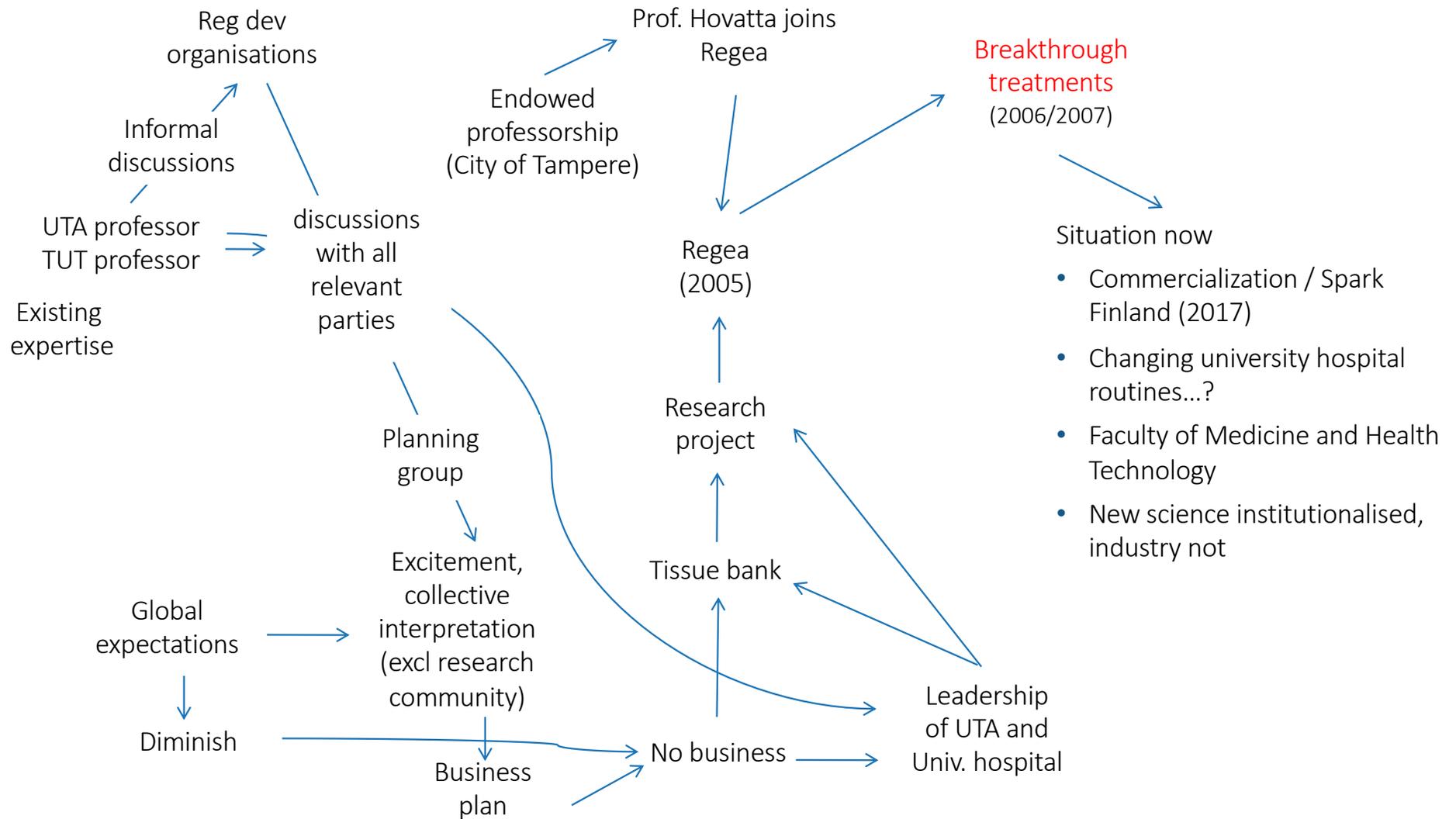


# Exam?

- Answer two of the following three questions, each worth 50% of the grade.
- I appreciate the extensive use of the course material.
- It's always nice to see how articles, videos, and lectures contribute to an answer.
- Some 400-500 words, give and take, per question is good.
- What are the conceptual and practical connections between X and Y?
- What is Q? What are the potential success factors and pitfalls of it - in other words, what might make it fail or produce results?
- How should we understand the place of CC as part of national innovation policy?
- How do regions nurture innovation through FFF?
- ???



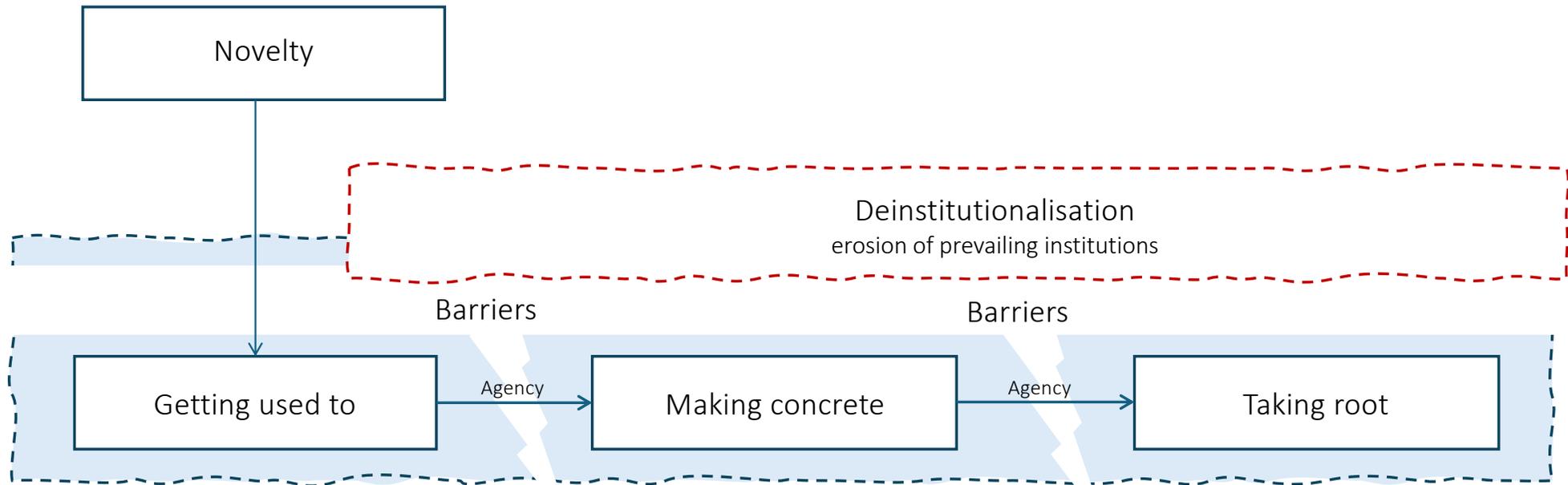
I - Seeds of change  
(1997-2000)

II – Belief formation  
(2001-2004)

III – Launch of  
activity  
(2004-2007)

IV – Institutionalization  
(2008-)

## Process of institutionalisation

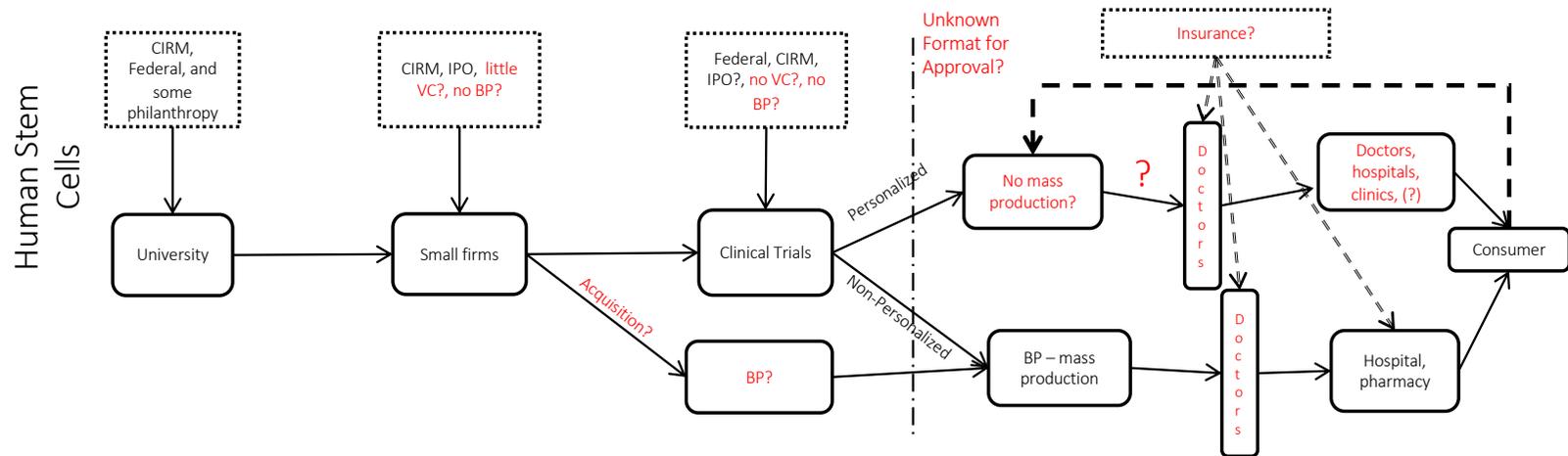
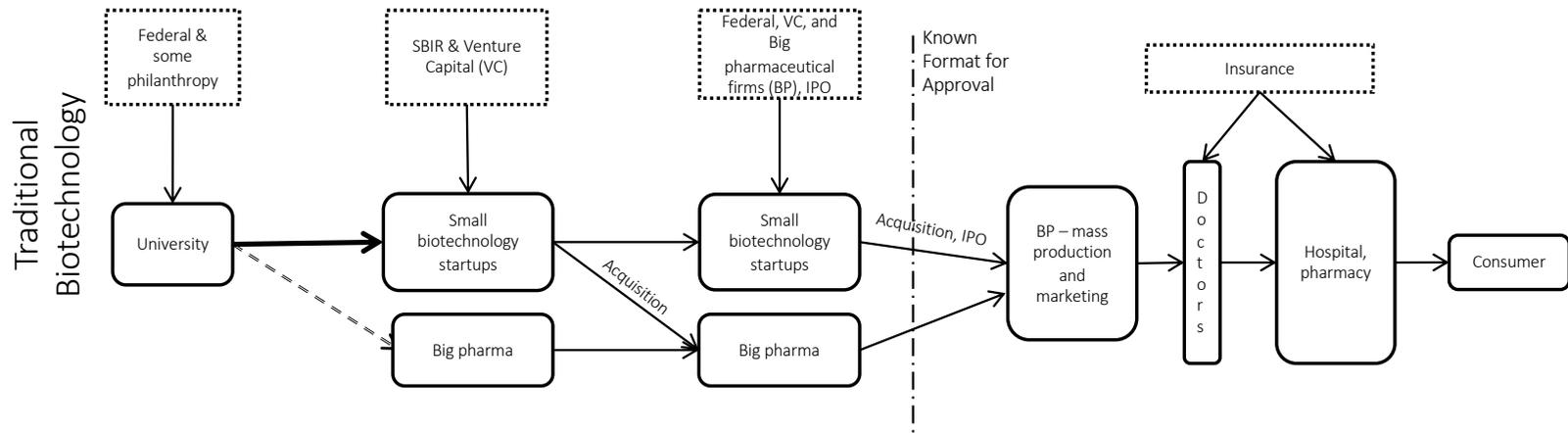


- Unstable processes
- Uncoordinated activity
- A few (support) actors
- Fragmented organisation
- No consensus on theories, knowledge, values or core actors
- High resistance

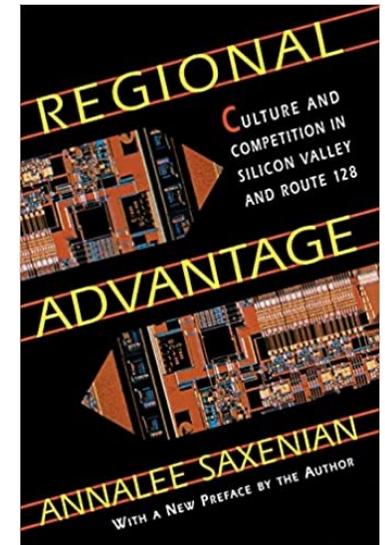
- Processes and structures taking shape
- Consensus, core values and theories emerging
- Intensive discourse
- Variance decreasing
- Heterogenous set of users

- Stable and structured processes
- Taken-for-granted
- Cohesive discourse
- Vested interests
- Low resistance
- Established support community

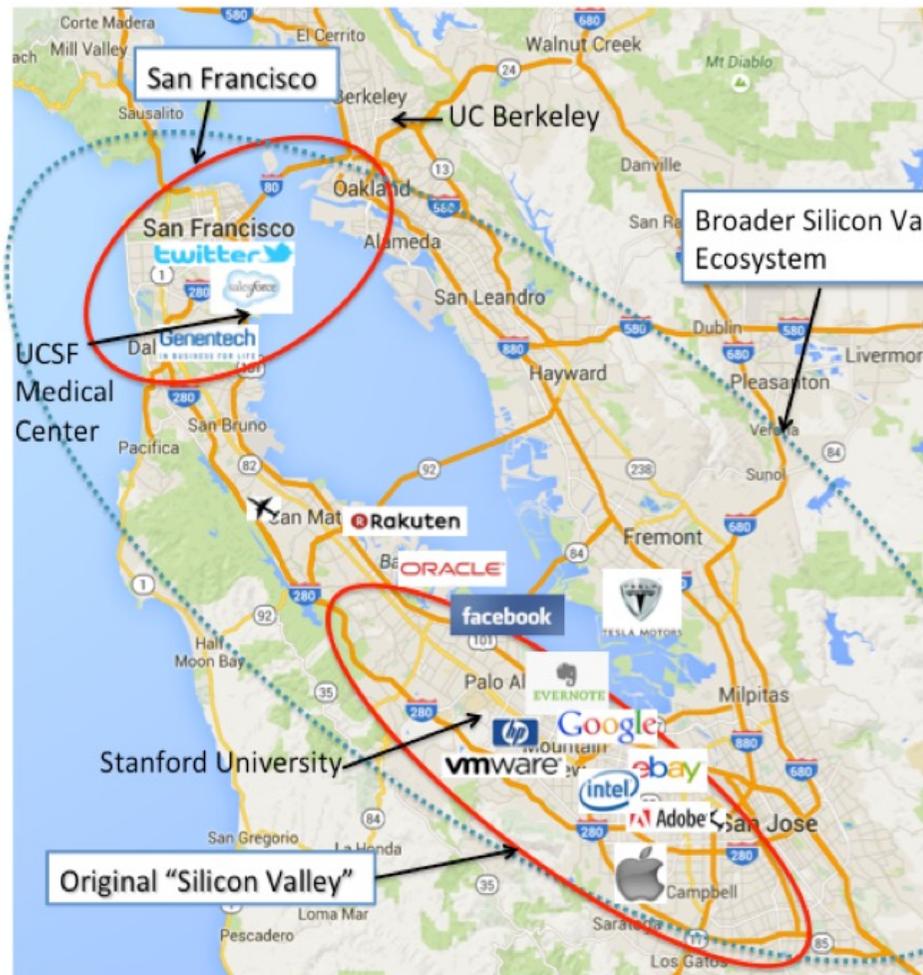
# Traditional Biotechnology VS Stem Cell Value Chain/Development Chronology in California (Martin Kenney)



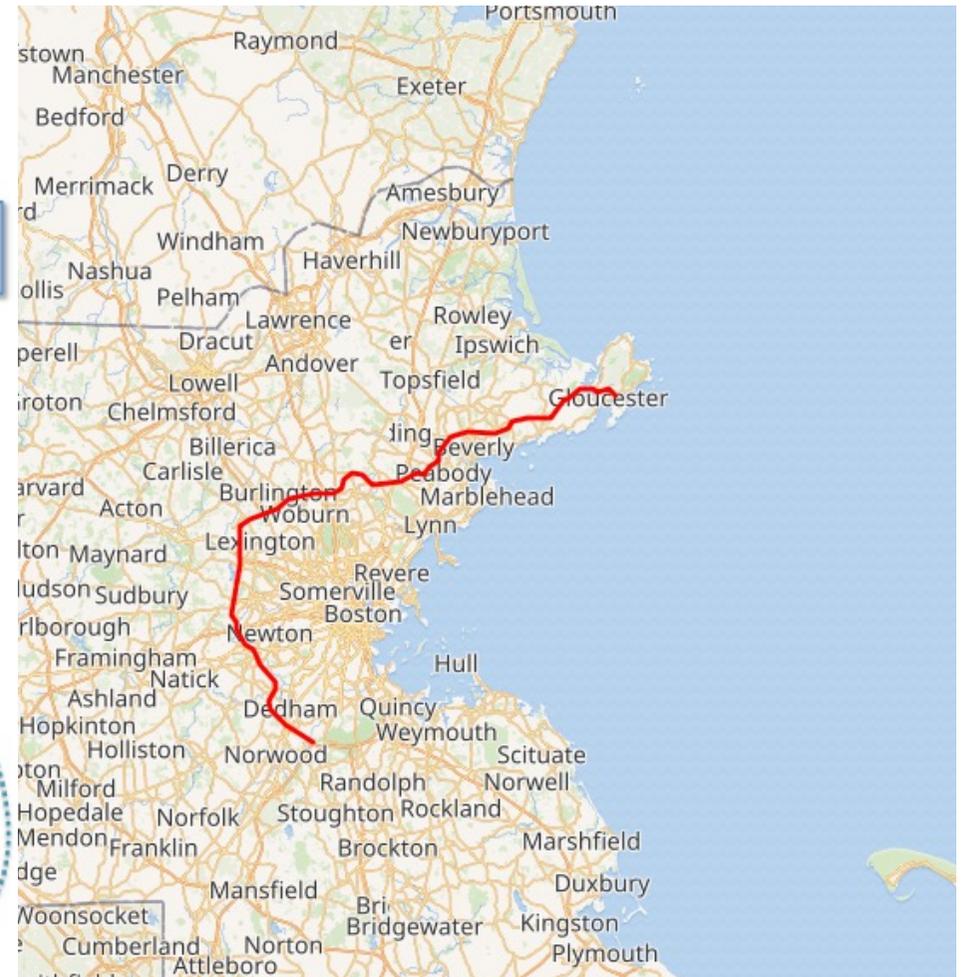
A classic study: Silicon Valley and Boston Route 128 in comparison



# Example: A classic but outdated comparison



(Kushida 2015)



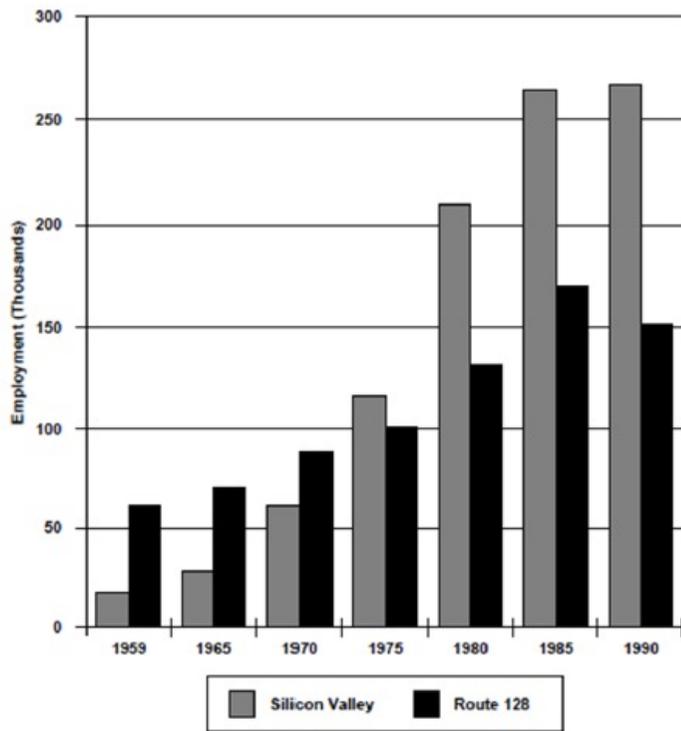
(Wikipedia)

## Case: Silicon Valley vs Boston Route 128

Silicon Valley	Boston Route 128
Stanford, Berkeley, UCLA, etc.	Harvard, MIT, etc.
Military spending 50's and 60's	Military spending 50's and 60's
Sun Microsystems	Apollo Computer, DEC
Xerox Parc, IBM San Jose	MIT's Lincoln Lab, GE, Raytheon
Semiconductors	Minicomputers
Crisis in the 1980's	Crisis in the 1980's

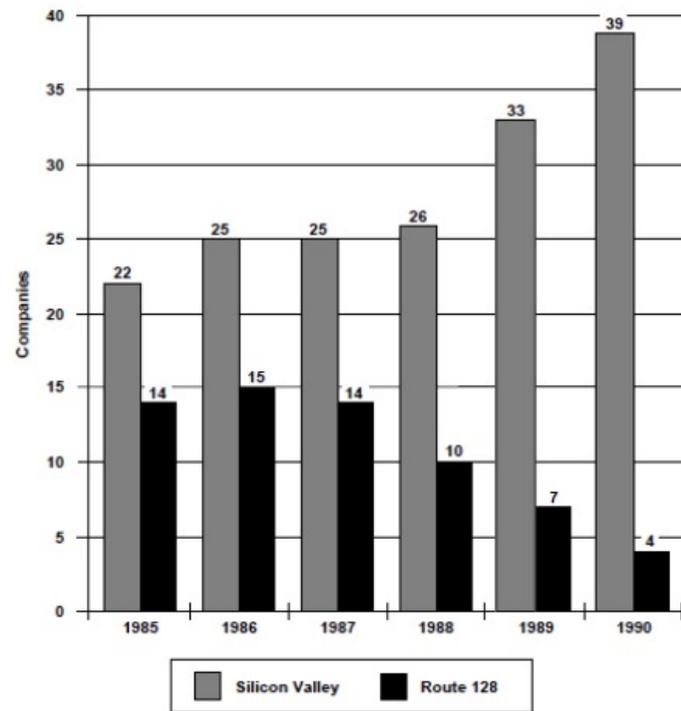
1994

Total High Technology Employment, Silicon Valley and Route 128, 1959 to 1990



Source: County Business Patterns

Fastest Growing Electronics Firms, Silicon Valley and Route 128, 1985 to 1990



Source: *Electronic Business*, "The Top 100 Exporters"

Animated timeline shows how Silicon Valley became a \$2.8 trillion neighborhood



<https://www.youtube.com/watch?v=UO-8CMdeSHA>

## Industrial organisation

Silicon Valley	Boston Route 128
Open systems (Intel, HP)	Own industry standards (DEC)
Culture of interaction, labour mobility, experimentations	Culture of secrecy, loyalty, individual action
Decentralized system, narrow core competencies, division of labour	Self-sufficiency under one roof, often in a large firm
Regionally network-based	Firm-based

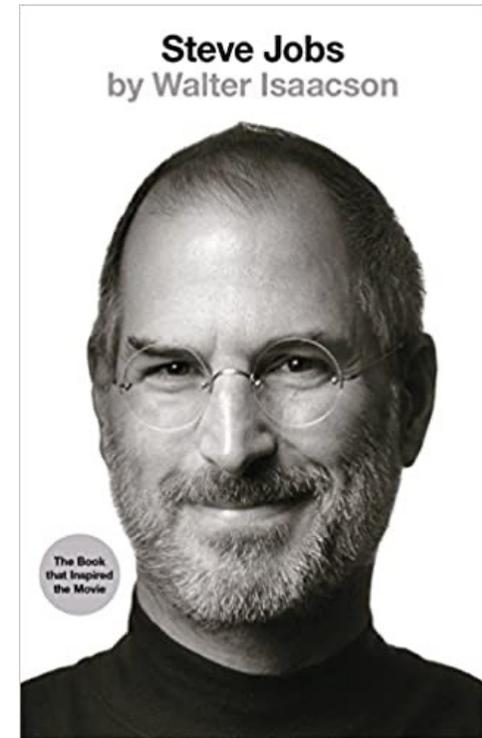
## The Silicon Valley system

- Entrepreneurial experimentation
- Venture capital finance
- Firm specialization and focus
- Open labor markets & information exchange
- Governance via cross-cutting institutions
- Regional economy may adapt when individual firms and even industries don't survive!

## The “Secret” of Silicon Valley

- Tolerance of failure
- Hyperactive and risk seeking culture
- Willingness to give back
- Meritocracy
- Obsession to find disruptive innovations
- Tolerance to treachery

(source: several studies)



# Why geography of innovation - 1980s

- Empirical observations about regions that adapted best to the crisis
- New insights on economic growth and the forces driving it
- Innovation was ideologically accepted by different political parties as well as the importance of local level

- Previous development model (colonialism, dominance of world-wide productive capacity and post-war reconstruction) did not work  
>>> 'quality' and 'innovation'

## Industrial districts with networks of SMEs

- Mobile labour force – internal transmission of expertise and know-how
- Division of labour between SMEs.
- Flexible SMEs (in terms of labour force but also shared machinery)
- Coordination of network of small firms - compensated smallness with networks in global markets

- **Knowledge and expertise sharing locally** >>> adaptation by quickly reacting to changing markets
- **Innovation** >>> quickly reacting to changing markets

# 1980's ideology (Richard Shearmur)

- Changing focus of economic geographers and development economists
    - Move away from 'top-down' and 'data-driven' approaches
  - Economic discourse turned away from Keynesianism and role of government
- 
- In local/regional development two opposing ideological streams both supporting the turn
    - Neo-marxism: localities must resist growing pressures of globalization, the de-localization of jobs and the closing of factories.
      - Solution: embed economic activity >> help enterprises to value local know-how, local community, local suppliers etc
    - Rise of neo-liberalism: localities need to become self-sufficient, compete for themselves.
      - Solution: Go for high road and focus on quality, innovation and avoid low road (cost competition)

## Localized / regionalized innovation policy

- Localized and/or regionalized innovation policies may have some advantages in solving specific issues
- National innovation policies have a regional impact - intended or not



- Differentiated strategies and instruments are needed both to serve the specific regions and to achieve national-level goals more effectively.
- Regional differences...
  - in the quantity and quality of innovation activity
  - in the performance of the entire regional innovation system
  - in the institutions/practices framing the action and choices made in the region

## 90s / 2000s

- Cities allow the clash of different ideas – diversity
- Innovation occurs in cities and/or dense clusters
- Cities also allow specific sectors to attain critical mass – specialization
- Diversity and specialisation are not opposites
  - In cities they can occur simultaneously
- Cities and clusters must be connected to other clusters around the world



# Urban bias in innovation studies

Richard Shearmur

“A pervasive, yet not always explicit, idea underpins the study of innovation and its geography: innovation occurs more readily in clusters or cities.”

- “The city . . . has long since been recognized as the birthplace of innovation and creativity” (Camagni, 2011)
- “[C]ities speed innovation by connecting their smart inhabitants to each other . . . [They are] the places where their nation’s genius is expressed” (Glaeser, 2011)

All this rests on observation and theory – still a biased view



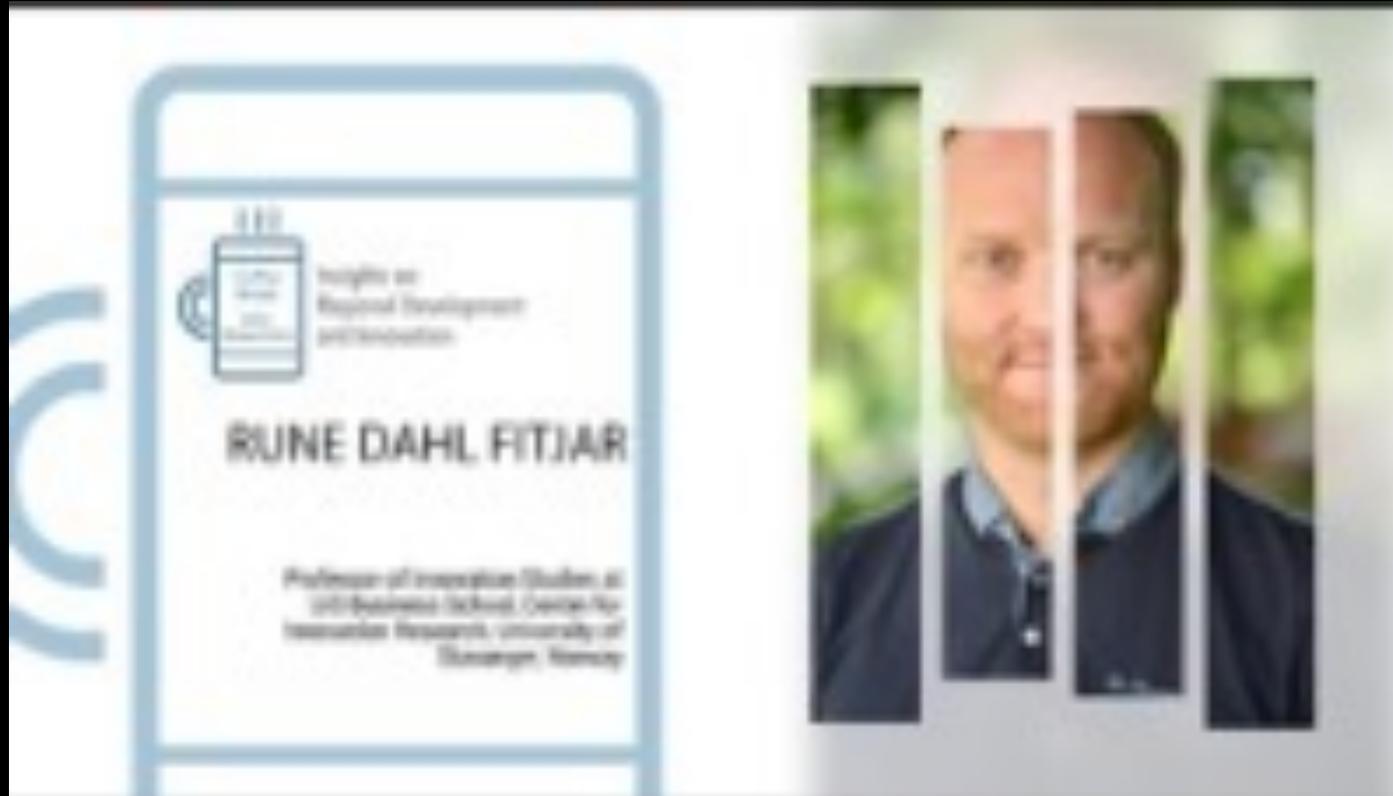
# BUT

- There exist different types of innovation
  - for many types of innovation, different innovators will operate in different ways
- What type of innovators can successfully operate in isolated areas?
  - Local innovators/entrepreneurs adapt to their local context and seek partners from elsewhere
  - Innovators may locate in isolated areas by choice
  - Innovators seek to solve problems typical for non-urban regions

- NOT a lower variety of interlocutors (MacPherson, 2008; Shearmur & Doloreux, 2015; Tierlinck & Spithoven, 2008), but lower frequencies of interaction (McCann, 2007).
- Innovators in peripheral regions tend to seek out strategic information sources and partners rather than relying upon informal contacts and serendipity



## Rune Dahl Fitjar: Nothing is in the air



<https://youtu.be/NKAxxMlv0Ic>

# Vinnväxt Programme, Sweden

- Supports regional growth through dynamic innovation systems
- Takes the form of a competition for regions
  - The winning regions will receive funding of up to SEK 10 million per year for a period of ten years.
- The aim is to promote sustainable growth by developing internationally competitive research and innovation environments in specific growth fields



## Theory informed strategy of the VINNOVA Sweden

Regional innovation systems

- Promote innovativeness and competitiveness
- Strong R&I milieus, focus on knowledge creation

Triple Helix

- University – industry – government
- Normative (regional) innovation policy approach

Mode 2

- Interdisciplinary, problem-oriented, application driven research

Regional Proximity/  
Globally connected

- Spatial and organisational proximity
- Global knowledge networks (open innovation)

Emphasis on global excellence

- In knowledge exploration and exploitation



# VISUAL SWEDEN

Europe's most attractive innovation environment for visualization and image analysis: Norrköping-Linköping.

VINNOVA

Vinnväxt winner 2016

SCIENCE PARK MJÄRDEVI



NORRKÖPING SCIENCE PARK

lead

LIU INNOVATION

almi

Vreta Kluster



SAAB

vti

LFV

SIEMENS

TOYOTA



Polisen

Nationellt forensiskt centrum



SMHI



Linköping

Where ideas come to life



NORRKÖPING



Region Östergötland

Secure IoT

SECTRA

drakryggen



Interspectral

image SYSTEMS

SICK|IVP

CONTEXTVISION

glana

STYLAERO

RAYSPACE

WoodEye

HOYLU

dataton

spotscale



CIND

BioOptico

usify.

VOYSYS

FINDOUT

xmreality

Senion

Optiplan

Agricam AB

CYBERCOM GROUP

Wheels Bridge

Visage Technologies

laidback

infviz

idea hunt

XperDi

IMAFOR

Termisk Systemteknik

gaia

melerit medical

Etteplan

Significant Bit

hiQ

enterspace

VISIARC

materialeyes

Teknomedia

DISENT AB

ENVISTA

MASSVIS

UNIVRS

Augminded AB

berotec

OLJONS MEDIA FISHY MINDS

COMBITECH

Sustainable business models

Effective logistics

Advanced materials

li.u



RI SE



<https://www.youtube.com/watch?v=ufirpyUGPLk>

Example: Virtual autopsy reveals ancient Egyptian murder (1:50)



<https://www.youtube.com/watch?v=BOE5rjdULTc>

# Stimulation activities



Matchmaking



EPO Seminars



Breakfast meetings



3D scanning



Challenge driven



Demand-driven

# Other project examples



Virtual Industrial landscape



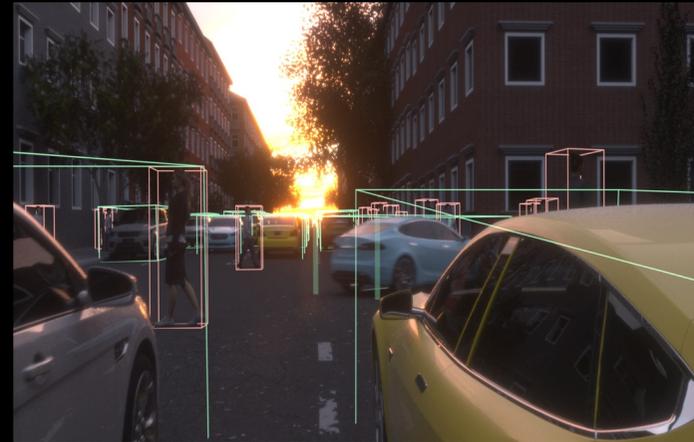
Industrial 3D X-ray



Remote crime scene presence



Entrepreneurs in residence



Platform for augmented intelligence

# Visibility



**VISUAL SWEDEN HIGHLIGHTS**

- Nytt projekt: Clappen
- Nytt projekt: Datorgrafik till GIS
- Om terroristjakt 31 maj!
- Beslutsstöd: Seminarium 8 juni
- SeRC Summer School 14-16/8

Newsletter – every 2nd week



Body Composition Visualisation  
Ett projekt inom Visual Sweden

Frederik Wahlström  
Senior Vice President, Deliveries & Support  
24 april 2018

VISUAL SWEDEN

Visual Sweden Day - yearly



DECODE THE CODE

Permanent exhibition



Swedish television - Face recognition



Most innovative of Almedalen



Visual Sweden venture Award

Complimentary if you like to learn more

[OPEN SPACE - SC19 Invited Talks:  
Anders Ynnerman, Linköping  
University, Sweden \(45:49\)](https://www.youtube.com/watch?v=CN2fzPlfznU)

<https://www.youtube.com/watch?v=CN2fzPlfznU>

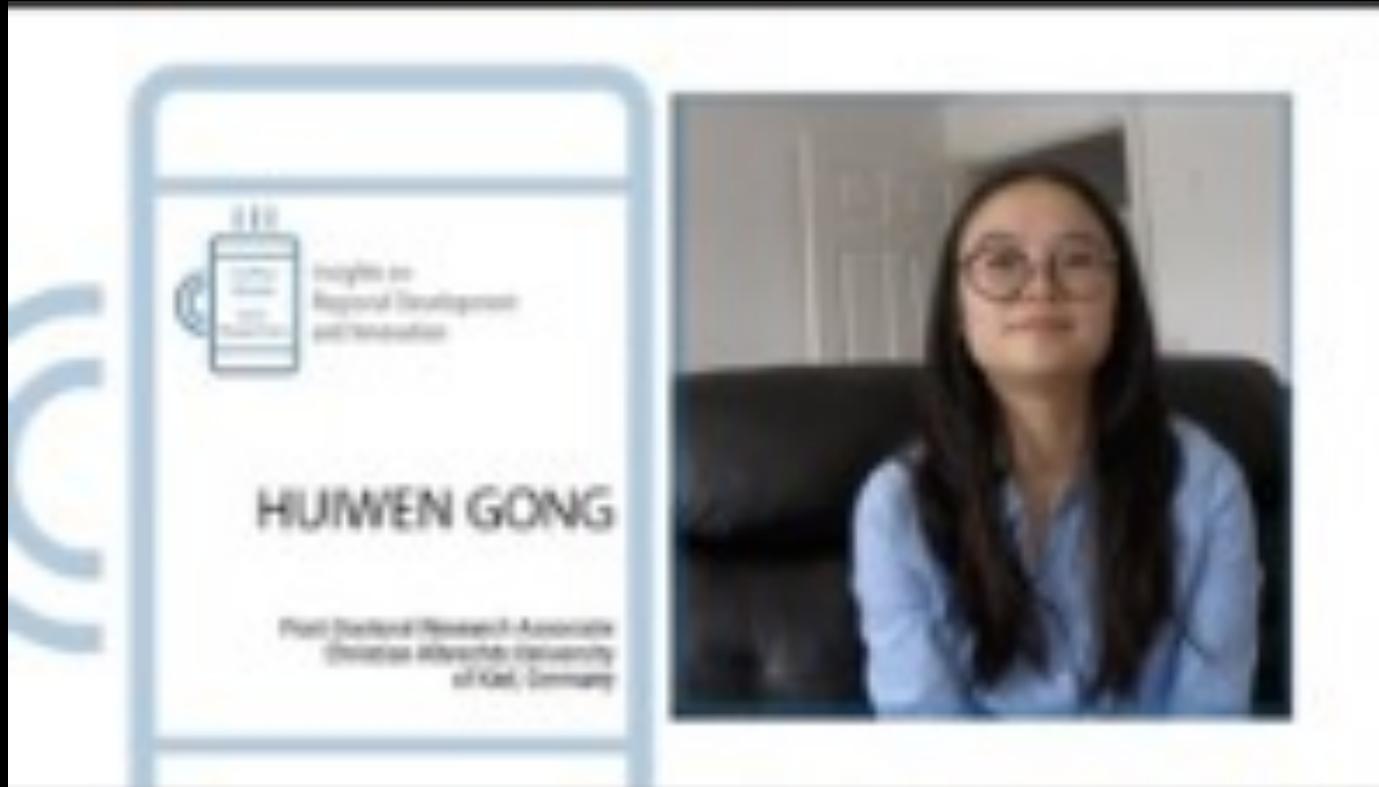


# Tampere?

- Business Tampere - <https://business tampere.com/>
- Business Tampere Magazine - <https://business tampere.com/news/>
- Pirkanmaan talous - <https://pirkanmaantalous.fi>



Huiwen Gong: Buzz and tranquility, what matters for creativity?



<https://youtu.be/mkFR4lbvnVE>

## Geography of innovation - contributions

- Uneven geography of knowledge and innovation clearly revealed
- Regional typologies
  - Key actors and governance (Cooke 1998; Asheim and Isaksen 2002)
  - Strengths in radical versus incremental innovations (Cooke 2004)
  - System failures (Isaksen 2001; Tödting and Tripl 2005)
- Application to a variety of contexts (Radosevic 2002; Chaminade and Vang 2008; Blazek and Zizalova 2010; Lundquist and Tripl 2013)
  - How to understand incomplete or emergent RIS?
  - How and why RIS emerge and strengthen over time?
  - How to compare RIS across fundamentally different institutional and economic contexts?

# Generic lessons

- The 'right' institutional, cultural and governance stimulate innovation in localities
    - What are the right conditions – that's the question
  - Local government and local networks may influence by being proactive in stimulating an innovative environment.
    - Call for place leadership (-> hal.kajo.316)
- 
- Local innovation stimulates local renewal
    - Regions need to specialize to generate clusters, milieux, systems or learning capacities
    - Diversity is the soil where specializations grow

