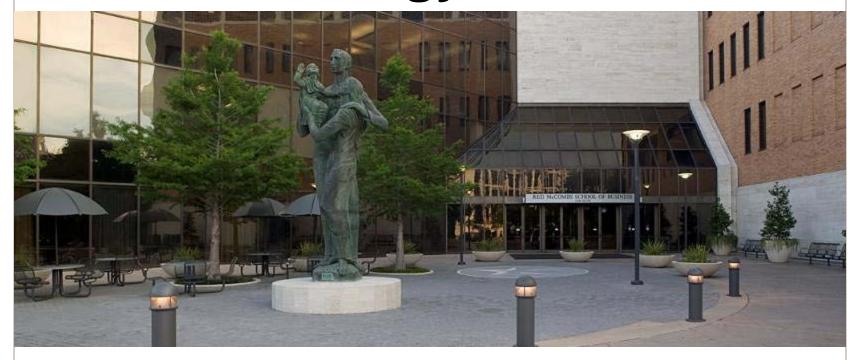
## McCombs Knowledge To Go



**December 13, 2011** 



# Open Innovation and Technology Transfer



Sustaining the Firm of the Future John Sibley Butler



## **Purpose**

- Discussion of How we view the Economy
- Models of Open Innovation
- Open Innovation and Technology Transfer



## **The Pony Express**

Management Decisions and Innovation

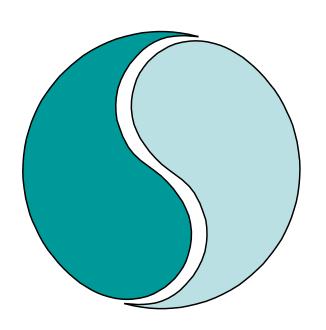


## **Schumpeter or Keynes**

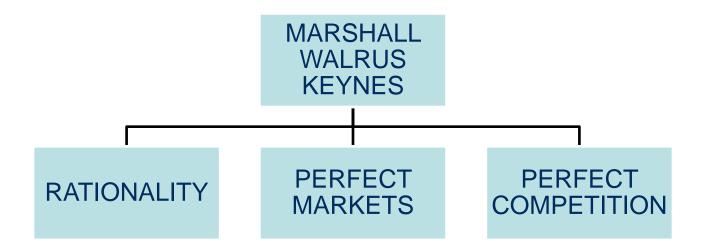
- **Modern Prophets**
- Peter Drucker

## **Economics and Entrepreneurship**

- How can one maintain an economy in balance and stasis?
- **V** Equilibrium Theory
- v Ricardo
- **v** John Stuart Mill
- v Alfred Marshall
- v Keynes



## **General Equilibrium Theory**



## KEYNES'S VIEW: Understanding the Economy

Real Economy of Goods and Services

Controls

Symbol of Economy: Money and credit

- Real Goods & Services (Depend on it)
- The Veil of Things

Individuals/Businesses vs. the Macro-economy of Nation State

- Macro-economy is everything
- Individuals/businesses have little power to direct the economy.

Production (supply) vs. Consumption (demand) as the Driving Force

- Supply as control
- Demand drives economic phenomena, capital formation, productivity & employment

## Joseph A. Schumpeter The Concept of Creative Destruction

 Yesterday's capital equipment and investments become obsolete in a climate of creative destruction. The more an economy advances, the more capital formation is required.



- Question becomes "is there enough capital? Is there enough capital to stay in business?
- Is there enough capital to survive creative destruction?



## **An Economic Model Which Explains**

- Schumpeter's model of the world is more realistic
- The Keynesian, or classical, treatment of innovation as being outside of the economy can no longer be maintained



## An Economic Model Which Explains (Cont.)

- The basic question of economic theory, especially in highly developed countries relate to entrepreneurship and innovation
- How can capital formation and productivity be maintained so that rapid technological change as well as employment can be sustained?



## Schumpeter's economic model explains:

- What is the minimum profit needed to defray the costs of the future (to survive destruction)
- What is the minimum profit needed, above all, to maintain jobs and to create new ones?



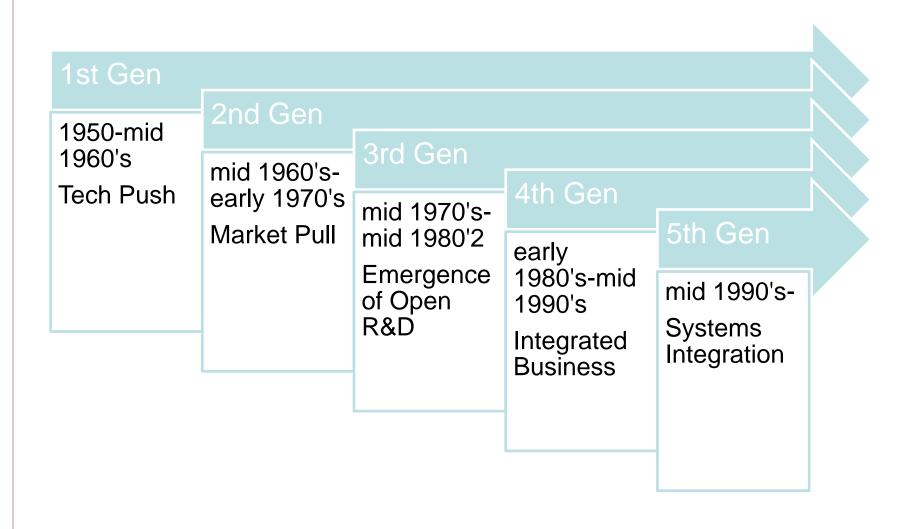
## **Definitions of Open Innovation**

- Open Innovation: "Open innovation is a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology."
- Innovation: "an idea, practice, or object that is perceived as new by an individual or other unit of adoption."

**Chesbrough, Henry.** *Open Innovation: The new imperative for creating and profiting from technology.* Boston: Harvard Business School Press, 2003.



## **Development of Open Innovation**



Roy Rothwell

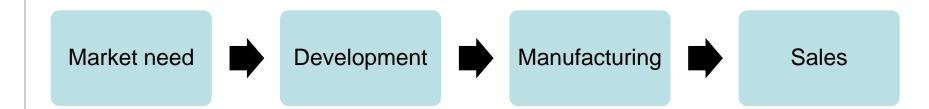


Technology push: 1<sup>st</sup> Gen



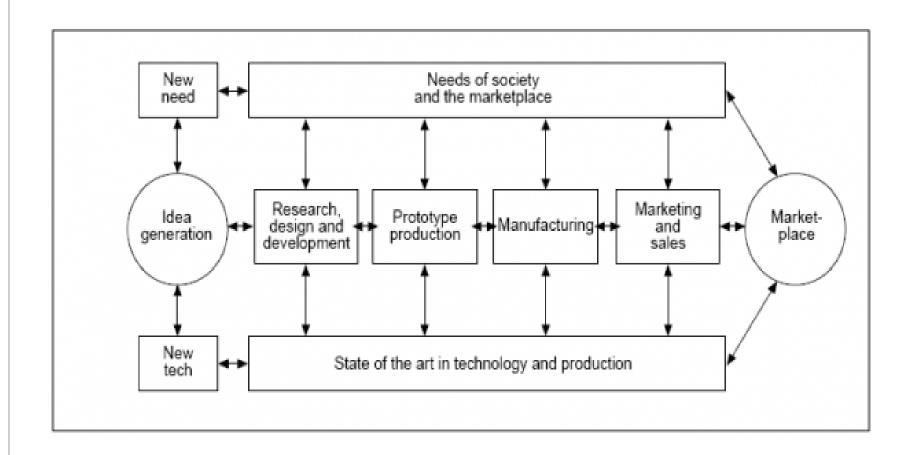


Market Pull

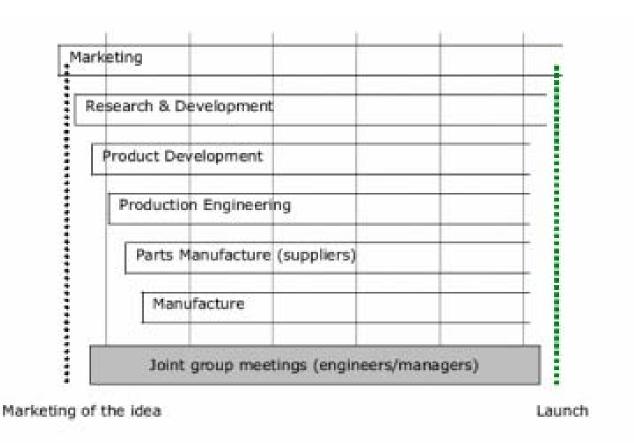




Coupling of R&D and marketing (3G)

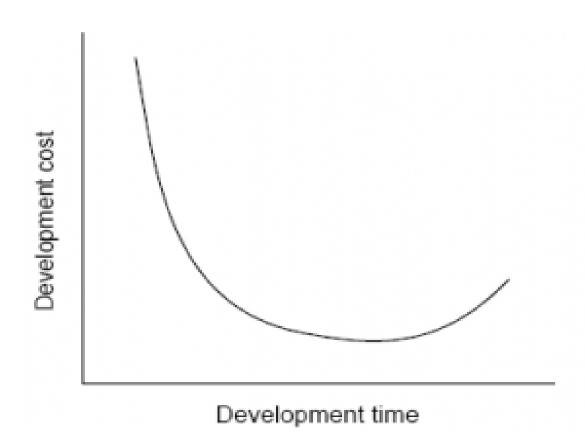


Integrated business processes (4G)





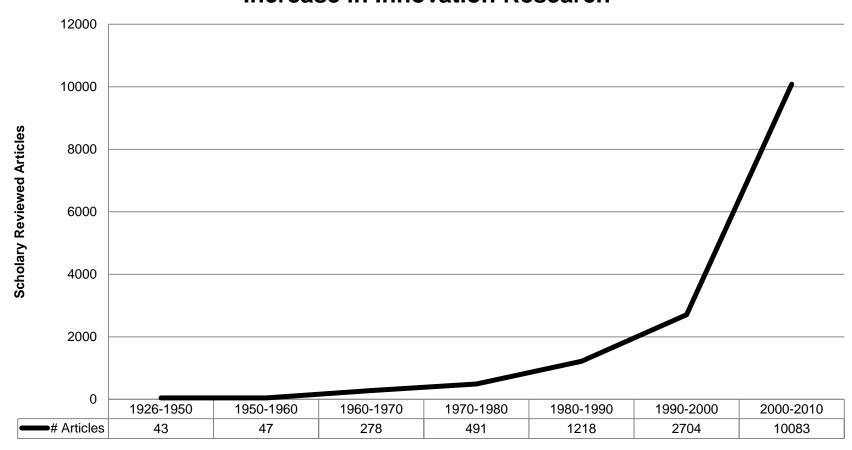
System integration and networking (5G)





## **Innovation Research Trends**

#### **Increase in Innovation Research**





## **Business Models of Open Innovation**

- The Gold Standard (Connect and Develop)
- Imitators-Alcatel Luscent
- The example of MS Kinect with Open Innovation
- The Innovation Stage Gate Process (Grummond)





 Launched Connect and Develop Innovation Program





## **Specific Innovation Goals**

- Bring new innovation to the market in half the time
- Enhance innovation productivity; double the output and be better than BIC competition
- Significantly increase the Net Present Value delivery of the innovation portfolio
- Better brand experience and lower product cost structure than competition



## Why Connect and Develop??

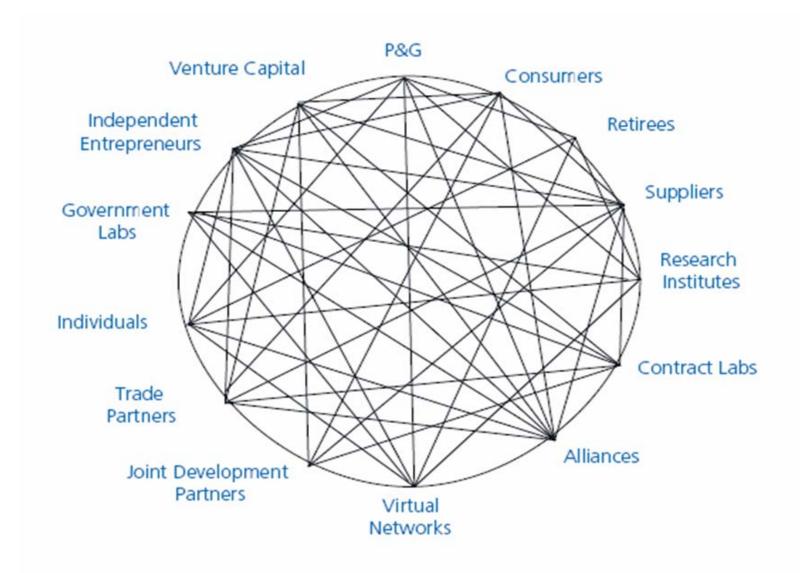
- Market life of an innovation to drive preference halved
- Needed to enhance productivity of innovation investment
- Innovation occurring everywhere globally
- Global competition much better
- 1.5 million scientists and engineers available to help



## **Pillars of Connect and Develop**

- 1. MAKE IT AN EXPLICIT INNOVATION STRATEGY
- 2. HAVE A "WHERE TO PLAY" STRATEGY
- 3. HAVE A SEARCH STRATEGY
- 4. RAPID ASSESSMENT & DEAL MAKING
- 5. BUILD CORE CAPABILITIES & KNOWLEDGE

## The Model





### **Outcomes**

- Annual Organic Sales Growth of 5 to 7%
- Double digit profit growth
- R&D Innovation Productivity increased 100%
- Approximately 60% of all initiatives have important external component
- NPV of Company Innovation increased to 100% delivered vs projected
- Volume and Value Share of all Business Units grew globally



## Other Cases In Open Innovation





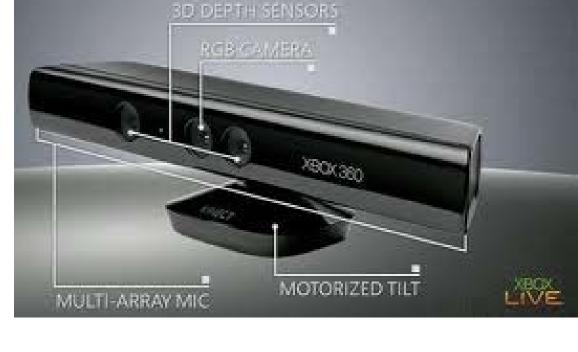
## The Case of MS Kinect

Is this your image of Microsoft??





## **Consider the Kinect**







## What Makes this Open Innovation??

- Kinect Add On Released in November 2010
- Within Weeks Individual hacks that took the Kinect technology and repurposed it in ways that had yet to be imagined began to spring up on YouTube and the world's top technology & social blogs.

## The Microsoft Choice??

## Option 1:

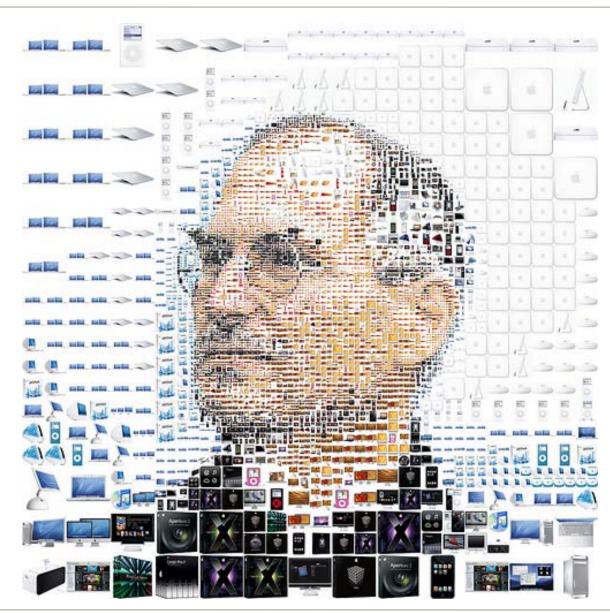
 Ignore the hacks on the original purpose of the Kinect Controller and disavow those uses.

## Option 2:

 Embrace the hacks as innovative methods of using their product.



## The Irony



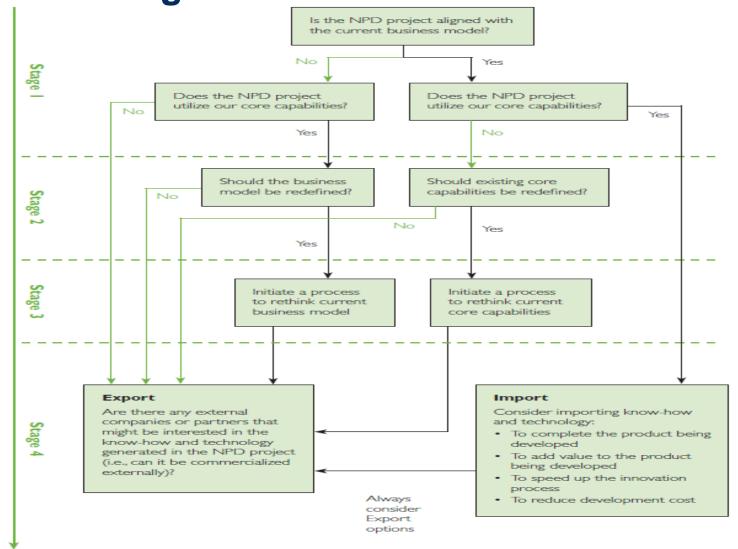


### **Lessons From Kinect**

- Harness the Power of External Influencers on your technology and organization
- View External Innovation as Opportunity not Competition
- Encourage Staff and Team to Pursue external Opportunities.



## Grummond's Theoretical Stage Gate Innovation Model





## Open Innovation, Regional Advantage, Clustering and the Firm



### Where Are the Most Successful U.S. Clusters?

It depends on who you ask.

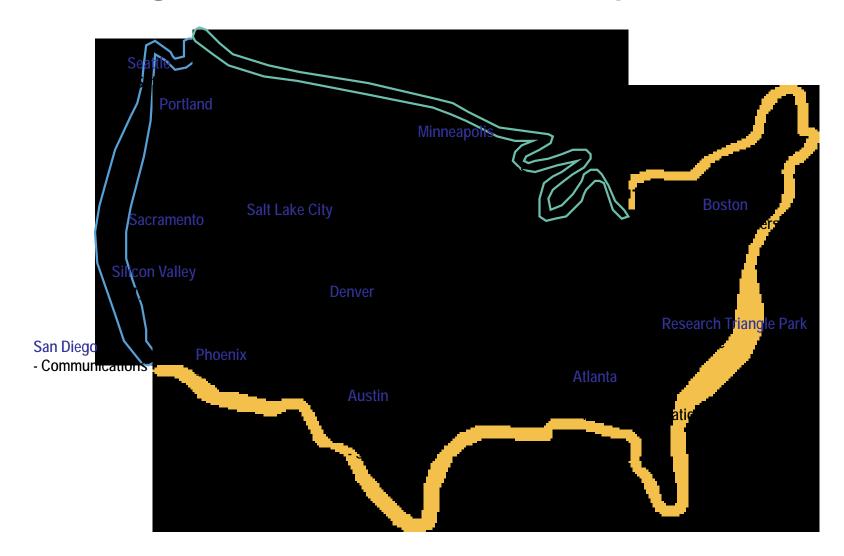
### **Technology Clusters**

#### **According to Madison Economic Development**



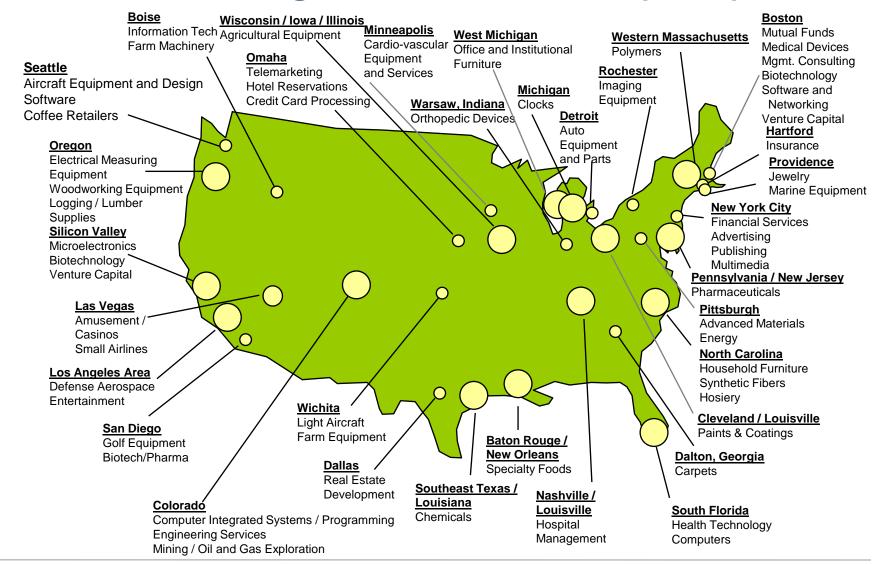
### **Regional Clusters**

#### **According to Institute of Portland Metropolitan Studies**



### **Regional Clusters**

### **According to Michael Porter (2003)**



### **Clusters and Technology Transfer**

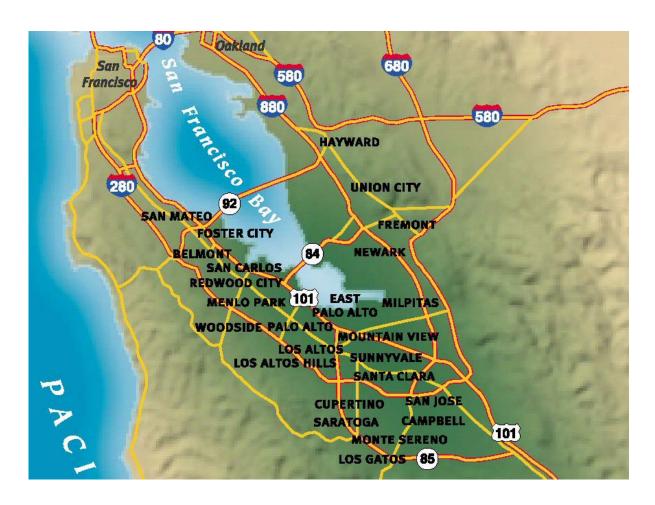
Source: Carlos Scheel, 2004

- 1. Determine the most effective clusters for the region
- 2. Promote education resources. A strong university inevitably stands at the center of a successful business development clusters
- 3. Find a way to create knowledge exchange networks (trust) among all participants of the value system
- 4. Articulate the specific performance/strengths of a region, and build sustainable high potential world-class products.
- 5. Utilize information technologies, especially Community Learning Centers.

### **Technology Transfer and Open Innovation**

- Strong science base
- Entrepreneurial culture
- Growing company base
- Ability to attract key staff
- Availability of finance
- Infrastructure
- Business support services and large companies in related industries
- Skilled workforce
- Effective networks
- Supportive policy environment

### Silicon Valley: Mother of All Clusters



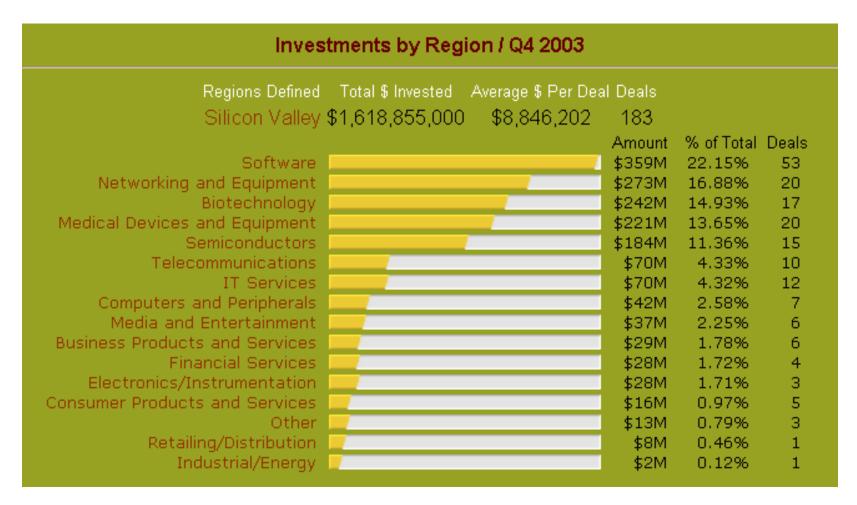
A region of networks - Anna-Lee Saxenian

### **Dominance of Silicon Valley in VC**



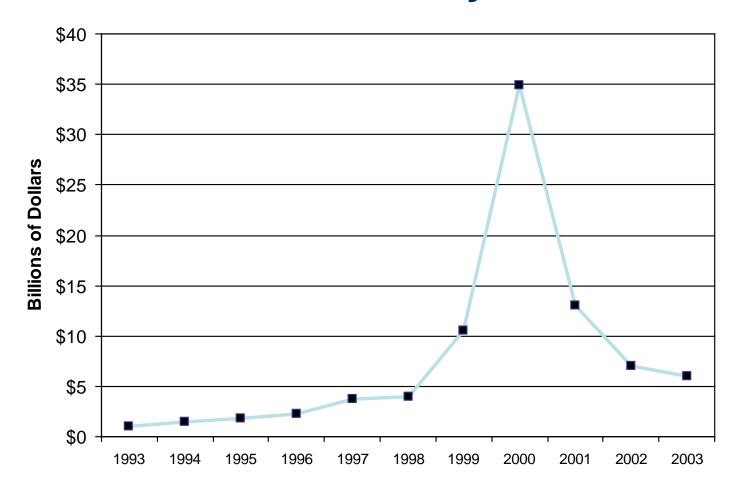
Silicon Valley consumes almost 1/3 of total V.C. investments in the U.S.

### Types of Industries in Silicon Valley



IT industries, followed by Bio-Medical are dominants.

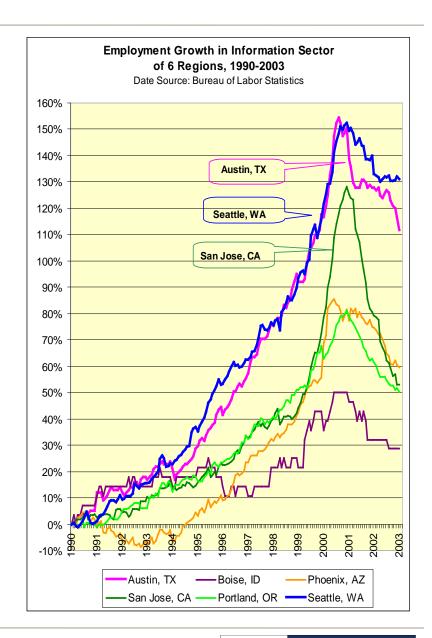
### Boom and Bust of VC Investment in Silicon Valley



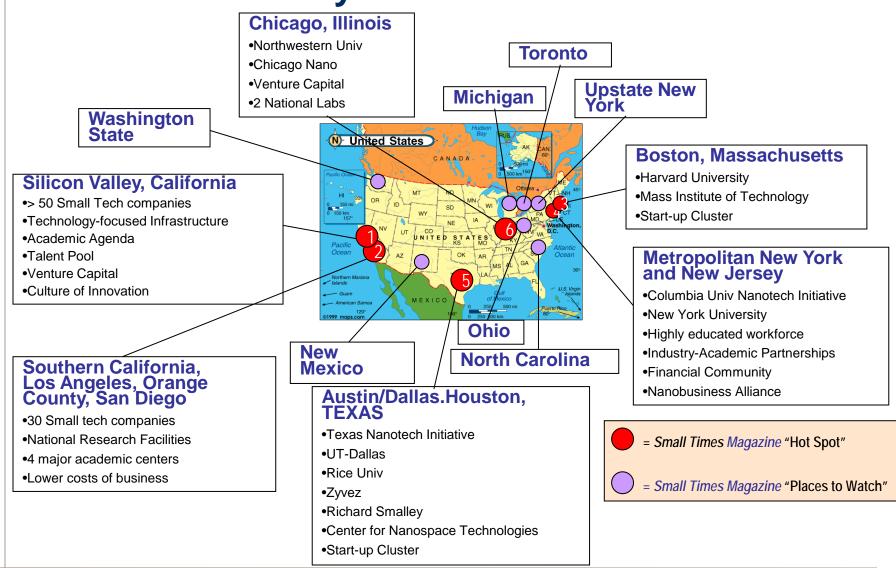


# Employment Growth in the Information Industry in Six U.S. Regions

- The six regions follow similar patterns of growth and decline
- The downfall of San Jose, CA (Silicon Valley) is significant



### Open Innovation Technology Transfer Case: Key NanoCenters



### **Regional Clusters:**

### **Beyond Technology Dominated Paradigms**

- The study of Regional Clusters and Regional Development has over emphasized the central role of technology & Venture Capital
- Also of central importance are the same concepts key to Technopolis
  - Quality Hard and Smart Infrastructure
  - Supportive Business Environment
  - Education and Training
  - Attracting and Retaining Talent
  - Entrepreneurship: Business, Civic, and Social
  - Regional Quality of Life
  - Regional Networking and Collaboration Leveraging assets to overcome challenges

## Entrepreneurship/Innovation needs to happen in a range of organizations and communities at the regional level

**Academic/Business/Government** 

Market/Customer

Manufacturing

**Creativity & Learning** 

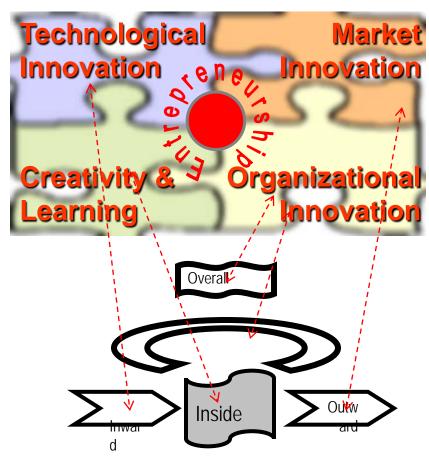
**Organizational** 

**Immigrant Entrepreneurship** 

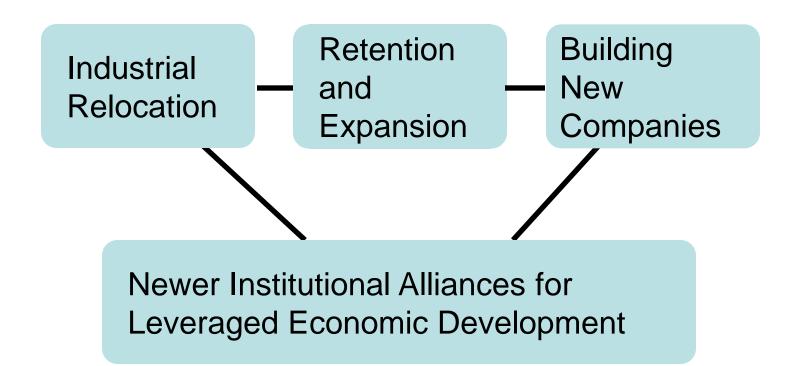
**Civic Entrepreneurship** 

**Social Entrepreneurship** 

**Technological Entrepreneurship** 

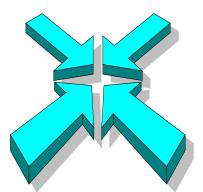


### Strategies for Regional Cluster Development and Open Innovation



### **Technopolis/Cluster: Critical Components**

- Build on Regional Strengths & Assets
- University/Centers of Excellence
- Industry: small, medium & large
- Finance: Government, VC, Angel, Self-Funded
- Effective Knowledge/Technology Transfer
- Science Park (s) ? Incubator (s) ?
- Quality of Life & Diverse/Tolerant Culture
- Hard & Smart infrastructure
- Talent" Grow, Retain, Recruit "Creative Class"
- Entrepreneurship: Business, Civic, Social
- Global Partnerships



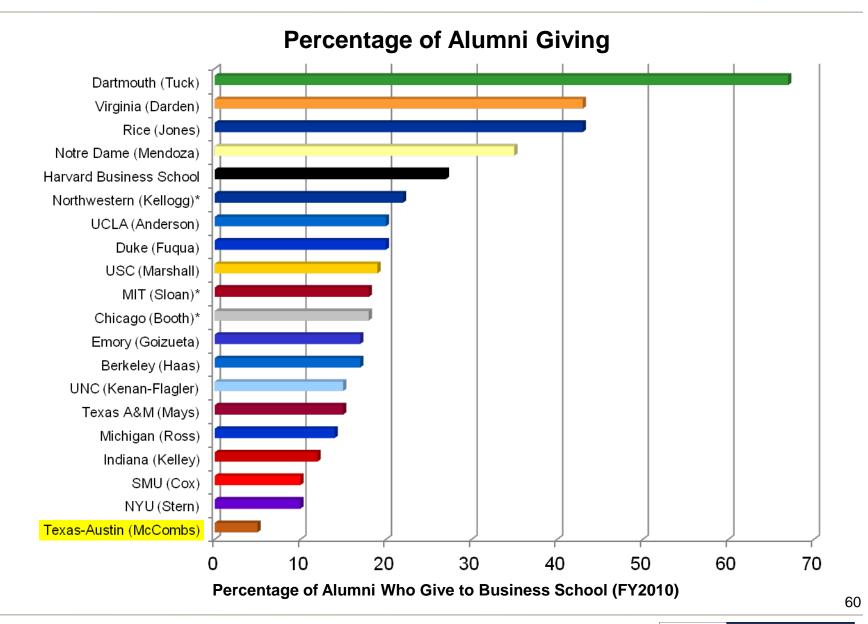


**Thank You** 

**Questions?** 



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Send me your feedback -- <a href="mailto:jmbock@gmail.com">jmbock@gmail.com</a>

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