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Best Practices for Harnessing Innovation in California: The WIRED project

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Outline

- The broad context and the mission of this project.
- Definitions of innovation.
- Our approach (so far).
- The ground rules.
- Preliminary findings (very preliminary).
- Next steps.
- Acknowledgments.

Our mission

- The mission of the California Innovation Corridor:
 - To advance a shared “demand-driven” vision for California’s workforce system.
 - To examine sustainable entrepreneurship, manufacturing value chain and supplier competitiveness, and development of innovation-oriented technical talent.
- 60+ partner organizations in 13 counties.
- See www.californiaspaceauthority.org for a comprehensive overview of the project.



The problem

“California is losing its competitive edge”



[The Innovation-Entrepreneurship NEXUS \(04/ 2005\)](#)

No sub-region within the Corridor's 13 counties was ranked within the top 25 most entrepreneurial regions in the country

The problem

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Findings:

Drivers of growth in regional economies

1. **Entrepreneurship** (new firms + growing firms)
2. **Innovation** (patents, R&D, high-tech industries)

The problem

“California is losing its competitive edge”

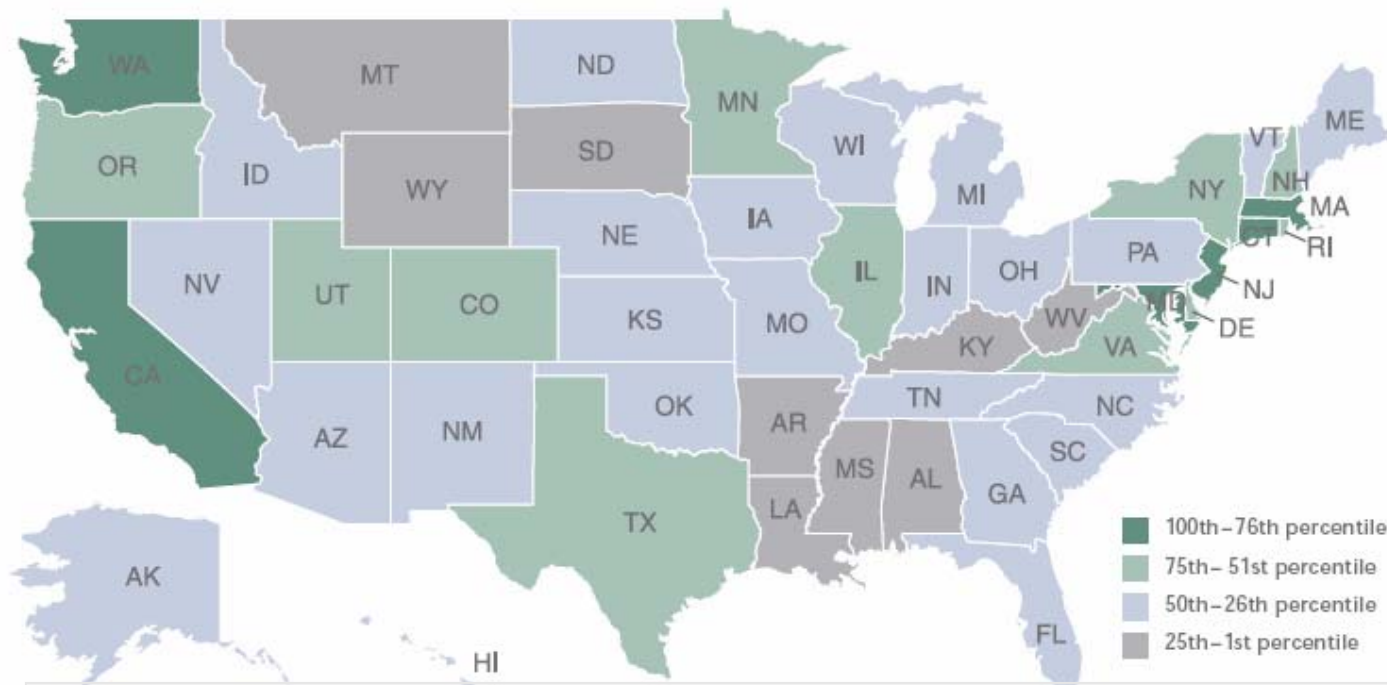


[The Innovation-Entrepreneurship NEXUS \(04/ 2005\)](#)

Implications:

1. Innovative regions need entrepreneurship to more fully develop local economies.
2. Entrepreneurial regions are likely to be associated with higher levels of technology.

The 2007 State New Economy Index*



2007 Rank	2007 Score	State	1999 Rank	1999 Score	2002 Rank	2002 Score	Rank Change from 1999* 2002**	
1	96.1	Massachusetts	1	82.3	1	94.5	0	0
2	86.4	New Jersey	8	60.9	6	81.8	6	4
3	85.0	Maryland	11	59.2	5	83.0	8	2
4	84.6	Washington	4	69.0	4	86.1	0	0
5	82.9	California	2	74.3	2	90.1	-3	-3



The 2007 State New Economy

STATE NEW ECONOMY SCORES BY OVERALL RANK

Index

State	Overall Rank	IT Professionals Rank	Managerial, Professional, Technical Jobs Rank	Workforce Education Rank	Immigration of Knowledge Workers Rank	Manufacturing Value-Added Rank	High-Wage Traded Services Rank	Export Focus of Manufacturing and Services Rank	Foreign Direct Investment Rank	Package Exports Rank	"Gazelle Jobs" Rank	Job Churning Rank	Fastest Growing Firms Rank
Massachusetts	1 96.1	4 1.86%	1 26.8%	1 52.4	15 14.1	2 46.8%	7 16.8%	11 \$27,535	5 4.5%	4 0.21	21 7.6%	39 22.6%	2 0.075%
New Jersey	2 86.4	3 1.94%	5 23.6%	6 46.9	29 13.5	32 21.1%	5 17.3%	19 \$23,039	6 4.5%	3 0.22	6 11.3%	8 29.0%	5 0.041%
Maryland	3 85.0	2 2.06%	2 24.8%	3 49.5	19 13.8	10 37.1%	25 13.0%	31 \$18,054	19 3.1%	36 0.08	4 11.6%	4 31.2%	3 0.058%
Washington	4 84.6	10 1.48%	16 21.1%	11 44.6	5 14.6	3 46.7%	31 12.1%	1 \$59,547	33 2.3%	22 0.14	9 9.1%	2 37.2%	10 0.032%
California	5 82.9	16 1.29%	17 21.0%	12 43.0	33 13.2	20 26.7%	6 17.1%	9 \$28,883	23 2.7%	19 0.14	10 9.0%	28 24.0%	9 0.034%

State	IPOs Rank	Entrepreneurial Activity Rank	Inventor Patents Rank	Online Population Rank	Internet Domain Names Rank	Technology in Schools Rank	E-Gov't Rank	Online Agriculture Rank	Broadband Telecommunications Rank	High-Tech Jobs Rank	Scientists and Engineers Rank	Industry Investment in R&D Rank	Venture Capital Rank
MA	5 5.79	43 0.22%	8 0.109	21 62.5%	15 2.87	33 4.76	18 5.41	1 7.18	7 5.80	1 6.5%	3 0.83%	6 1.00	6 4.11%
NJ	14 5.16	21 0.29%	9 0.107	20 62.6%	18 2.73	22 5.27	14 5.51	34 4.82	3 6.31	4 5.3%	9 0.54%	8 0.95	3 5.16%
MD	11 5.23	19 0.30%	20 0.081	10 65.1%	14 2.88	46 3.98	22 5.17	31 4.87	9 5.64	5 5.3%	1 0.98%	11 0.88	9 3.49%
WA	22 4.59	16 0.32%	18 0.086	6 68.0%	8 3.49	27 5.03	10 5.65	11 5.96	11 5.09	9 4.5%	11 0.52%	3 1.32	31 1.62%
CA	3 6.04	9 0.36%	1 0.143	34 56.8%	4 4.01	48 3.48	21 5.23	19 5.41	2 6.51	7 5.1%	12 0.50%	4 1.29	5 4.38%

Our specific task

- Straight from the subcontract:
 - The objective of this task is to facilitate transformation of the industrial and academic innovation enterprise by building an understanding of effective practices for how innovation is encouraged and commercialized. Successful completion of this task will result in greater job creation and economic opportunity as a result increased innovative new technological concepts.

Our task agenda

- The innovation environment.
- The model.
- The instrument.
- The method.
- The results.
- Next steps.

The real question

- What can we do better in education and training so the innovation environment, however it is defined, can be improved and sustained in California?

So, what is innovation?

- The National Council on Competitiveness:

Innovation is “the intersection of invention and insight, leading to the creation of social and economic value.”

Innovate America: National Innovation Initiative Report
ISBN 1-889866-20-2 (2004)

Or, perhaps, this is innovation

- The National Science Foundation Innovation and Discovery Workshop:

“Creativity involves the introduction of new variables, significant leaps, and novel connections. A subset of creativity, innovation, involves the creation of a new idea but also involves its implementation, adoption, and transfer. Innovation and discovery transform insight and technology into novel products, processes, and services that create value for stakeholders and society. Innovations and discoveries are the tangible outcomes. Creativity is needed to produce these outcomes. Innovation and discovery processes should be formal processes that harness creativity to those ends.”

Final Report from the NSF Innovation and Discovery Workshop: The Scientific Basis of Individual and Team Innovation and Discovery, NSF Report 07-25 (2007)

Or maybe this

- Andrew and Sirkin (2006):

Innovation is “the entire process of developing ideas with the goal of achieving payback.” The “four S’s” of the business process of innovation are start-up, speed, scale, and support costs; controlling them controls the impact of innovation.

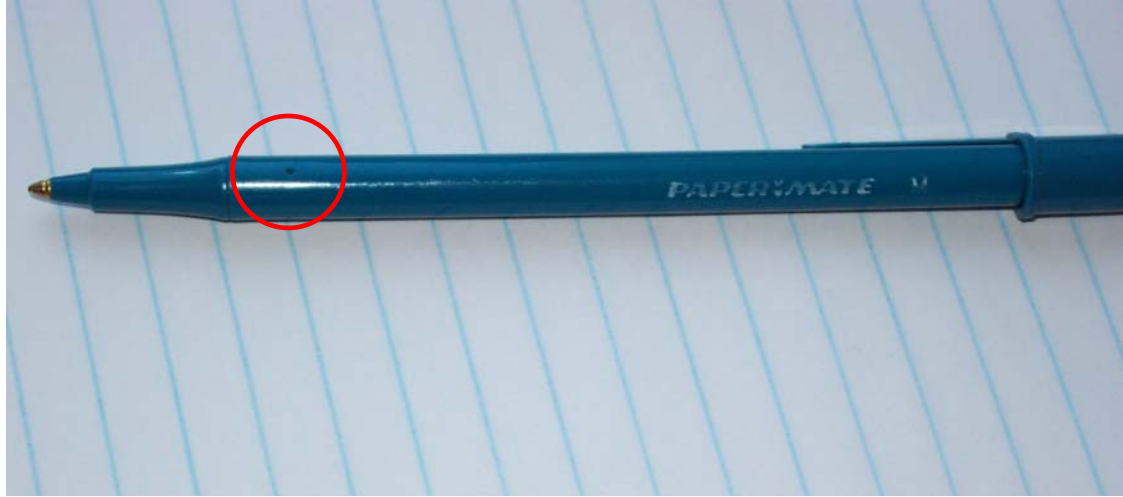
*Payback: Reaping the Rewards of Innovation
J.P. Andrew and H.L. Sirkin, 2006*

Or this

- Peter F. Drucker

“Change that creates a new dimension of performance.”

Or, finally, this



Is this air hole on a ball-point pen an invention or an innovation? (An actual conversation, but this wasn't the actual pen in question.)

Our approach (so far)

- Step 1: Borrow someone else's methodology.
- The European Community Innovation Survey (CIS) is a comprehensive, well documented program. Its criteria and benchmarks are:
 - Sufficient and high-quality human resources.
 - A strong public research base with strong links to industry.
 - Entrepreneurship for and through R&D.
 - Effective adaptation and use of intellectual property rights systems.
 - Research- and innovative- friendly regulators.
 - A competitive environment and supportive competition rules.
 - Supportive financial markets covering the various stage of development of high-tech and other innovative companies.
 - Macro-economic stability and favorable fiscal conditions.

Our approach (so far)

- Step 2: Get expertise from the business school.
- The students of MGT 269 developed a framework breaking down the question into four major categories:
 - Management.
 - Marketing.
 - Finance/accounting.
 - Production/R&D.
 - Management Information Systems.

Our approach (so far)

- Step 3: Try it out on friendly companies.
 - 1 computer/entertainment.
 - 1 biotech.
 - 1 industrial manufacturing.
 - More to come.

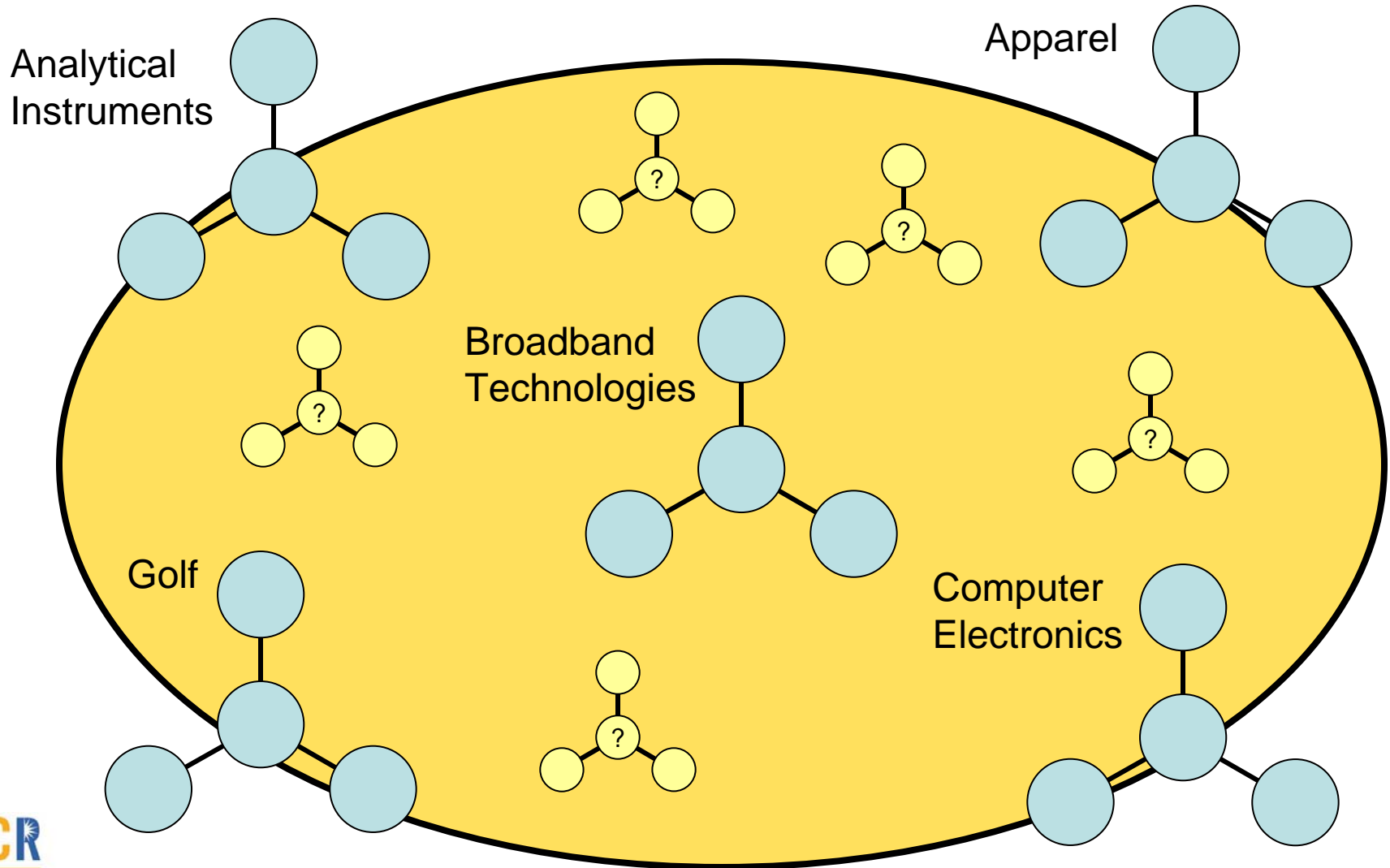
The ground rules

- Business settings only: no weekend inventors.
- Anonymous: Reports will not identify specific companies or products.
- Focus is on best practices, not company secrets. We ask the companies to treat us like newspaper reporters. So far, only one company has asked us to sign a non-disclosure agreement.
- Emphasize opportunities for engineering students to learn about business, and for faculty to identify ways of building entrepreneurship and innovation into the curriculum. This is evolving.

Findings

- It's hard to draw many conclusions from three interviews, but...
 - Even privately held, debt-free companies use other people's money to grow – via partnering with customers, for example.
 - We see signs that innovative companies work with their customers. They don't develop a product and find a customer for it; they use their relationships and capabilities to develop things that the customer wants.
 - Capitalization, market position, and ownership structure clearly have an impact on a company's approach to innovating.

Next steps: SoCal cluster interviews



Next steps: Life beyond Southern California

- We hear that there are innovative companies in places like Silicon Valley and San Diego. We will work with Stanford University to investigate these rumors.

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Additional material

Governor Arnold Schwarzenegger, February 2, 2006

"Innovation, education and entrepreneurship: those are the **keys** that will open the door to challenging and rewarding jobs. That is exactly what the California Space Authority is doing with its thoughtful strategy to keep California competitive in the global economy of the 21st Century."



The Solution:

The California Innovation Corridor

- **WIRED** : Workforce Innovation in Regional Economic Development Grant
- **Objective:**
 - Entrepreneurship
 - Global manufacturing competitiveness
 - 21st century workforce development
- **Corridor members:**
 - [The California Space Authority](#)
 - [CA Labor & Workforce Development Agency](#)
 - 60+ partners in 13 counties.
- **Funding:** \$15M/3-Year Grant
US Department of Labor to California + CA Space Authority

