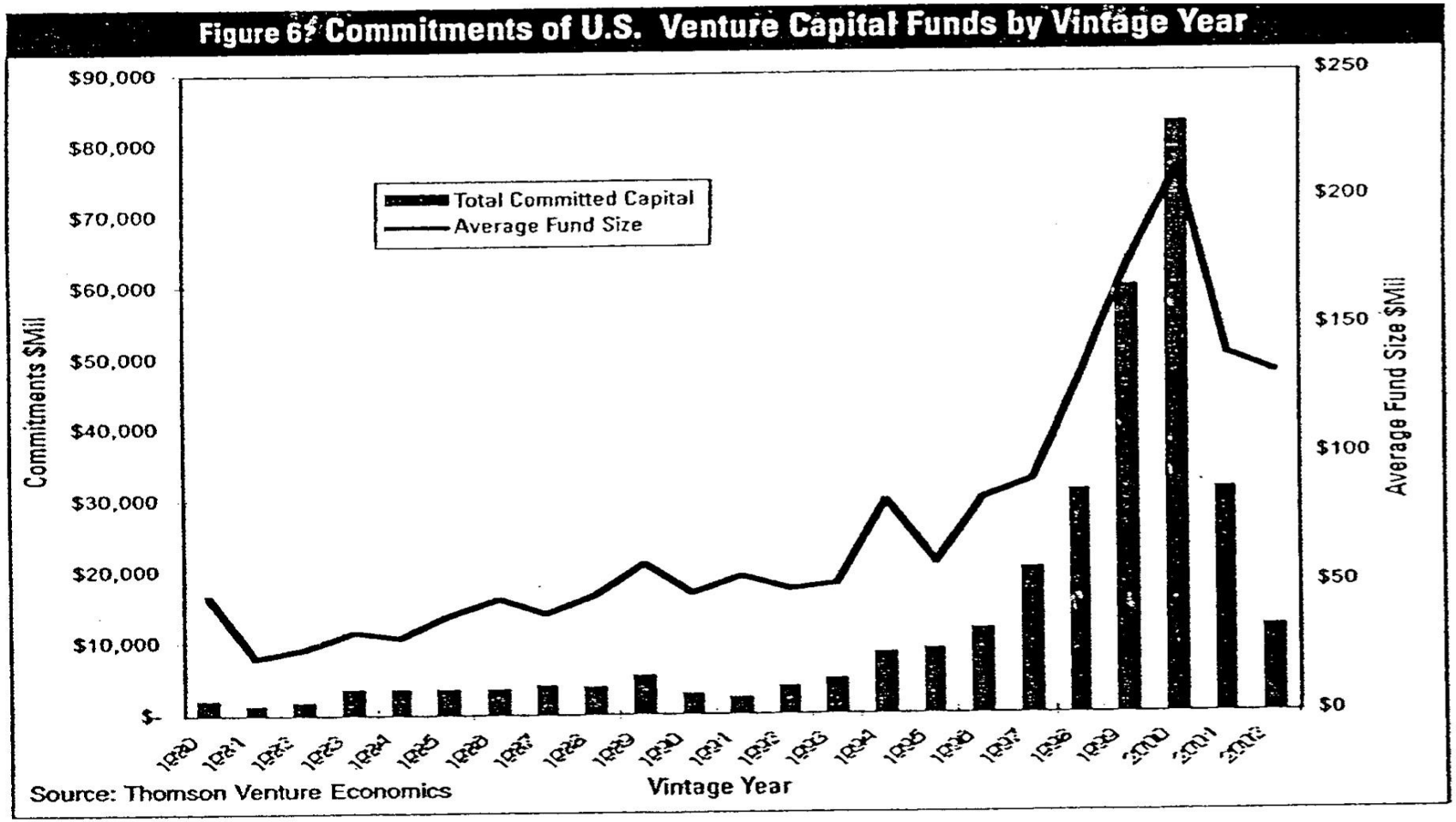

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Opportunity Analysis Project Overview (Chi-Hua, Tom, Alex)

Study Group and Project Team Formation (Chi-Hua, Tom, Alex)