

Local Innovation for a Global Economy

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The puzzle: from Taiwan



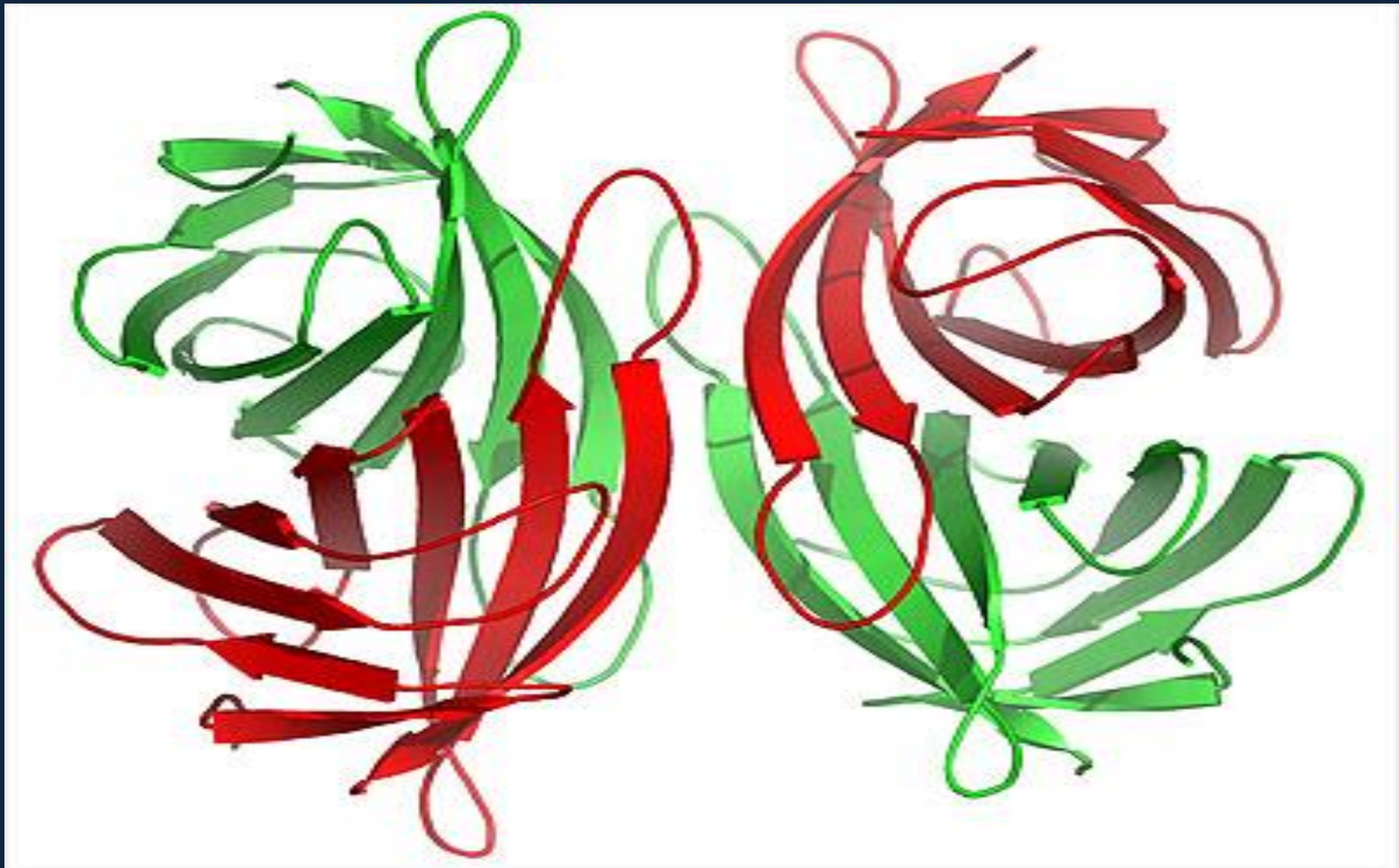
to Bangalore



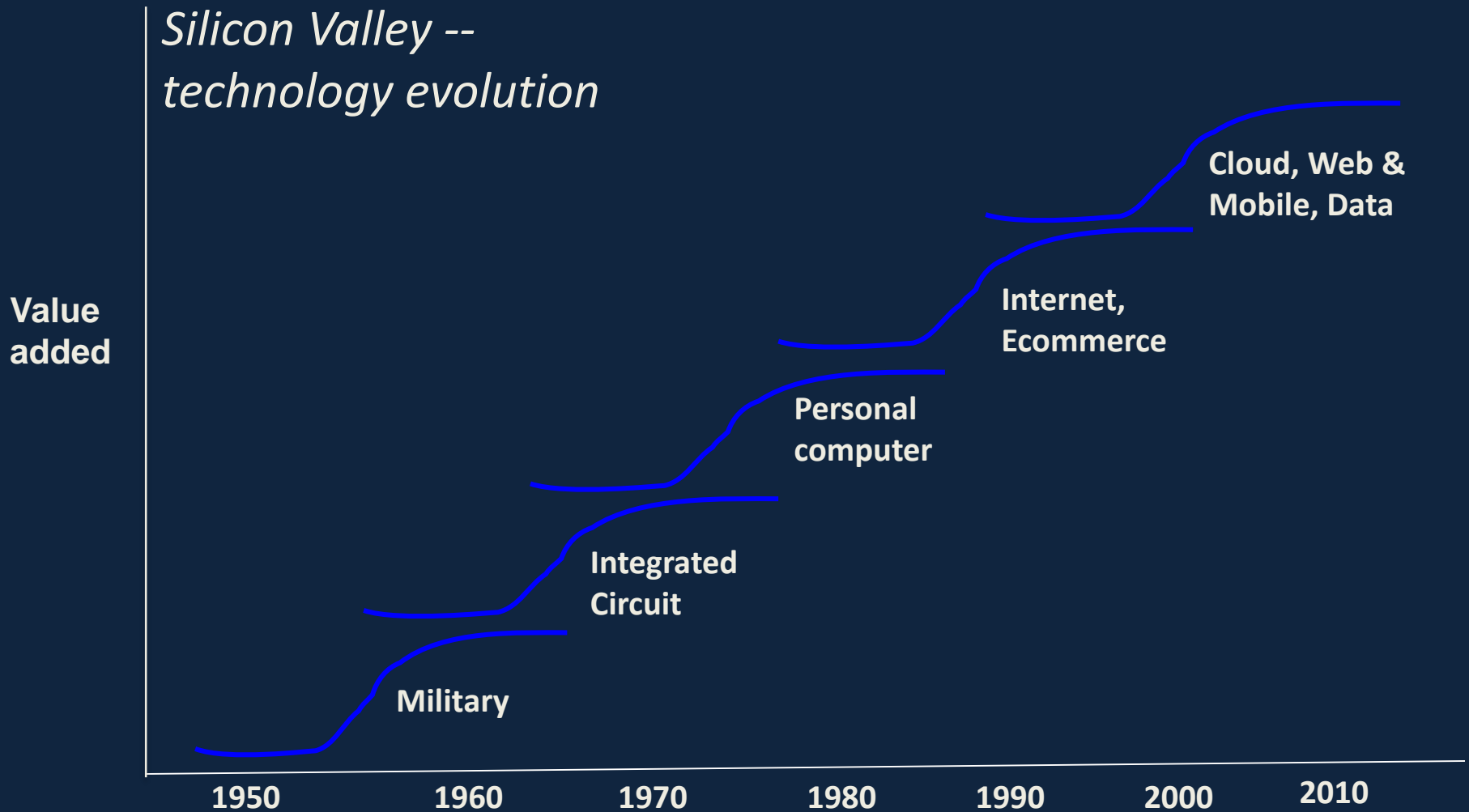
Global value chains and innovation in the “periphery”



Fragmentation and reintegration



Growth through innovative recombination



Innovation as recombination

Information technology creates a proliferation of potential solutions and new pathways

Unpredictability of innovation: multiple solutions with different strengths in different contexts

Boundaries between sectors becoming indistinct: key is the capacity to search effectively and recombine changing capacities rather than dominate a fixed subset of technology

Is it a car . . . or a computer?

Is it a phone or a camera?



Is it a car or a computer?

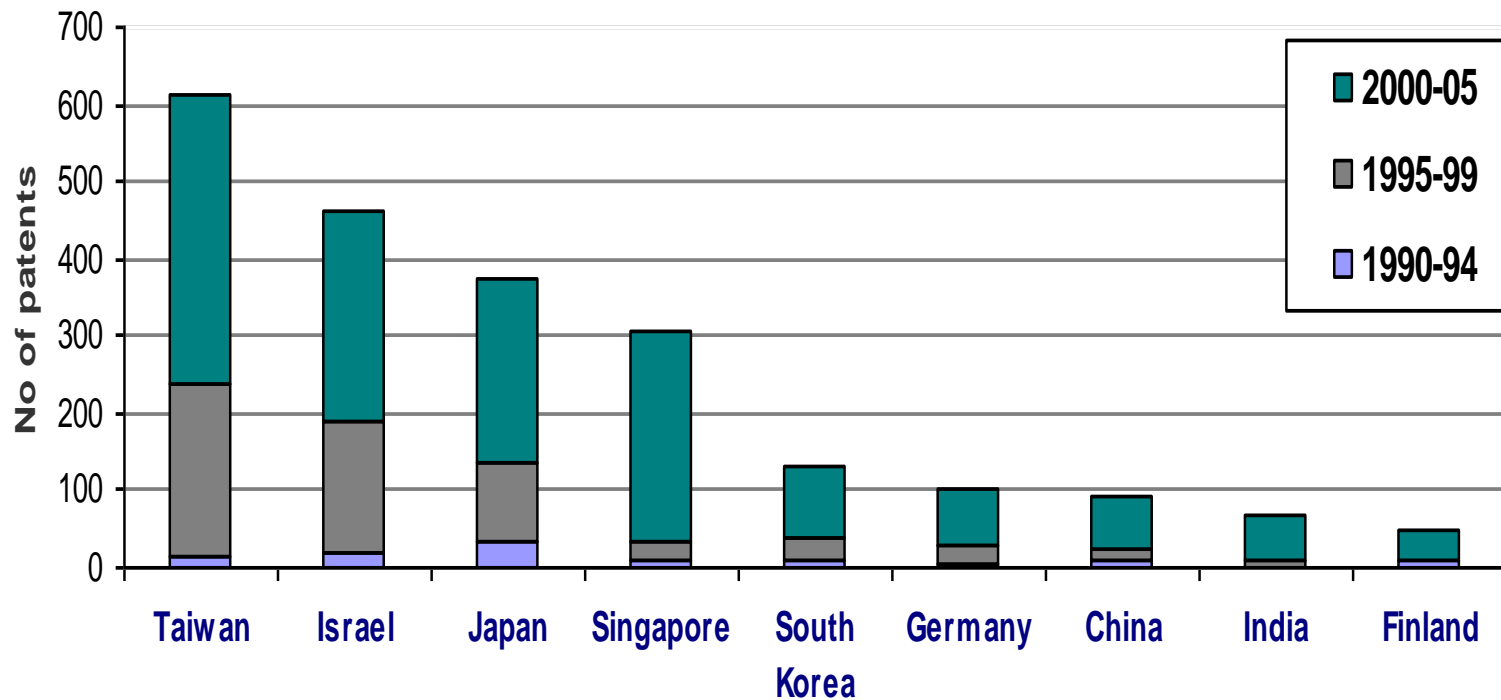


Diasporas and development

- *Standard view:* Diaspora increases intellectual capital via scientific collaboration, knowledge flows, reduced reputational/informational barriers to trade.
- *Alternative:* Diasporas contribute importantly to design and construction of new institutions—like financial rules to support venture capital

Silicon Valley's foreign co-inventors

Foreign co-inventors listed on patents with Silicon Valley inventors

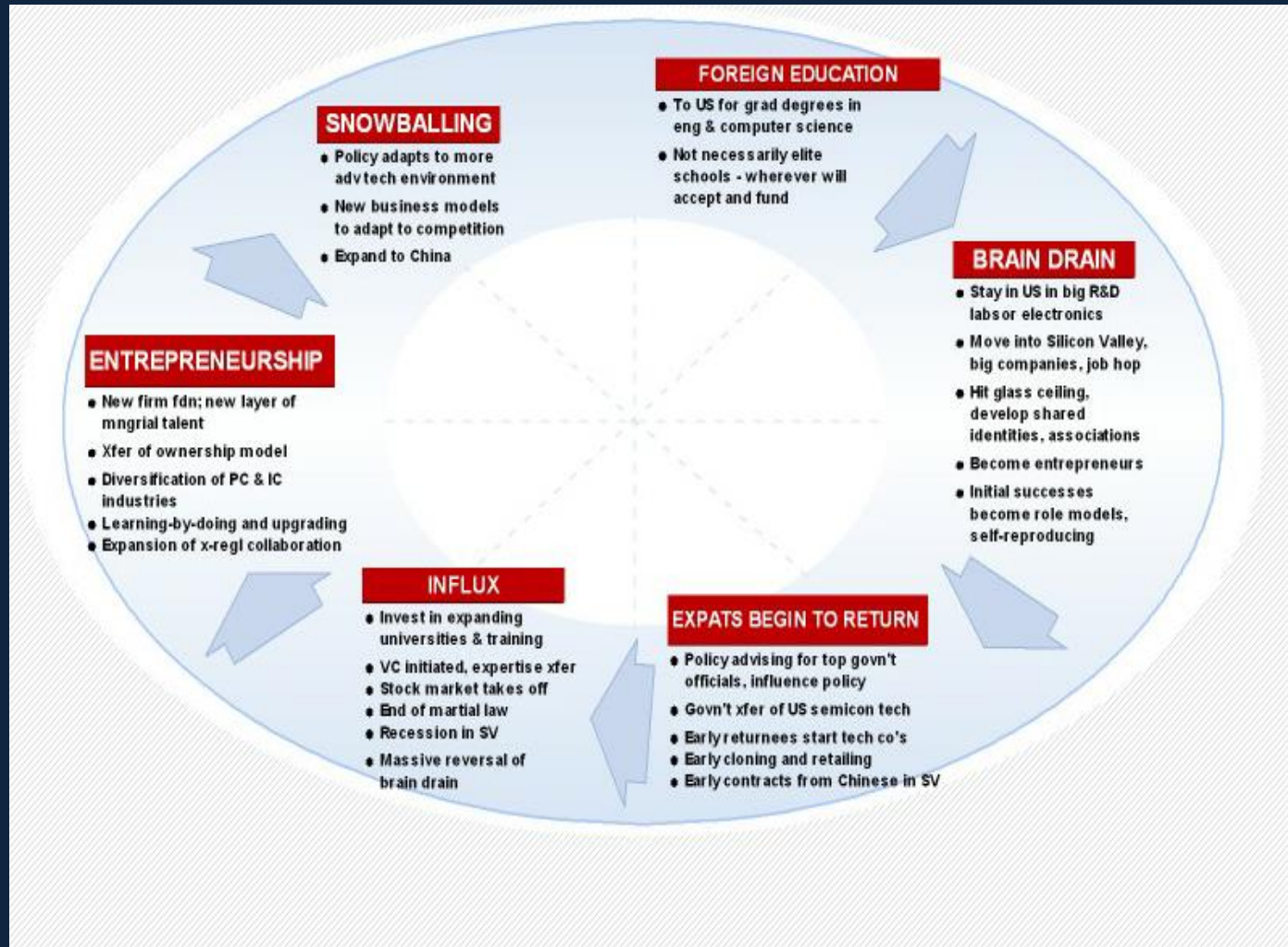


Search and the new Argonuats



Scala

Brain circulation: Taiwan case



External search networks

- Embedded (social) networks: tacit knowledge
- Modular networks: explicit knowledge
- External (open) search networks: partial formalization via information pooling that supports collaboration and joint problem solving (e.g. quality standards)

Taiwan: from imitator to partner for SV



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MEDIA TEK



10,000 electronics-related firms

iPhone 6: global supply chain

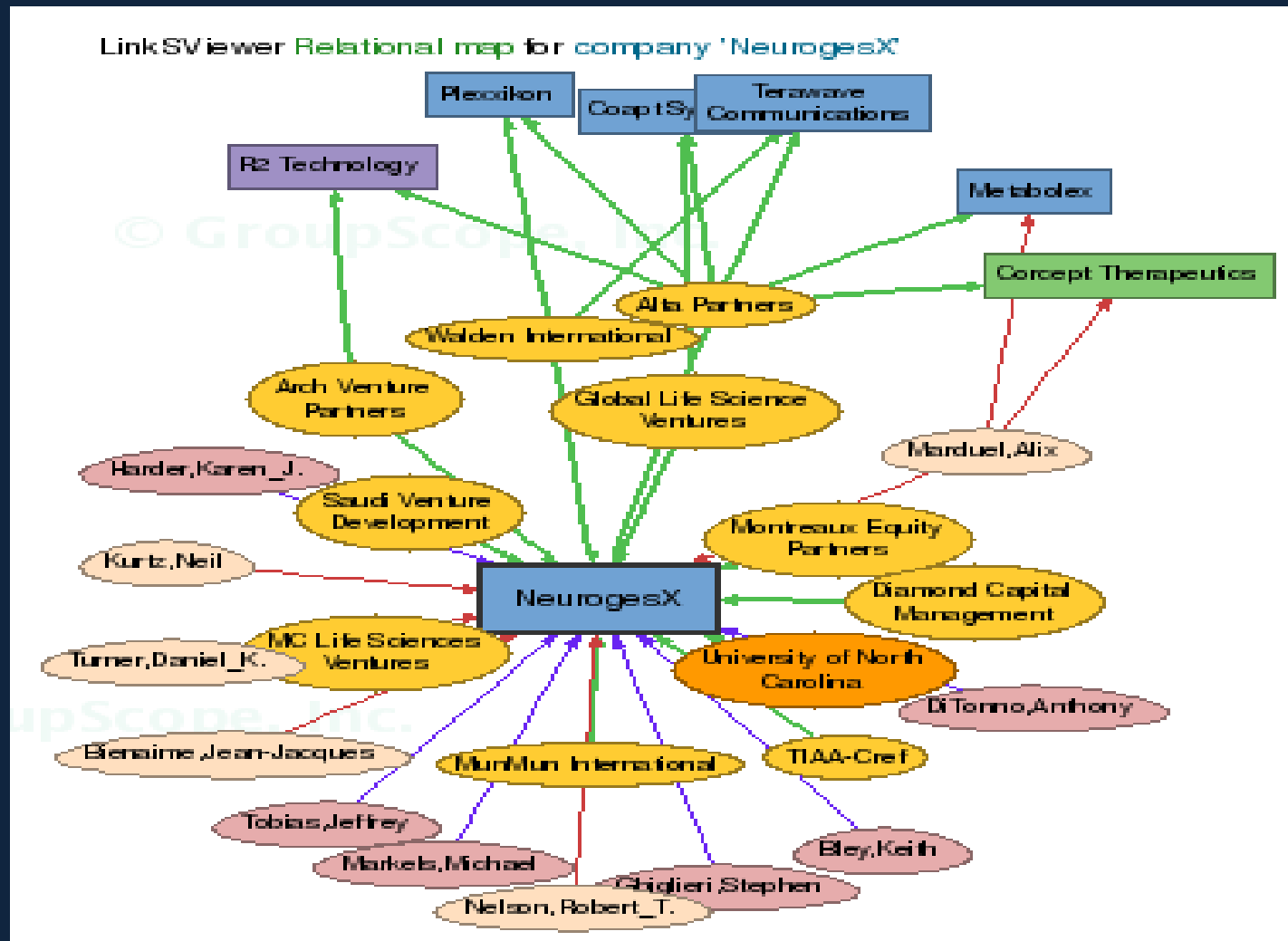


Top suppliers

CHINA	349 *
USA	149
JAPAN	60
TAIWAN	42
KOREA	32

** Over 50% Taiwanese*

Venture capital as search network



Open (global) search networks



Taiwan: Diaspora & institutional reform

Diaspora collaborates with govt. to design institutions to support entrepreneurship and innovative search

- **Venture capital** is a powerful search network to identify and (re) combine parts of firms—financial, technical or marketing expertise, managerial talent, IP—to form ventures that in turn become nodes in networks for co-designing and building new products
- **Public-private research labs** (ITRI) for joint research , improvement of designs and/or processes, standard setting (SEMI: Flat Panel Displays, Photo Voltaics)

Taiwan: Diaspora, clusters and co-design

Entrepreneurship, vertical decomposition and clustering of IC & electronic system production:

Deepening specialization and co-design of components, subsystems, and periodic re-integration

Diaspora instrumental in collaborative exploration and innovative recombination

1980-90s: Silicon Valley-Taiwan cross-regional collaboration, mutual upgrading

Post 2000s: Taiwan-China-Silicon Valley cross-cluster linkages

SV-Taiwan-China network



Beyond Diaspora

- Growing importance of external networks that firms and other actors rely on to locate collaborators to solve problem or provide solution
- Search networks as alternative to hierarchical decomposition of tasks as means of overcoming bounded rationality
- Information “pooling” across firms (in region, across supply chain) allows joint learning and adaptation

Lessons: Don't try to replicate SV

The recipe still doesn't work . . .

Ingredients:

- Technology park
- University research
- Engineers
- Venture capital
- Incubator
- etc.



Lessons: Open organizational boundaries

- Connect to (not replicate) successful regions
- Search for collaborators
- Partner across boundaries: geographic, organizational, sector

Lesson: Differentiate and collaborate

Define and invest in distinct capacities

Search for local and global partners

Collaborate to

- Identify and compete in new markets
- Jointly solve problems and adapt

University-industry
Public-private
Across sector, domains



Lesson 2. Specialize and collaborate

Define and invest in distinct capacities

Open boundaries of firm, institutions

Partner locally and globally to:

- Identify new markets – “self discovery”
- Experiment and iterate to solve problems
- Monitor and adapt

Thank you!