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# Engineering Innovation Pathways to a Sustainable Future “The WIRED Project”

Graduate Student Advisors-WIRED team members

Henry Vu, PhD Candidate

Daniel Pio, MBA Candidate





# Report to the Secretary of Commerce- January 2008\*

## The Assignment:

Develop new, improved measures of innovation in three areas:

1. How innovation occurs in different sectors of the economy
2. How it is diffused across the economy
3. How it affects economic growth

\*Innovation Measurement: Tracking the State of Innovation in the American Economy. The Advisory Committee on Measuring Innovation in the 21<sup>st</sup> Century Economy



# Report to the Secretary of Commerce- January 2008

The definition of measurable innovation:

“The design, invention, development and/or implementation of new or altered products, services, processes, systems, organizational structures, or business models for the purpose of creating new value for customers and financial returns for the firm.”



# Report to the Secretary of Commerce- January 2008

The conclusion: “Collaboration”

- Government
  - Develop a national innovation index
- Business
  - Create, expand, assess firm and industry level measures of innovation
  - Develop best practices for innovation management and accounting
  - Participate in research activities; make innovation information available to researchers



# Report to the Secretary of Commerce- January 2008

The conclusion: “Collaboration”

- Researchers
  - Identify/assess innovation outcome measures
  - Identify gaps in innovation data/how to fulfill them
  - Analyze relationships between innovation activities and collaboration, innovation performance and firm performance.

# Our specific task

The objective of this task is to learn about effective practices for how innovation is encouraged and commercialized.

These insights will result in greater job creation and economic opportunity.

The project will facilitate transformation of the industrial and academic innovation enterprise.

## The Innovation Environment



# Last year

## The problem

**“California is losing its competitive edge”**



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



[The 2007 State New Economy Index](#)

# The problem-findings



Drivers of growth in regional economies

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



Drivers of growth in state economies

1. **Innovation**
2. **Globally linked**
3. **Entrepreneurial**
4. **Dynamic**
5. **Educated workforce**
6. **Embracement of information technology**

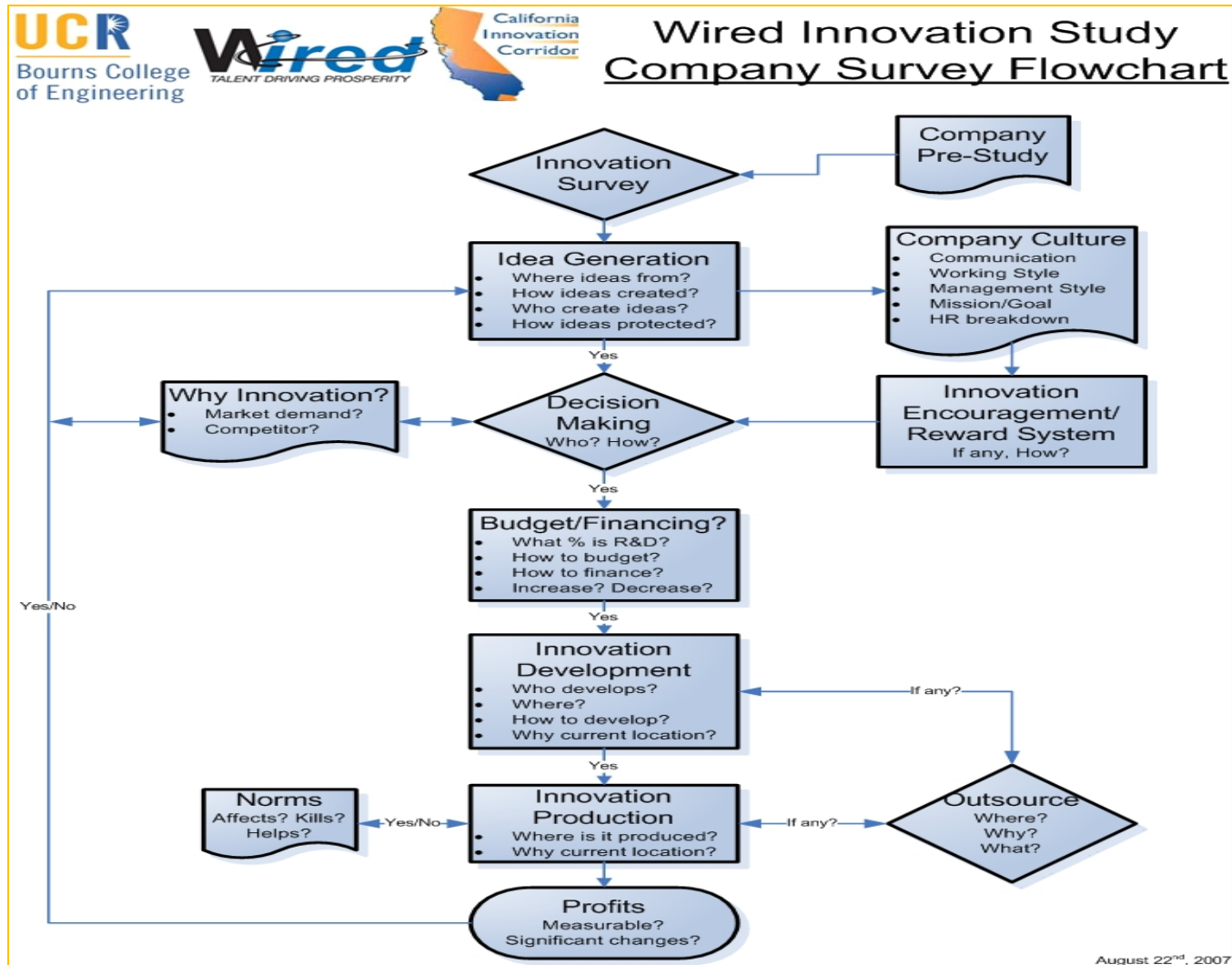
# The problem-The implications

## **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.
3. Workforce changes to meet the demands of the rapidly evolving economies include advanced levels of technical education, management skills, and global expertise.
4. Successful integration of wealth creating entrepreneurial activities implies local commitment to infrastructure improvements.

# The Bourns Solution

“The Partnership Model: Industry, Government, Academia”



# This year's accomplishments

- 20+ interviews across California
- 3 student to student colloquia
- Extensive annotated bibliography (to be posted this summer at [www.innovatecalifornia.net](http://www.innovatecalifornia.net))
- Regular participation in industry-academic conferences
- Participation in entrepreneurship training building business around Engineering lab work



# What have we learned



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# Next steps

- Online survey
- Data analysis
- Road show
- Integration into the curriculum
  - Graduate
  - Undergraduate
- Final reporting and publication



# Future

- Find funding:
  - Refine the study for finer metrics in California
  - Expand this study to the NAFTA region with our Engineering/Business partnerships

