SMEs and Regions: Innovating in a Global Economy

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Today's plan:

- *Research findings*
  - From self-sufficient corporations to specialists and regional ecosystems
  - Local and global networks support innovative recombination
- *Policy lessons*
  - There is no recipe for growth
  - Compete by differentiating
  - Create global networks
  - Monitor progress closely
- *Case studies: Asia and elsewhere*

20th century company

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

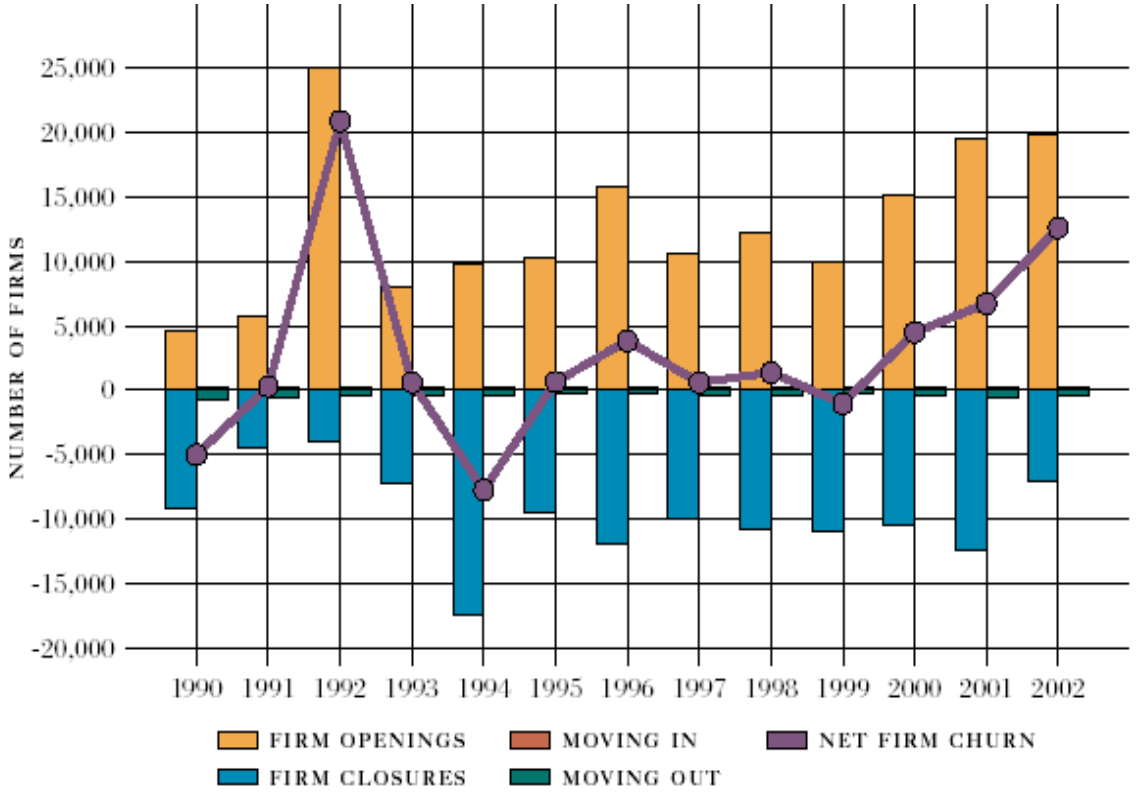
20th century innovation: R&D lab

Regional ecosystem advantage

- Vertical unbundling
- Minimal hierarchy
- Open boundaries
- "Job hopping"
- Experimentation
- Learning via failure

SMEs dominate in Silicon Valley

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



Local networks as coordination

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

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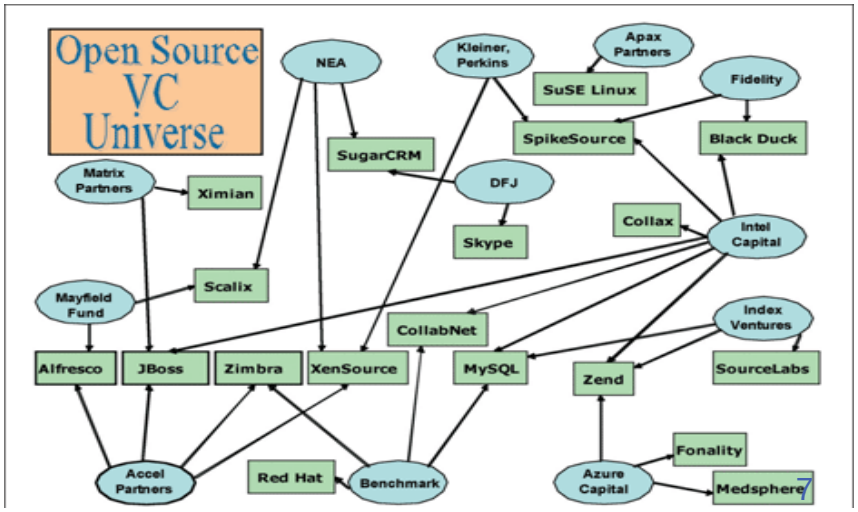
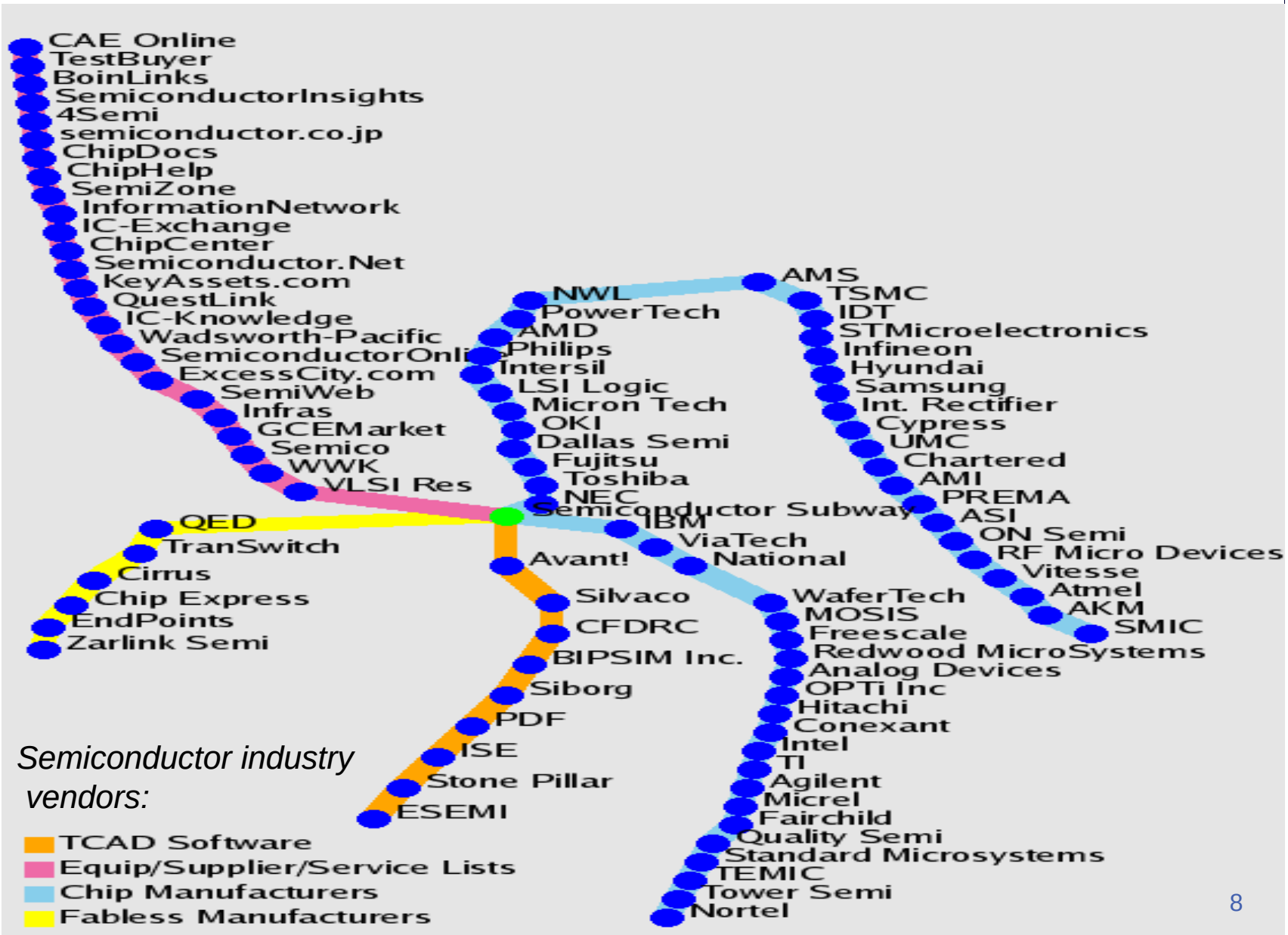
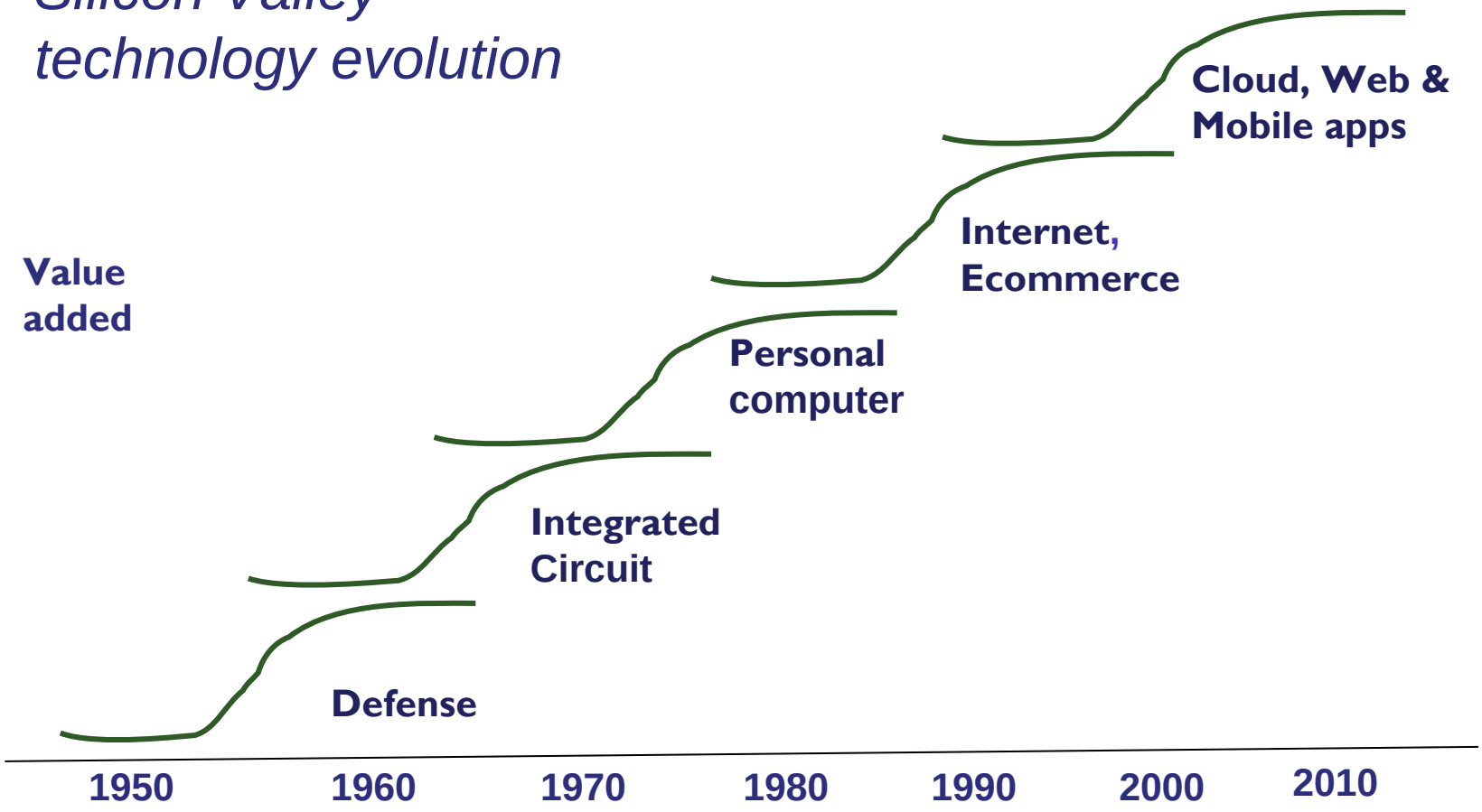


Specialization in semiconductors



Growth via innovative recombination

Silicon Valley -- technology evolution



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

Global supply chain: iPad

Apple suppliers in Asia

NAND flash memory:

- Samsung Electronics (South Korea)
- Toshiba (Japan)

LCD displays:

- LG Display (South Korea)
- Innolux Display (Chinese Taipei)

Assembler:

- Hon Hai Precision Industry (Chinese Taipei)

Touch-screen technology:

- Wintek (Chinese Taipei)
- Sintek Photronic (Chinese Taipei)

Source: Analysts

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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

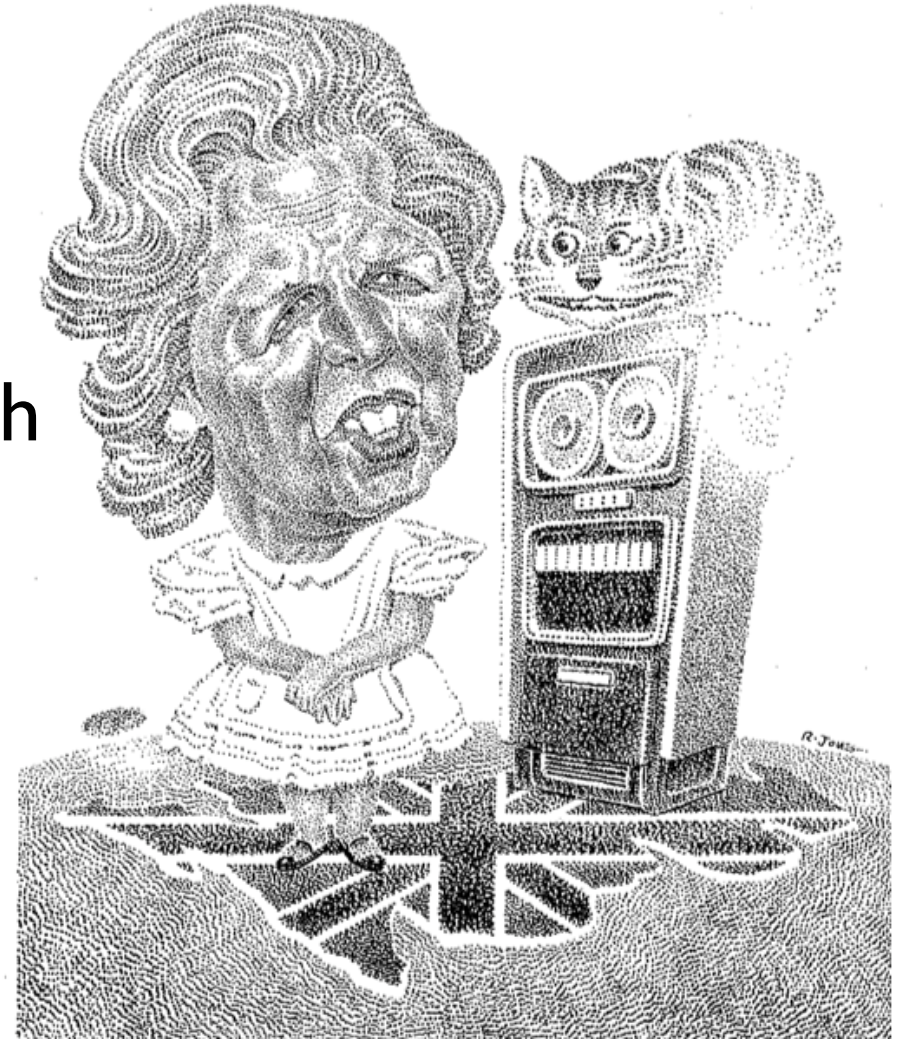
Recipe 2. Invest in national model

- Support national "champion" firms
- Invest in national innovation system
- Fund strategic technology sectors

Recipe 3. "Growing Silicon Valley"

Ingredients:

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



Lesson 2. Differentiate first

. . . and lower costs later

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

Identify distinctive local strengths

Build networks that help:

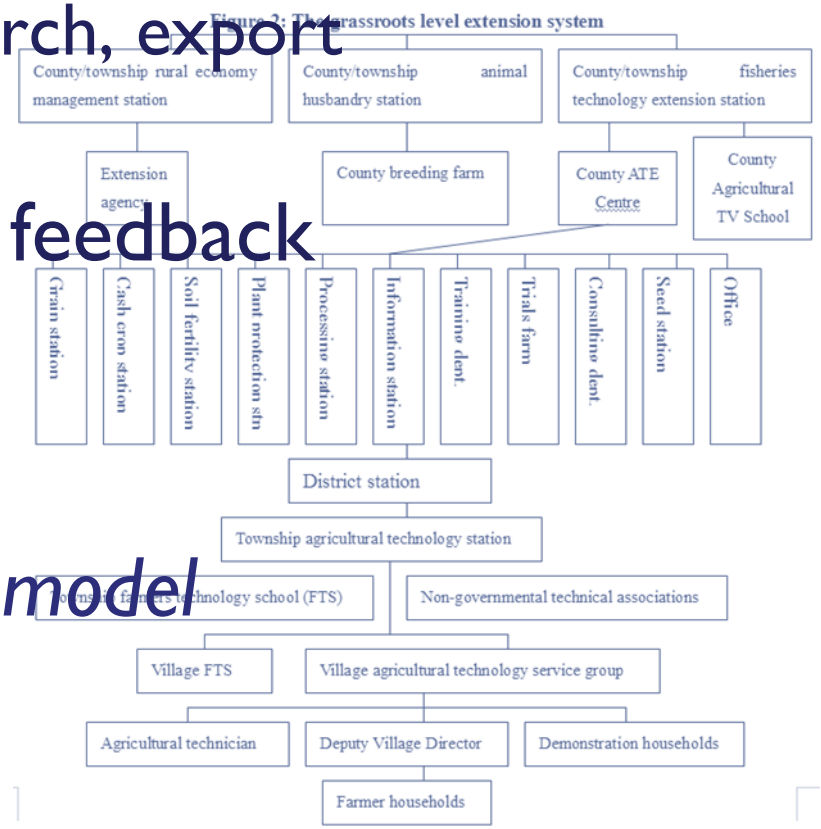
- Identify unique local capacities and promising markets
- Explore new opportunities

Public-private partnerships

Invest in local capacity-building

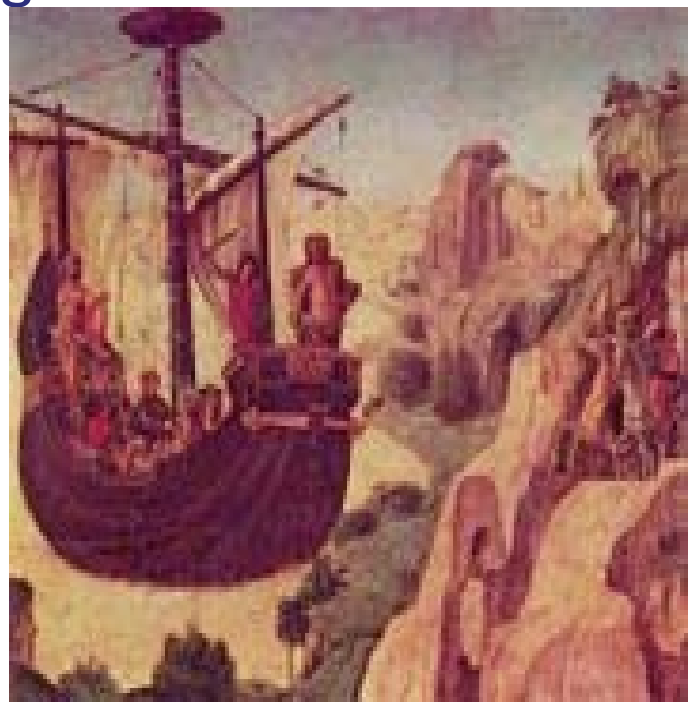
- Invest to build local capacities
  - e.g. Training, technical assistance, education, standard setting, research, export promotion, etc.
- Experiment and seek feedback
- Aggregate lessons

Agricultural extension as model



Lesson 3. Link to global value chains

Diaspora as a powerful global search network



The New Argonauts

- Once "peripheral" regions can now contribute to global value chains
- Create networks to scan globally for best partners and solutions to problems

Diaspora and innovative search

- Help policy makers define appropriate strategy
- Transfer global "best practice
- Link to customers and partners
- Broker technology or institutional adoption
- Overcome political opposition to reform

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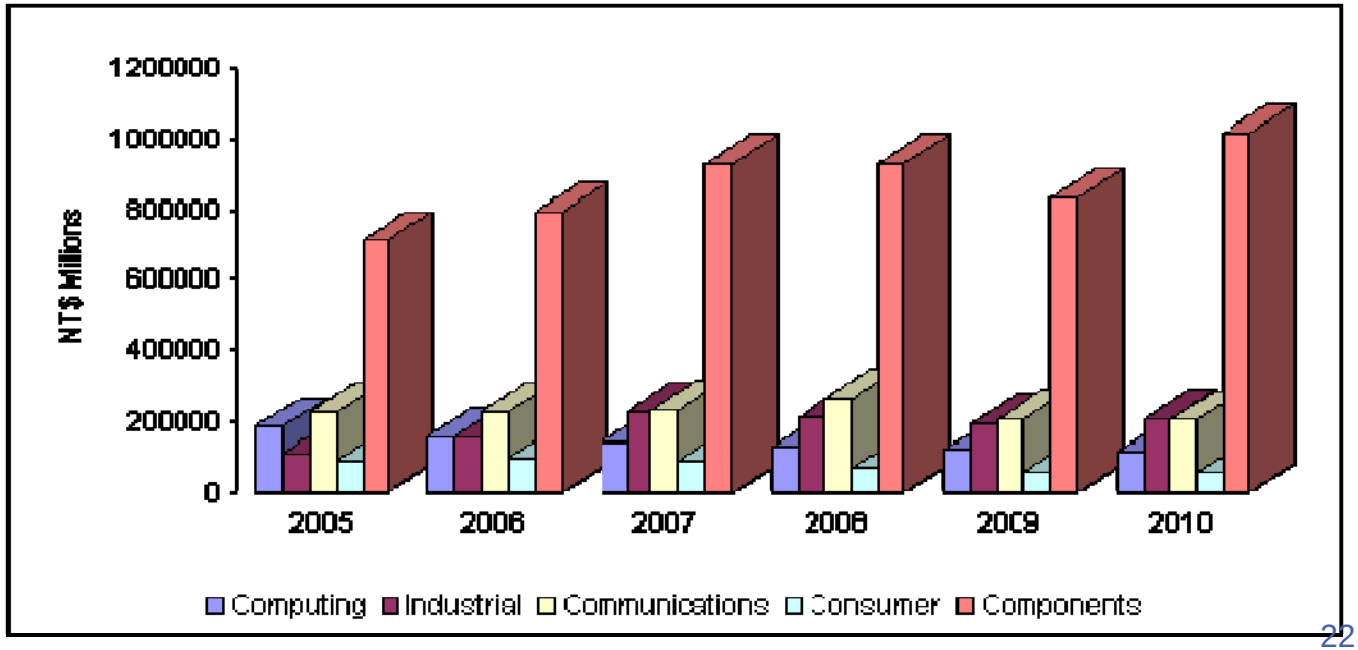
Lesson 4. Monitor progress

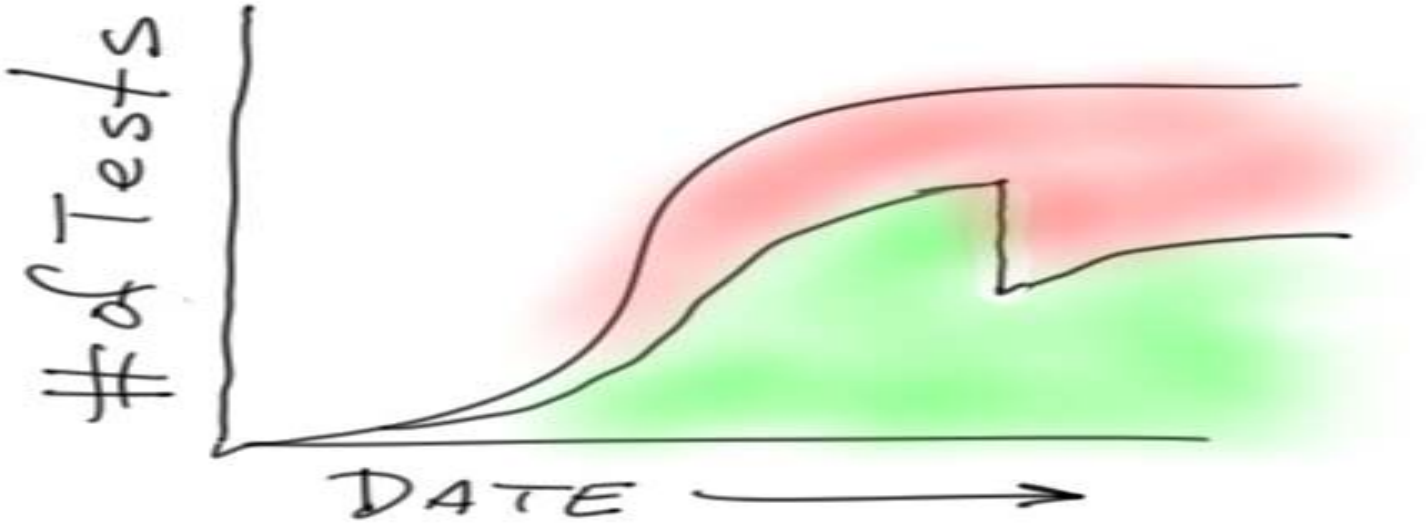
- Set measurable goals, assess progress often
- Identify obstacles to further growth
- Adjust based on results and iterate

Chinese Taipei's Electronics Production 2005-2010



Goal is sustained growth

- Incremental upgrading via specialization, collaboration, recombination--locally and globally—*cumulates to sustained growth*
- Requires patience: it takes time!!



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Chinese Taipei in 1960s &1970s

- Poor GDP per cap < $2,500
- Minister of Industry consults with Overseas Chinese in Silicon Valley
- Executive Yuan creates Science & Technology Advisory Group which includes special overseas advisors

=> Spurs investments in technical education

=> Establishes public-private industrial research organization, Industrial Technology Research Institute (ITRI)

Learning from global best practice

Parliament creates mechanisms to establish venture capital industry

Overseas Chinese from Silicon Valley set up first funds in 1985

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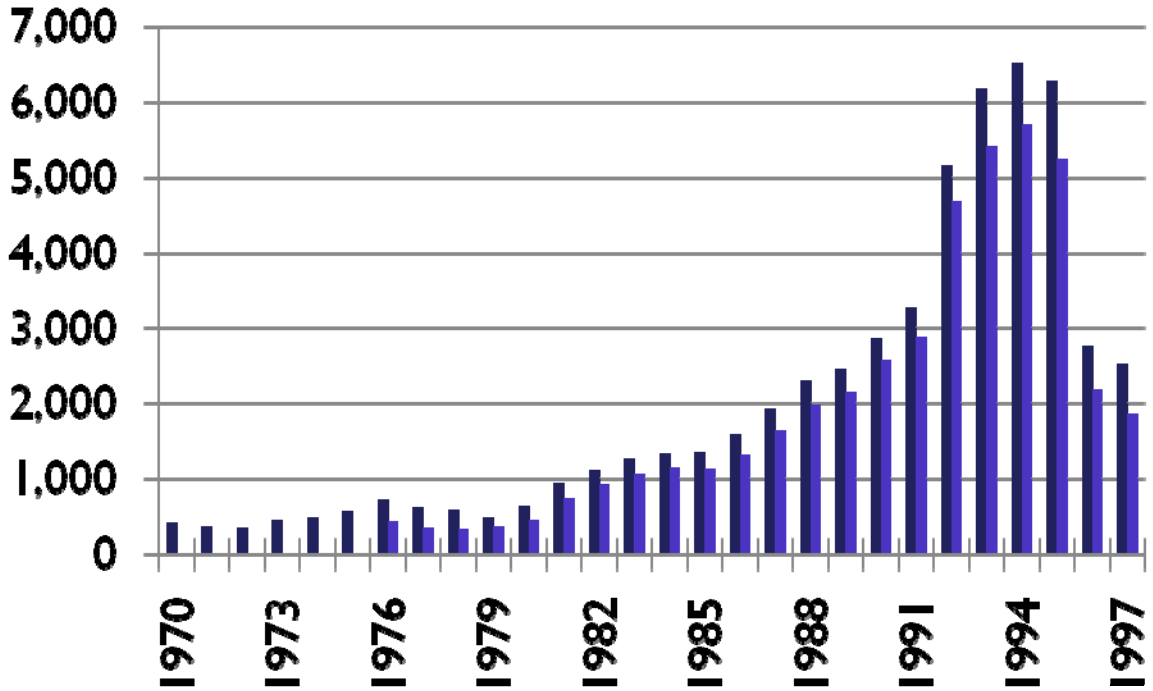
Taiwan PE & VC Association

WALDEN International

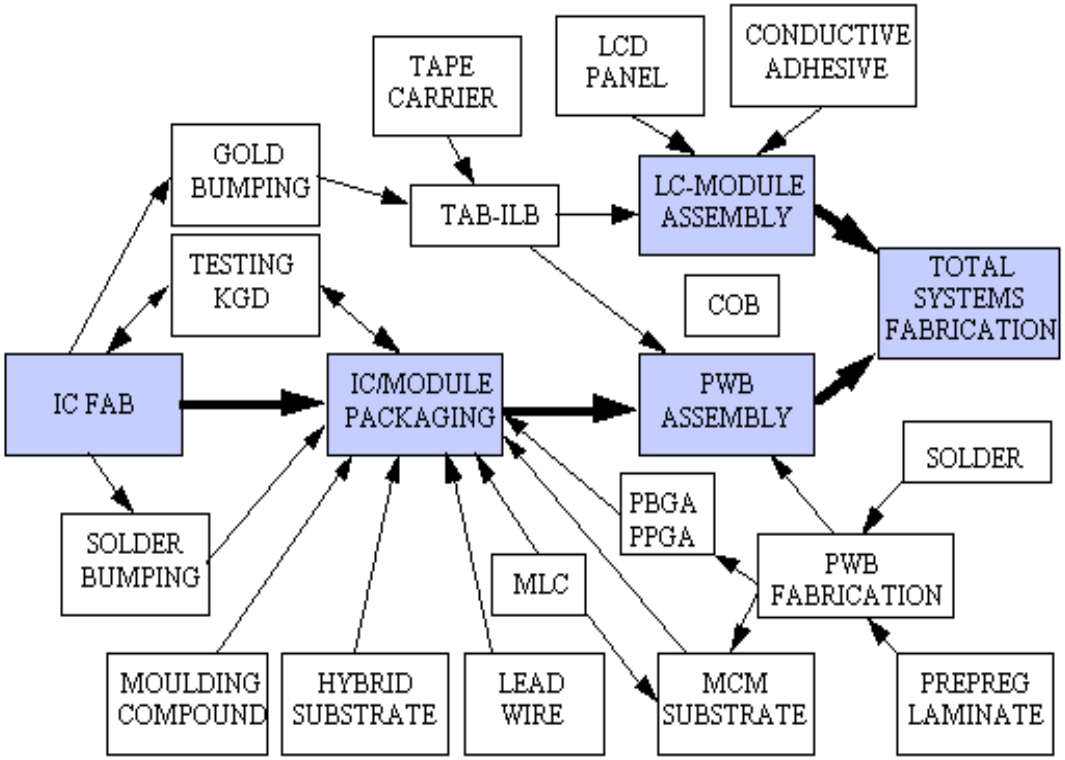
Reversal of brain drain

Total returnees from the United States



Technology development strategy

Electronic packaging industry infrastructure, ERSO/ITRI (1997)



From SV imitator to SV partner

1980s- Reverse engineer and clone PC & Mac

1990s- Entrepreneurship, stock market boom

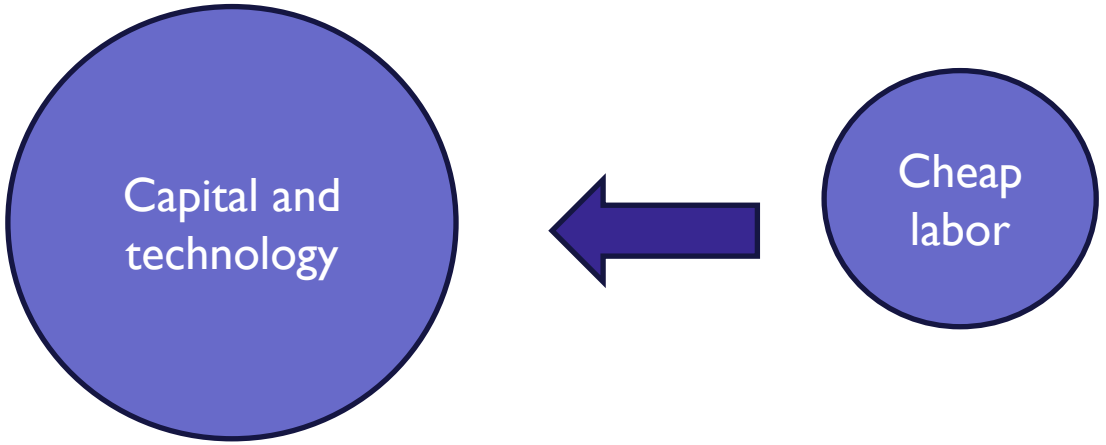
2000s- Leads global IT manufacturing

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

10,000 electronics-related firms

From core-periphery. . .

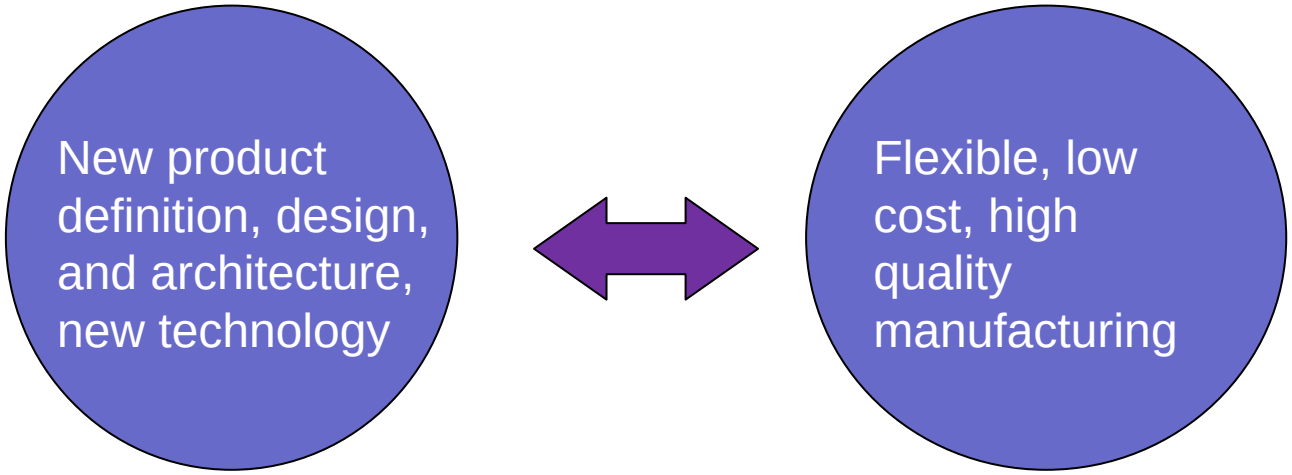
US MNCs invest for low costs



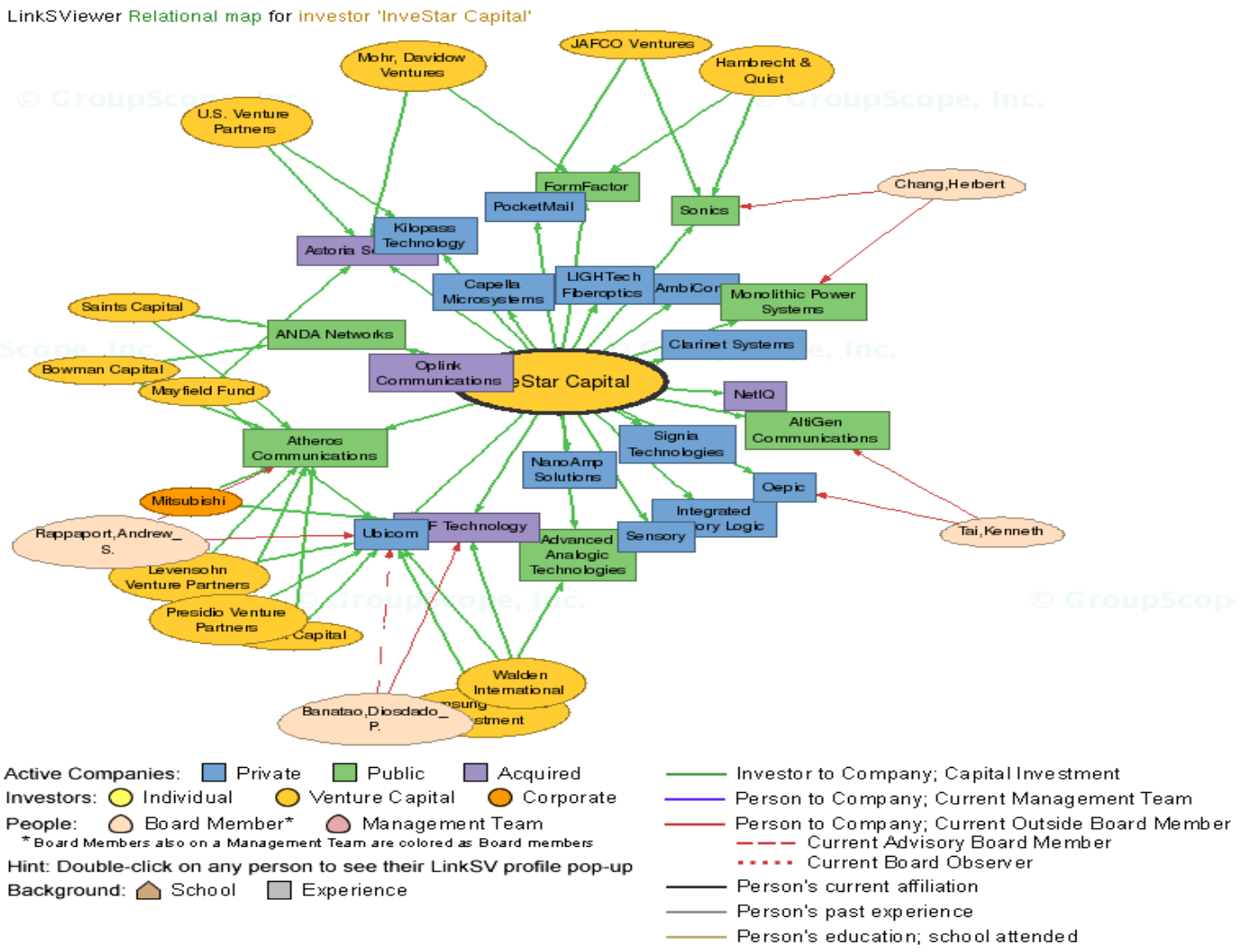
. . .to reciprocal regional upgrading

Complementary specialization

Cross-regional collaboration



Investar's global network



The SV-Hsinchu-Shanghai network

Ireland: Inward FDI as a search network

India: a software services partner

Israel: telecom & software partner

Tel Aviv,

Questions and comments

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