



**This workforce solution was funded by a grant awarded under Workforce Innovation in Regional Economic Development (WIRED) as implemented by the U.S. Department of Labor's Employment and Training Administration. The solution was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership. This solution is copyrighted by the institution that created it. Internal use by an organization and/or personal use by an individual for non-commercial purposes is permissible. All other uses require the prior authorization of the copyright owner.**



# California Innovation Corridor

*Innovation, Manufacturing/Supply Chain  
Transformation, Workforce Development*

**Judy Turner**

**Director, Programs and Partnerships**

California Space Authority

May 3, 2007





# Workforce Innovation in Regional Economic Development - WIRED

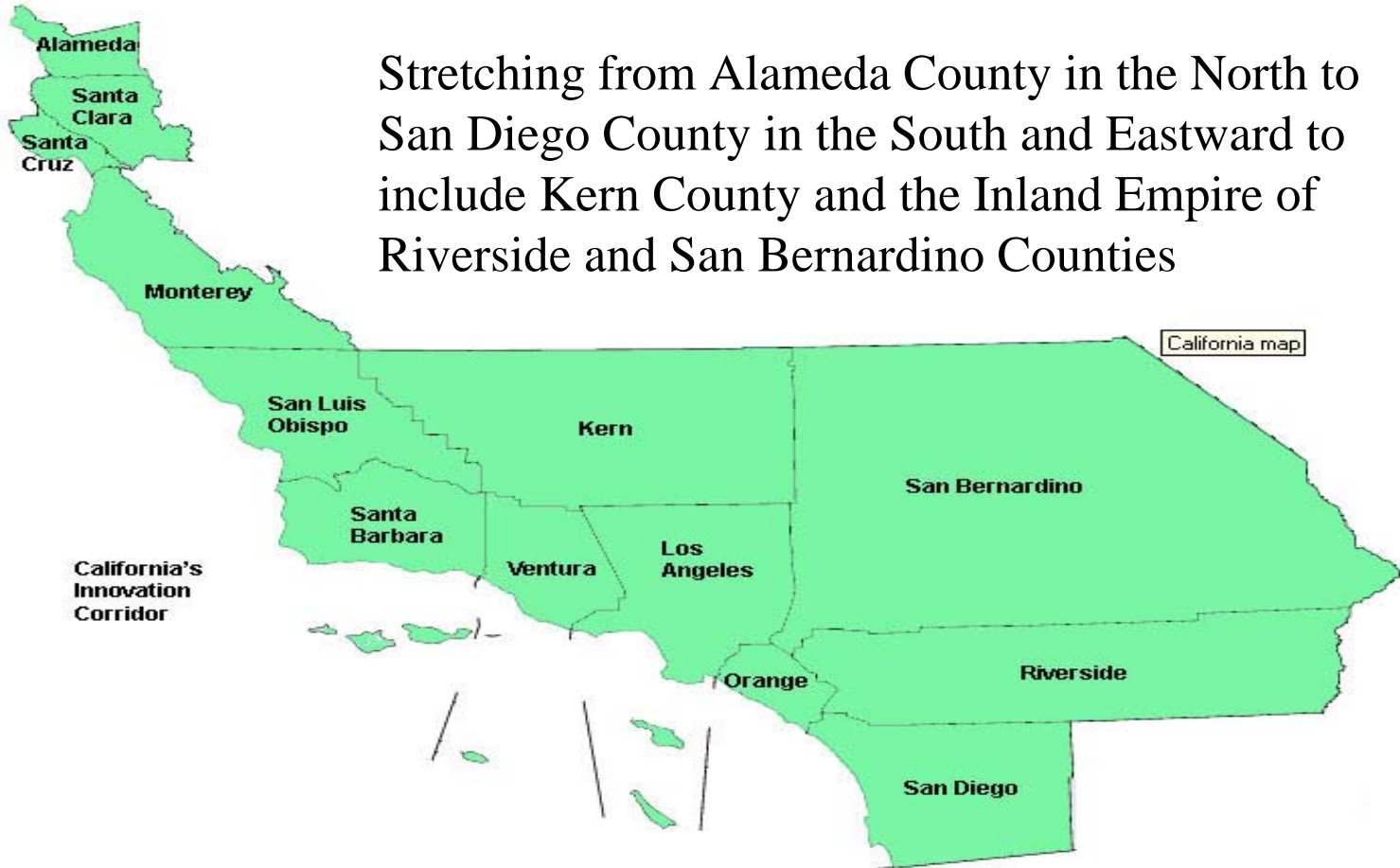
**WIRED** (awards to 13 regions nationwide) is the U.S. Department of Labor (DOL) response to the President's American Competitiveness Initiative. Studies supporting WIRED:

- ❑ *Innovate American (2005)*
- ❑ *Innovation-Entrepreneurship NEXUS (2005)*
- ❑ *The World is Flat (2005, Thomas Friedman)*
- ❑ *Rising Above the Gathering Storm (2005)*
- ❑ *Manufacturing in America (2004)*

*The world economy as we have known it has changed and we need to adapt quickly to maintain our competitiveness into the future or risk the wealth generation capacity and national security.*



# California Innovation Corridor Established through WIRED Grant



Stretching from Alameda County in the North to San Diego County in the South and Eastward to include Kern County and the Inland Empire of Riverside and San Bernardino Counties



# California Innovation Corridor WIRED Grant Fact Sheet

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- ❑ U.S. Dept. of Labor award February, 2006
- ❑ Economic Region:
  - The California Innovation Corridor (the Corridor)
- ❑ Program Lead:
  - The California Space Authority (CSA)
- ❑ State of California Role
  - Technical support, fiscal agent, other support
- ❑ Partners
  - 13 county economic region, 60+ partners
  - 42 funded contract partners
  - 100+ unfunded collaborators to date



# California Innovation Corridor WIRED Initiative

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***“Workforce Transformation: Innovation Support, Industrial Rejuvenation, Talent***  
**Three tracks of activity:**

- Innovation and Entrepreneurial Support
- Industrial Rejuvenation (Supply Chain Competitiveness)
- Talent Development

*25 projects in all*



# Innovation and Entrepreneurial Support

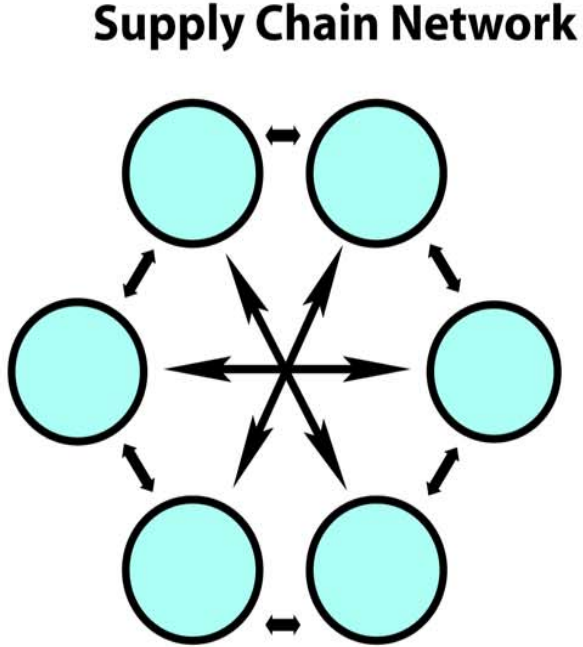
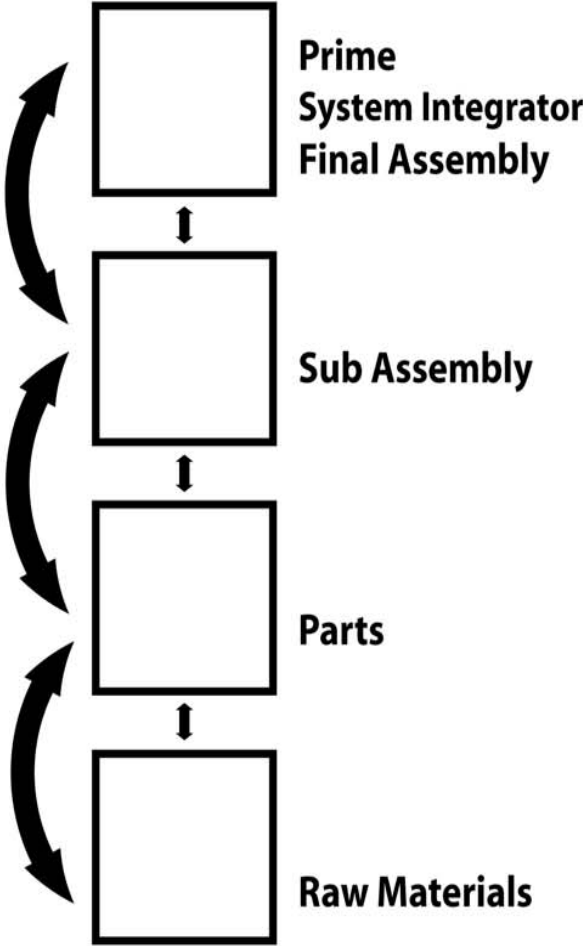
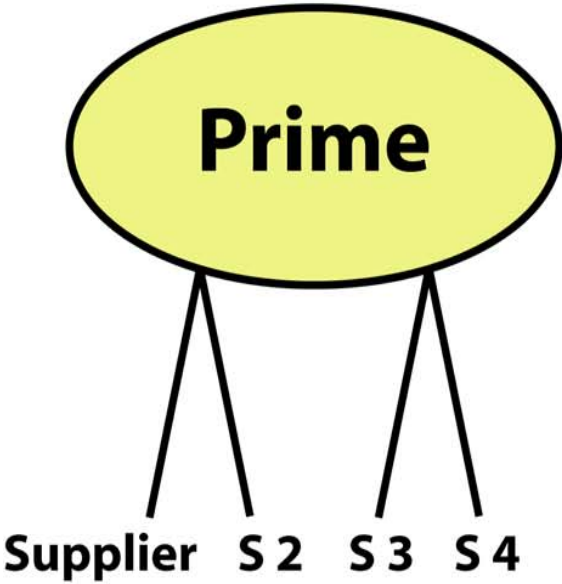
- ❑ Economic Development Model/Innovation Toolkit
- ❑ Entrepreneurial Support to move innovative technology to commercialization
- ❑ Innovation Asset Inventory
  - Research Labs/Companies, Military Installations, Universities
  - CA Innovation Corridor portal on ECEDC's Connectory
- ❑ Stanford/UCR – Engineering and business schools researching innovation and commercialization models
- ❑ Developing Military Launch Opportunities for Student Payloads



# Why Supply Chain Transformation?

- **History: CSA Collaborative Objectives – determined need**
  - “Smart Supplier” Training and Capacity Building
  - Common Learning Outcomes
- **WIRED Corridor Program: Smart Supplier Initiative**
  - Survey of Current State – 1000 suppliers – EDOs can help
  - Define Maturity/Capabilities model
    - Define core common requirements, common language
    - Align survey with assessment content
    - Determine gaps, identify resources
  - Outreach to 3000 suppliers
    - Annual Forum – at top, mid tiers, training providers venues; incremental, modular approach

# SUPPLY EVOLUTION





# Talent Development

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Accelerate development of highly skilled 21<sup>st</sup> Century talent pool by creating pilot projects and activities capable of supporting a continuum of math, science and engineering education (K-U) and lifelong learning relevant to the 21<sup>st</sup> Century technical worker

## Strategy

Integrate consideration of current and future industry enterprise needs into workforce and educational planning and policymaking.

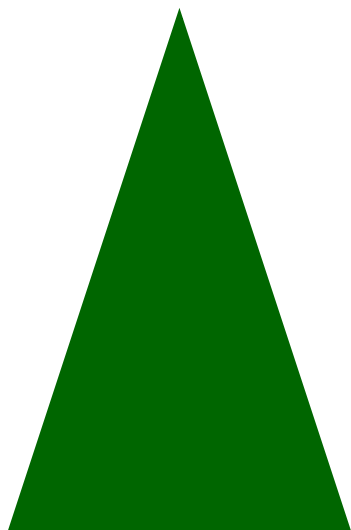
14 of the 25 WIRED projects focus on Talent Development



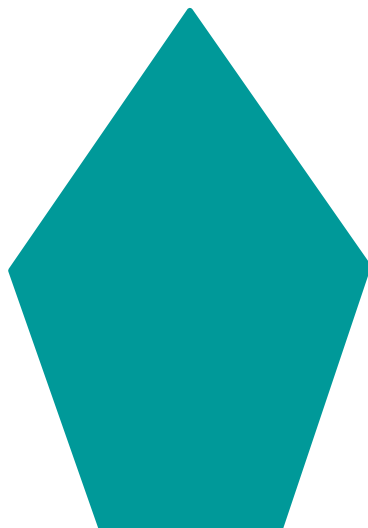
# The World of Work has Changed

from Rick Stephens, VP HR Boeing

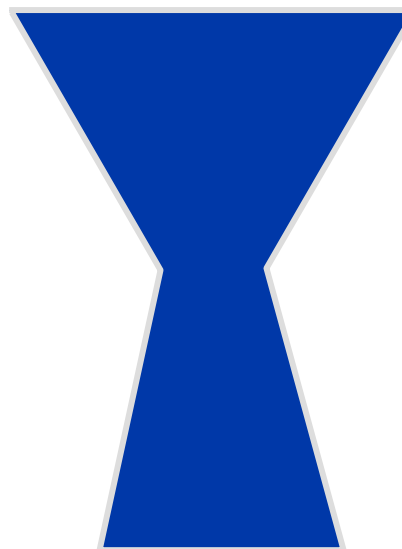
1970's



1990's



2010



High Skill

Semi Skill

Low Skill



# Talent Development

- ❑ STEM Collaborative Action Plan (STEMCAP)
  - Increased Number of STEM Students
  - Increased Number of Qualified STEM Teachers
  - Smoother Articulation across Systems
- ❑ Experiential Learning/Mentoring Opportunities
- ❑ “Learning Collaboratory” for WIBs, to engage and benefit from all 25 projects
- ❑ Current and Future Labor Needs Assessments and Strategies
- ❑ Accelerated Credentialing of STEM Teachers
- ❑ Community College Mechatronics and Recruitment of Students into Technical Certification Programs



# Overarching WIRED Intent

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“Optimize the Corridor for innovation in 21<sup>st</sup> Century workforce competitiveness”

**Questions?**

**Judy Turner**

**Director, Programs and Partnerships**

**California Space Authority**

**(626) 440-0565 x107**

**Judy.Turner@CaliforniaSpaceAuthority.org**

[www.californiaspaceauthority.org/html/wired](http://www.californiaspaceauthority.org/html/wired)





# BASIC

## BAY AREA SCIENCE AND INNOVATION CONSORTIUM

*Advancing the San Francisco Bay Area's Leadership in  
Science,  
Technology  
and Innovation*

### ***WIRED 1.3 Innovation Asset Inventory***



# BASIC

## WIRED Section 1.3: Goal

- ❑ Develop and sustain an entrepreneurship culture in the California Innovation Corridor through the identification, characterization and consolidation of government, university and private sector innovation assets and capabilities.
- ❑ Thereby providing a resource for the acceleration of technology sharing and adoption for the formation of both new businesses and the growth of existing enterprises.



# BASIC

## WIRED Section 1.3: Why Needed

- ❑ Today, most start-ups and new product developments rely on a combination of multiple technological innovations rather than a single discipline technology
- ❑ A large reserve of innovations in federal labs, universities and private sector labs is difficult to access by start-ups and small/medium enterprises
- ❑ Today, firms considering relocation to a California region have no way of assessing the richness of the innovation assets available to them in that region
- ❑ The capability of accessing innovation asset information will lead to a strong and vigorous innovation eco-system that will keep California at the leading edge of innovative business



# BASIC

## WIRED Section 1.3: Approach Participant Partners:

- Antelope Valley Board of Trade
- Bay Area Science and Innovation Consortium
- California Space Authority
- East County (San Diego) Economic Development Council
- Greater Antelope Valley Economic Alliance
- Kern County Economic Development Corporation
- Los Angeles County Economic Development Corporation
- City of Lompoc Economic Development Office
- Orange County Workforce Investment Board
- South Bay Economic Development Partnership
- Santa Maria California Space Alliance
- San Luis Obispo Economic Vitality Corporation
- Ventura County Economic Development Association



# BASIC

## WIRED Section 1.3: Approach

### Definition of Innovation Asset:

*Any asset - whether institution, program or facility - that develops and advances technologies and capabilities that have the potential to create new companies, high-paying jobs or expand the overall productive capacity and competitiveness of the economy.*

### Assets information should facilitate any or all of the following:

- Collaboration to realize the technological potential of an asset
- Collaboration or support to maximize the positive economic outcomes of an asset
- Acceleration of the commercialization of innovative technologies
- Identification of needs and opportunities for supporting further cycles of innovation
- Funding for any of the above, including venture capital, angel or equity investment, grants



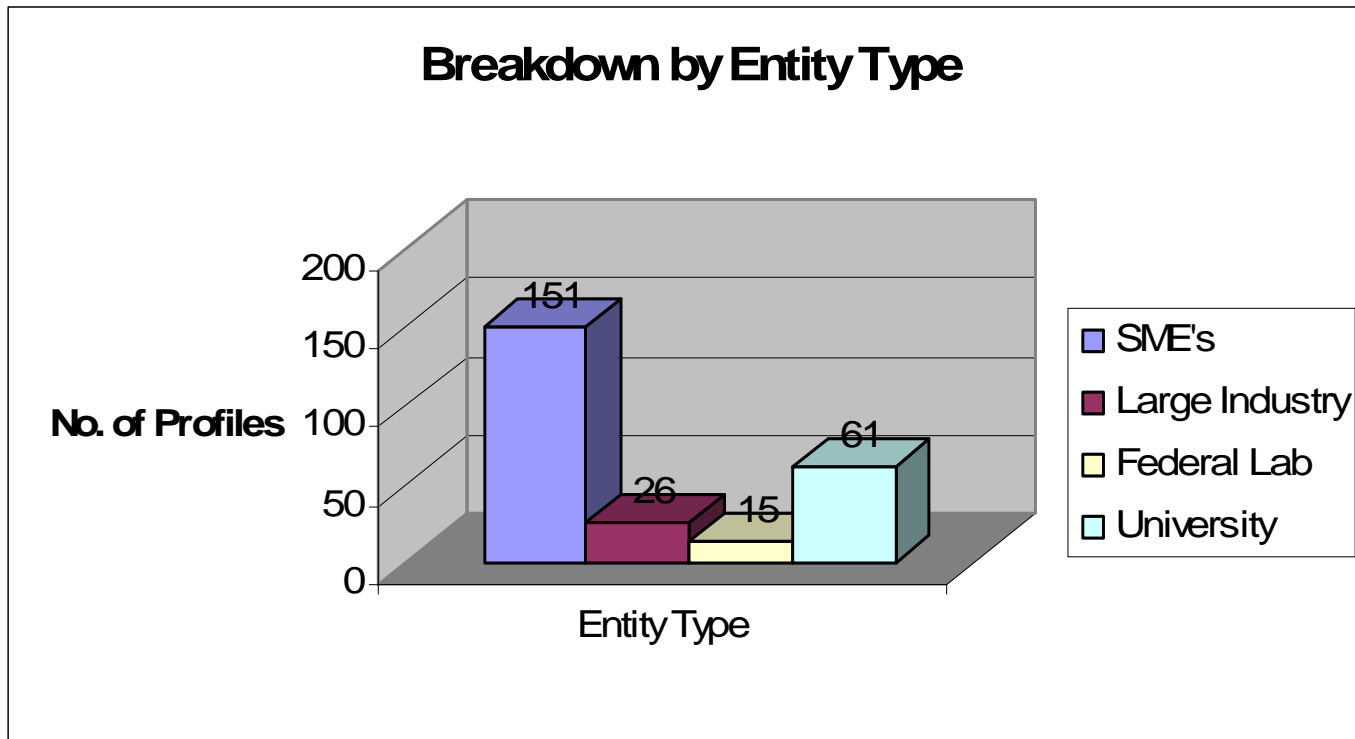
# BASIC

## WIRED Section 1.3: Approach

- ❑ Easy to use, two page, “fill in the blanks” induction format developed for Federal Labs, Universities & Industry – called “Profile Sheets”
- ❑ Partners used public information (Internet) to pre-populate Profile Sheets, then followed up with email, and phone to verify/improve content
- ❑ Lead Partner (BASIC) reviewed all profiles for uniformity and overall quality

## WIRED Section 1.3: Results

- 253 innovation assets successfully profiled





# BASIC

## WIRED Section 1.3: Lessons Learned

- **Initial data collection more difficult than expected**
  - *Becomes easier with practice*
- **Some profiled entities skeptical about value of data**
  - *Recognition of value will improve as size and use grow*
- **Wide difference in nature of innovation from urban to rural parts of the California Innovation Corridor**
  - *Profiling should be tuned to the local region for maximum utility*
- **Some profiled entities reluctant to “own” and maintain data**
  - *Additional work required, reluctance will diminish as value grows*



# BASIC

## WIRED Section 1.3: Opportunities/Next Steps

- The Economic Development community of California has a new tool to assist in creating regional business start-ups and expanding existing businesses as well as to attract other business to move to California
- State-wide adoption and use of the innovation asset inventory by the Economic Development community will assure California's leadership in the new innovation based economy.
- Such wide adoption and use would best be accomplished through state's regional marketing organizations or similar regionally oriented entities.



# BASIC

## **WIRED Section 1.3: Concluding Remarks**

### **WIRED Section 1.3 is successfully completed**

- **The Innovation Asset Inventory is a tool that benefits**
  - Economic Development professionals,
  - Entrepreneurs,
  - Inventors and
  - Investors
- **Widespread use and expansion of its content will enhance the value of the Innovation Asset Inventory**



# BASIC

## Contact Info:

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*email: [crcastellano@sbcglobal.net](mailto:crcastellano@sbcglobal.net)*

*Phone: 408 253-4162 (home office)*

*[www.bayeconfor.org/basic](http://www.bayeconfor.org/basic)*





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# Project 1.4 Entrepreneur & Innovation Support

California Tech 100

April 24 & 25, 2007

***Featuring the California Tech 100  
Innovation Awards***





# Goals

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1. Kick-off event for recognizing Innovation in California and the California Innovation Corridor projects supporting innovation
2. Create public awareness and media exposure – *California's culture for innovation is its competitive advantage in a global market*
3. Nominate and select the California Innovation Corridor's "Innovation All-Stars"
4. Nominate 40+ innovation-based entrepreneurial ventures (that may include SBIR Phase II candidates)
5. Conduct entrepreneurial training, exposure to 50+ Angel and Venture Capital investors
6. Benchmark economic activity, ongoing business services, and training over the three-year period. Document process.
7. Coordinate and leverage outreach with the Economic Development Model (1.1).



# California Tech 100

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## Day 1 – Entrepreneur & Angel/VC Investors

- ❑ Power of Angel Investing
- ❑ Technology Entrepreneur Innovation Boot Camps
- ❑ Opening Reception
- ❑ Ballroom Blitz

## Day 2 – Innovation Showcase

- ❑ Maintaining California's Competitive Edge in a Global Economy
- ❑ Innovation Showcase
- ❑ Innovation Awards





# Innovation-oriented Public Policy Framework

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1. Align incentive behind innovation economy fundamentals
2. Co-invest in an Innovation Infrastructure
3. Co-invest in Skills of the Workforce
4. Cultivate Entrepreneurship
5. Support Industry Clusters
6. Reduce Business Costs without reducing standard of living
7. Boost Productivity
8. Reorganize Economic Development Efforts
9. Enlist Federal Help



# Keynote Speaker

## Ira Ehrenpreis,

Technology Partners  
Venture Fund

- Manages more than \$400 million of investment
- Approximately half of its capital invested into Cleantech

Message: “Green Tide is Rising”

### Cleantech: The Coming-of-Age

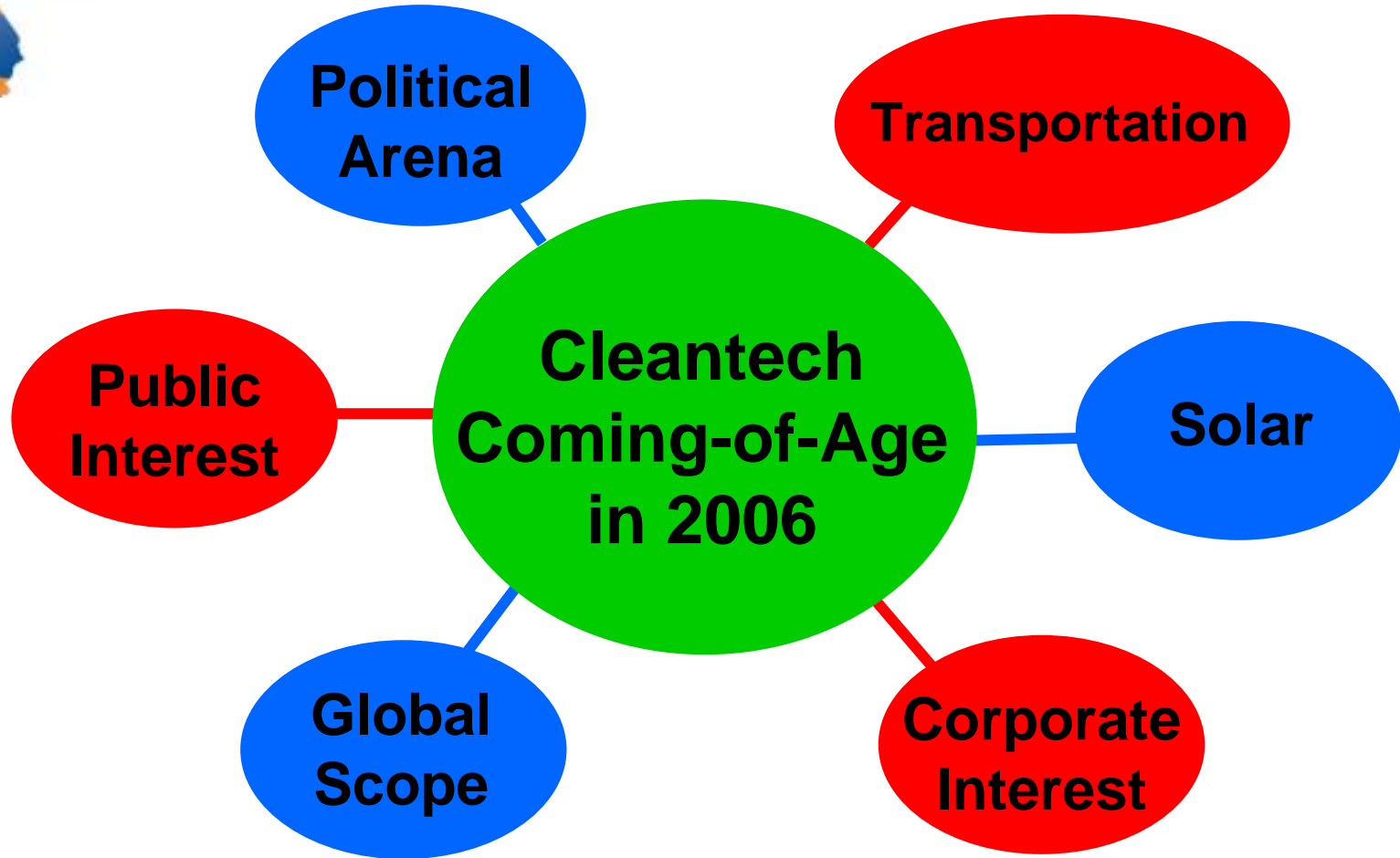
Ira Ehrenpreis  
Technology Partners

TECHNOLOGY  
PARTNERS

1



# CleanTech Overview





# Keynote Speaker

**Randy Churchill,**  
Director Business  
Development  
***Pricewaterhouse  
Coopers  
Technology  
Practice***



PricewaterhouseCoopers  
Thomson Reuters Group  
National Venture Capital Association  
**MoneyTree™**  
survey  
**Shaking the  
MoneyTree**  
2006  
Year-End Results

# Q4

PRICEWATERHOUSECOOPERS 





# 2006 Investing Review

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- National VC investing continued at a healthy pace
  - 12% increase over '05, '07 robust
- “Innovation Corridor” leads the way
  - \$12 Billion in California’s Innovation Corridor, over ½ the national total investments
- Silicon Valley remains strong
  - \$9.2 B, 1,108 Deals
- SoCal VC investing increased over 20% - **surpassed New England for the first time**
- **Growth & Top Industries**
  - Software - Biotech - Medical Device
  - Clean Tech - Digital Media and Internet - Electronics



# California Innovation Awards

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- ❑ Over 300 nominations
- ❑ 75 All Stars screened & selected
- ❑ 15 Innovation Awards recognizing the company's innovation leadership and contribution to the California Economy
  - Presented to CEO's from companies throughout Corridor by the Mark Mosher & Duane Roth, California Commission for Jobs & Economic Growth
  - Sponsors:
    - ❑ Labor & Workforce Development
    - ❑ Business Transportation & Housing



# Why is this Important to Economic Development?

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“It is not the strongest of the species that survive,  
Nor the most intelligent,  
But the ones most responsive to change.”

- Charles Darwin

[www.InnovativeCalifornia.net](http://www.InnovativeCalifornia.net)





# California Innovation Corridor (CIC) Portal

Leveraging Connectory.com Platform  
for  
Innovation Asset Mapping





# What is Connectory.com®?

- Regional, Internet Buyer-Supplier Network
  - Started in San Diego's East County
  - Expanded to San Diego-Imperial-Baja region
  - Began statewide expansion in Mid-2002
    - Initial focus on aerospace/space sector in alliance with California Space Authority
  - Tapped by Defense Department to identify sources tech, products
  - Selected as "virtual platform" for CA WIRED Initiative
- B2B tool -- Unique way for companies to connect
- Proven business development tool
  - Promotes companies; fosters business interaction
  - All at NO COST to company
  - Grows through portals, partnerships



# What sets Connectory.com® apart?

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- ❑ Level of detail in company profiles
  - Products/Technologies/Services
  - Core Capabilities/Competencies & Capacities
  - Contact/Demographic Info
    - ❑ Company names, locations, key personnel, SIC/NAICS codes, web site, email links, size and revenue ranges
- ❑ Cuts across all industry/technology clusters at every level of supply chain
- ❑ Regional in scope, global in reach
- ❑ Includes automated Update functionality



# Connectory.com® Industry/Technology Categories

Across all Industry Clusters

At every level of Supply Chain

Manufacturing

Product

Contract/Build to  
Spec

Industrial Suppliers

Technical Services

Technology/R&D

Construction &  
Trades

Raw Materials

Agribusiness

Mining/Quarrying



# Connectory as CIC Virtual Platform: Why?

- ❑ Infrastructure in place to input, search, display, sort, maintain company profiles
- ❑ Built on Economic Development premise that underlies Asset Mapping
  - Know what assets you have; how they relate, before you act
  - Profiles built as modules of discreet capabilities information
  - Searchable across full content as well as field specific
- ❑ Segregate Innovation Assets from Big Connectory
  - Still move between CIC Portal and Big C
  - Allow BIG C to be source of new Innovation Assets



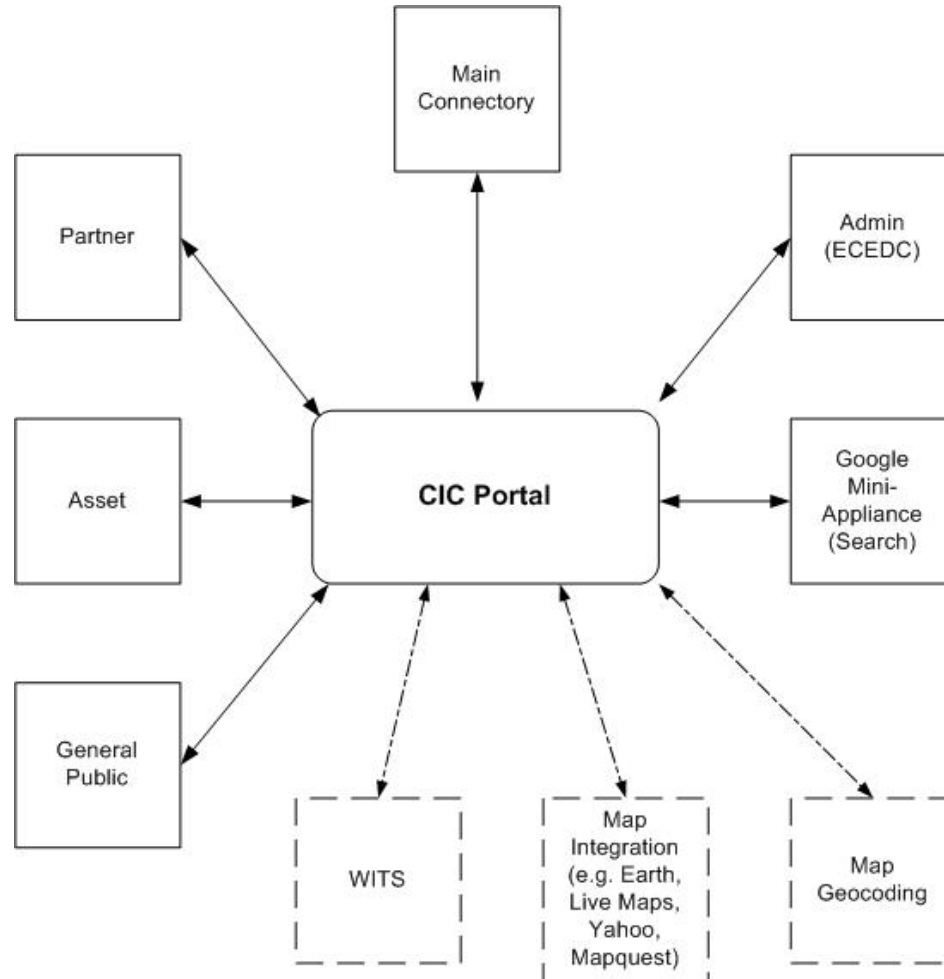
# CIC Portal: What's Different from Big C?

- ❑ Accommodate Non-Company Asset Profiles
  - Design to accommodate Federal Labs, University and Private Research Institutes/Centers
  - Input, Display, Search
- ❑ Make Innovation Determination: Yes/No?
  - Non-Company Assets, by Inclusion
  - Companies, by Determination
- ❑ Permit Partners Admin Capabilities for Assets within their part of CIC (Limited)
- ❑ Add “Protected” Sections to Foster Partner/Asset Relationships
- ❑ Include Static, Dynamic Reports



# CIC Portal – Innovation Test

- ❑ CIC Innovation Portal – Inclusion Criteria
- ❑ Is the Asset involved in:
  - Development, commercialization, fielding of New Technology?
  - Application of Existing Technology in Innovative Way?
  - Diffusion of Innovative Technology/Service/Process throughout an Industry/Industries
- ❑ Currently a Toggle Switch in Partner/Admin Area
- ❑ If “Innovation Algorithm” Emerges, Can Partially Automate



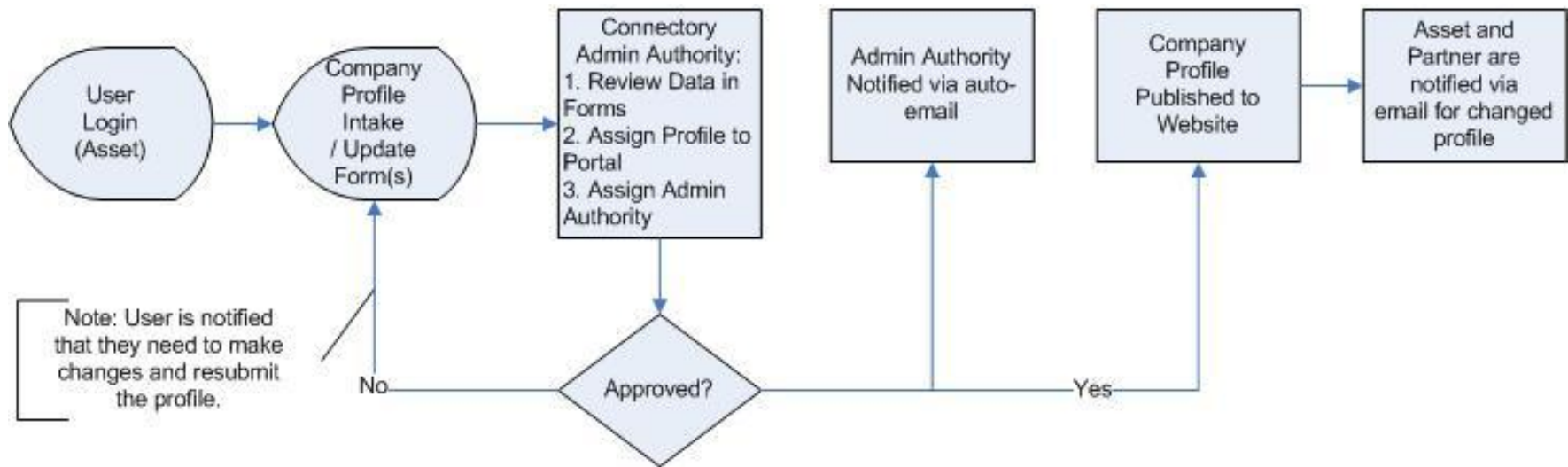


# CIC Portal – Public Features

- ❑ Connectory Framework – access all BIG C Features
- ❑ Asset Information – both Public and Protected
  - Public Searches
  - Protected Content for Partner/Asset Only
- ❑ Connectory Sub-domains used as Portal Addresses
- ❑ Main Portal Page –Intro to Portal with CIC logo
- ❑ Search Page – Search assets within the Portal
- ❑ Links Page – Useful Links and Resources
  - CIC Partner/Project Site(s)
  - Other Innovation Support Resources in Corridor
  - WITS Summary and Links (maybe)
- ❑ Help – Connectory Help Files via Main Navigation Bar
- ❑ Geocoding – Mapped Locations

# Public Process – Asset Profiles

## 1. Connectory Public Process – Asset Profiles





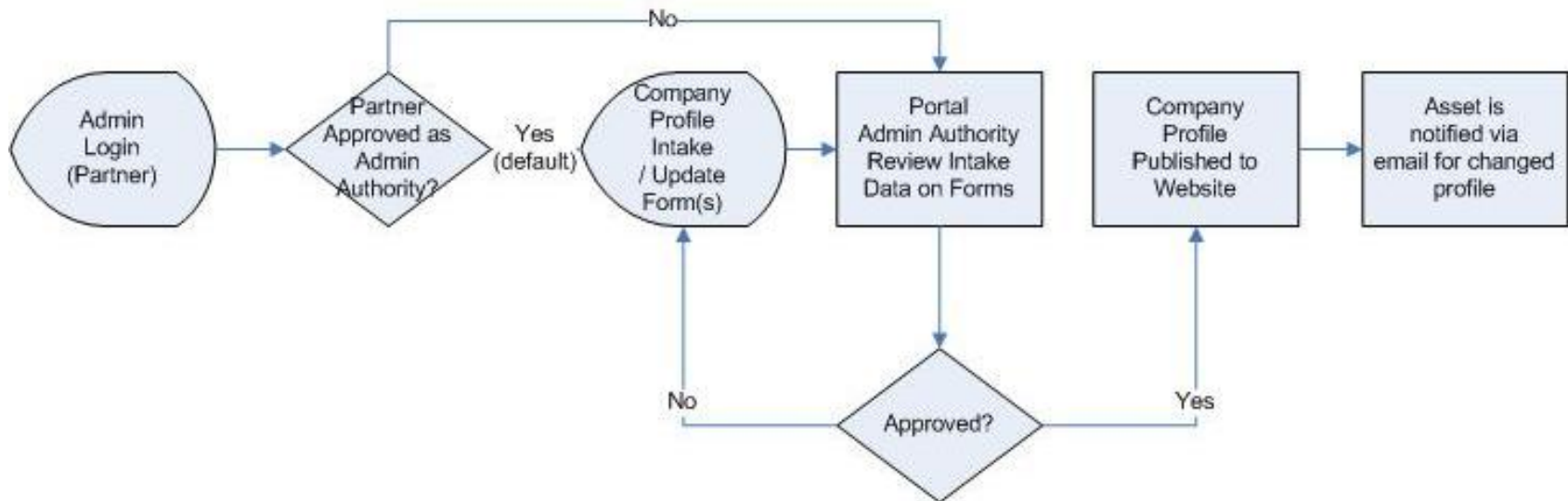
# CIC Portal – Partner Admin Features

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- ❑ Profile Control Switch: Greater/Lesser Partner Control
  - Asset Profiles
  - Partner Profiles
  - Batch Email
- ❑ Partner CRM Feature (Admin Controlled)
- ❑ Innovative Asset Display
  - Innovation companies display separately in Portal
  - Non Company Assets display ONLY in Portal
- ❑ Asset information – protected / proprietary
- ❑ Reports -- 1 Dynamic (ad hoc), 2 Static (predefined)
- ❑ Help – context sensitive help links

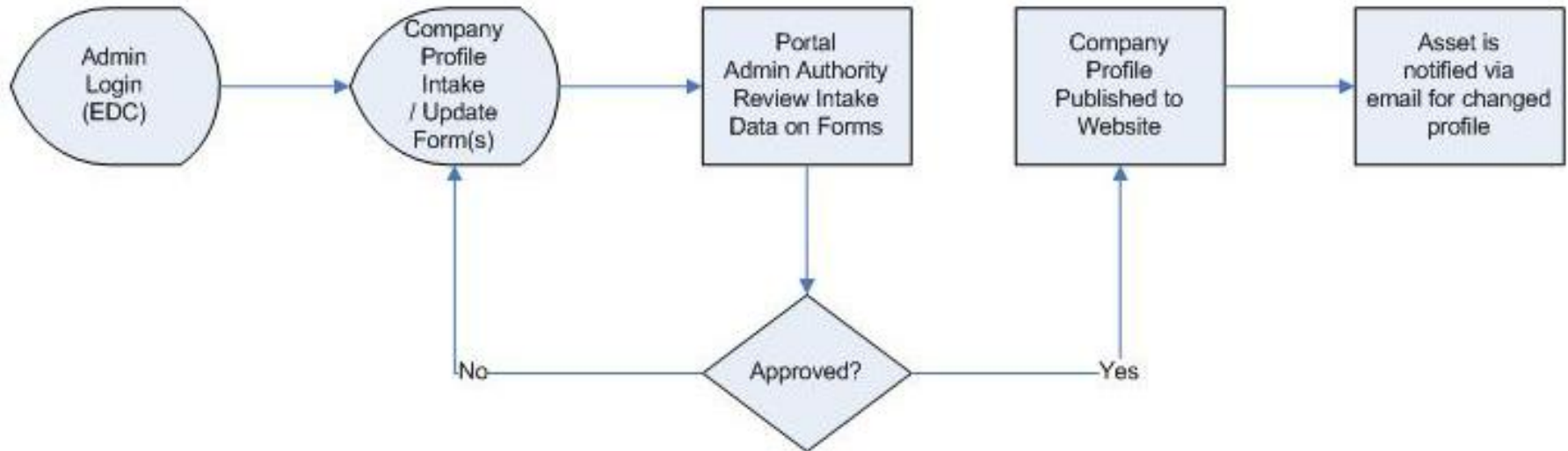
# Partner Process – Asset Profiles

## 2. Partner Portal Process – Asset Profiles



# Connectory CIC Portal Oversight

## 3. EDC Connectory / Portal Process – Asset Profiles





When every hour counts,  
count on Comerica Bank.

Search for products/services/capabilities:

Search

Portals: [San Diego](#) | [San Bernardino](#) | [Home \(CA\)](#) | [CIC](#)

Portal: CIC

[Login](#) | [Create Account](#)

[Contact Us](#)

... Linking California Industry to the World!

[Home](#)

[Add Your Company](#)

[Search](#)

[Resources](#)

[MAPS](#)

[Help](#)

CIC

Sponsor



Connectory Stats

There are currently  
**863**  
companies  
profiled on the  
connectory from  
**San Diego's  
East County!**

### CIC Portal



Welcome to the CIC Portal@Connectory.com.

The California Innovation Corridor (CIC) is a region which evolved as a result of a grant opportunity offered by the U.S. Department of Labor in 2005. A community of regions comprised of partners in 13 counties that range from Alameda County in the north to San Diego south, flowing east in southern California to encompass the Antelope Valley and the Inland Empire, that came together to respond to the grant opportunity by addressing common regional needs in three strategic areas: 1) Innovation/Entrepreneurial Support, 2) Industrial Rejuvenation, and 3) Talent Development.

The California Innovation Corridor boasts an \$XB economy providing X% of California jobs. It is a major center of U.S. economic and technological prowess and serves as a nexus for the nation's intellectual capital, with world-class research and development and innovation talent within its high tech industries, federal labs and research centers and world-class universities.

The CIC Portal will allow focused searches on profiles of innovation assets with the CIC region to include innovative companies, universities and their associated research centers/institutes, and federal laboratories and federally funded research and development centers (FFRDC).

[Add Your Company](#)



Don't be left out. Add your company profile to our fast-growing database by using the on-line application.

[Update Your Profile](#)



Authenticated Users Only

### Connectory Search

on **San Diego's East County**

The **Connectory** was born in San Diego's East County, & will continue to support East County Companies in any way possible. To focus your

Internet





## CIC Portal: Supports EDO Functions

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- Company Contact Outreach/Management
- Site Surveys/Trade Shows
- Business Attraction, Retention & Expansion
- Trade Show Support
- Company/Community Inquiries
- Cluster/Subsector/Gap Analysis
- Workforce Development
- Consortium/Alliance Development
- Strategic & Program Planning
- Inclusion of Underserved Areas

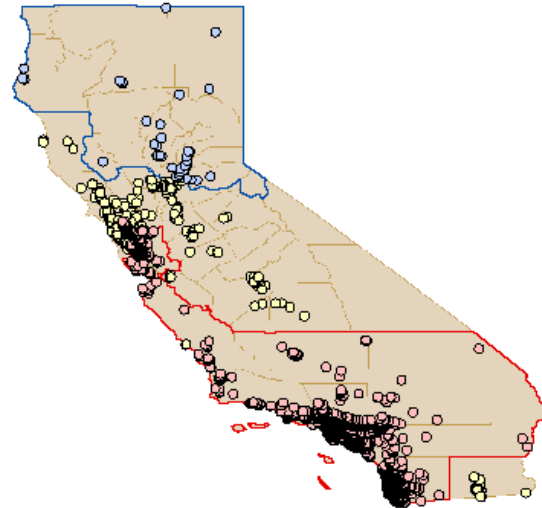
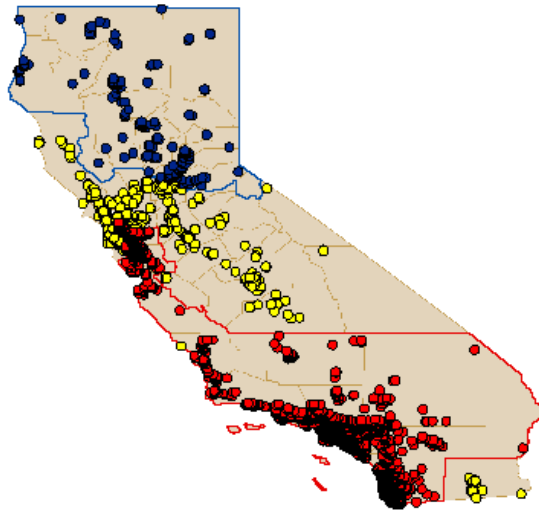




# Connectory Population Growth Pre/Post WIRED -- Year 1

10,913 Companies, March 2007

6,878 Companies, May 2006



Companies – ONLY  
Does not include Labs, Universities



Legend

- CA Innovation Corridor (7,946)
- NorCal Virtual Region (218)
- Other (2749)
- NorCal Virtual Region Boundary
- CA Innovation Corridor Boundary
- California Counties
- CA Innovation Corridor (5,363)
- NorCal Virtual Region (46)
- Other (1470)



# CIC Portal -- Next Steps

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- ❑ Complete V 1.0 of CIC Portal (Summer 2007)
- ❑ Populate CIC Portal with Asset Profiles Collected during WIRED/CIC
- ❑ Add Companies Profiles from Big C that meet Innovation Test
- ❑ Secure Beta Test Partners from CIC/WIRED and other CA EDOs
- ❑ Launch CIC Portal (Fall 2007)
- ❑ Connectory-CIC Portal – the Corridor Tour
- ❑ Demo to partners how CIC Portal/Asset Inventories can support their work





## Project 1.1

# *Economic Development Model Toolkit*



# Project 1.1

## Economic Development Model Toolkit

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- An Economic Development Model that can be used as a resource or guidebook by regions in the CIC and beyond to increase economic competitiveness - User oriented
  - Case studies
    - Global
    - State / Regional
  - Gaps analysis



# Project 1.1

## Economic Development Model Toolkit

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- Economic Development Model - Case studies
  - New Economy Strategies (NES)
    - Brazil
    - Finland
    - Israel
    - Korea
    - Singapore
    - Boston
    - US
    - California / Regions
  - Gaps Analysis

# Overview of Israel's Innovation Infrastructure

## Basic Statistics

**Population: 6.3m**

**Unemployment Rate: 8.3%**

**Per Capita GDP: \$26,200 (2006)**

**Primary Business Locations: Greater Tel Aviv, Jerusalem, Haifa, Beersheba**

## Key Assets

**Innovation Base:** Top research universities include Technion-the Israel Institute of Technology, Hebrew University, Tel Aviv University and the Weizman Institute of Science, which only provides graduate education. Extensive research & development is also performed by private firms and the military. Several American firms such as IBM and Google have R&D Centers in Israel. Intel, which has operated in Israel since 1974 has five facilities that include design and development, fabrication, and sales and marketing.

**Industry Base:** Strong industry clusters in Bioscience, Defense and IT. Firms include: Teva, Compugen, Israel Aerospace Industries, Elbit, Amdocs and Check Point Software.

**Workforce:** Israel has one of the most highly educated workforces in the world. Over 24% of the workforce has a first university degree, with an additional 12% holding an advanced degree. Additionally, 16% of the workforce has attained some post-high school education.

**Global Recognition:** Since independence in 1948 and increasingly over the last 20 years, Israel has developed global recognition as a leader in many areas of technology. Sectors that have displayed particular strength include Bioscience, Defense, Communications and IT.

## Successes in Innovation

Innovation has been a hallmark of the State of Israel from its establishment in 1948. In the first several decades of Israel's existence many of the innovations were agricultural technologies such as drip irrigation, which facilitated development of a robust and now-specialized agricultural sector. Since then, Israel has become an innovation leader in multiple sectors, many of which are also important to the economy of California.

Some well-known metrics speak to the strength of Israel's innovation economy: Second in the world in R&D spending as a percentage of GDP (3.6%) (2004); home to the third largest number of NASDAQ listed companies outside of the U.S. and Canada; and one of the largest recipients of venture capital both in absolute and per capita terms.

### Investment in R&D

Israel's annual R&D investment is estimated to be close to \$5B per year. While the government and military have traditionally played a primary role in research, 69% of Israel's R&D funding is now provided by industry, which is in line with OECD countries such as the United States and Switzerland.

### Challenges to Continued Innovation

➤**Political Risk:** The economy of Israel has successfully grown over the last 59 years despite regular conflicts with its neighbors. Regional trade has been limited and the United States alone counts for almost 40% of total foreign trade.

## Example Economic Development Strategies / Programs

**Youzma Program** This was a government initiative that facilitated the successful development of a domestic venture capital industry in Israel. In 1993, \$100 million was allocated to establish a fund of funds structure in conjunction with experienced foreign investors. Each fund was capitalized with \$20-\$25 million and divided 60%/40% between the Israeli government and foreign investors. Of 15 direct investments there were 9 successful exits - an enviable ratio. This program demonstrated the viability of VC in Israel and helped lead to the \$10B currently under management.

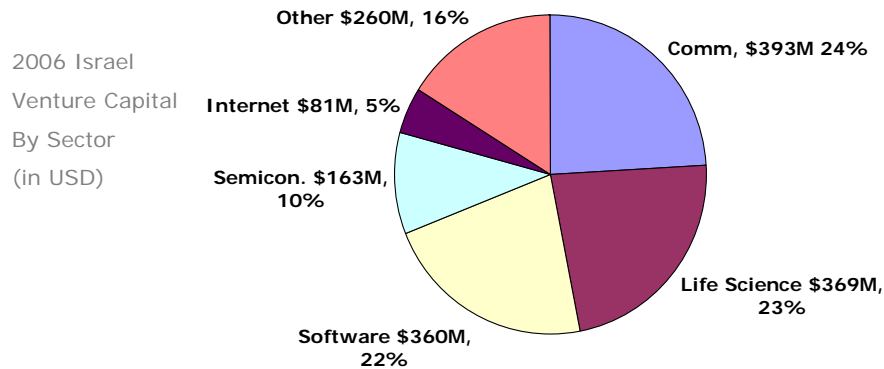
**Tnufa:** This program assists start-up companies by evaluating the technology and market potential of a discovery or novel idea and assisting in the preparation of a business plan and patent proposal.

The program also assists in the construction of a prototypes as needed and establishing contact with industry. In addition to providing support of up to \$50,000 for each project, efforts are made to attract additional investors.

**Nofar:** This program looks to close the gap between basic and applied research, something especially relevant to the biotechnology industry. Grants of up to \$95,000 are given to biotechnology projects.

**Heznek:** This program links government investment in start-ups with external investors in exchange for non-voting rights shares. The government of Israel investment may not exceed NIS 5 million (\$1.2 million) over two years and 50% of the start-ups working program. The investor has the option of buying-out the government's position at any time in the first seven years.

# The Relevance of Israel's Innovation Infrastructure to the California Innovation Corridor



## Israeli Business Clusters relevant to the California Innovation Corridor:

### ➤ Biotech/Pharmaceuticals

Several successful therapies have been developed from research performed at Israeli universities. The following drugs were developed through Yeda Research and Development Company, the commercial arm of the Weitzman Institute of Science. Their success has increased both the size of the life sciences industry in Israel and links to firms in other leading markets such as the U.S. and Europe.

**Copaxone:** Copaxone was the first innovative drug to be developed in Israel and to receive FDA approval. It is a unique multiple sclerosis immunomodulator and is the first and only non-interferon agent for the treatment of relapsing-remitting multiple sclerosis. Copaxone is licensed to Teva Pharmaceuticals Ltd. To date this drug has had sales of over \$1.2 billion.

**Frone:** (Native interferon beta), is licensed to Inter-Lab Ltd., a Serano company, and is used as an antiviral and anti-cancer drug, and had sales that exceeded 40\$ million. It was replaced by Rebif.

**Rebif** (Recombinant interferon beta) is identical to the native molecule and is registered for the treatment of multiple sclerosis and several viral diseases. It is licensed to Inter-Lab Ltd., a Serano company. To date this drug has had sales of over \$1.3 billion.

➤ **Defense** Like California, Israel has a strong defense industry. It is dominated by a few firms, including Israel Aerospace Industries (IAI). While the firm is owned by the state, it has established itself as a leader in several areas including electronics and business jets, in addition to products for both the Israeli military and for export.

### ➤ Venture Capital & Entrepreneurship

Israel boasts a very strong venture capital community, which, like India, has extensive links to the United States. Israeli venture funds have attracted nearly \$10 billion in investment over the last 10 years. While investment peaked at \$2.5 billion in 2000, there was nearly \$500 million raised by Israeli VC firms in 2006.

These numbers also do not account for the total investment in Israeli companies by U.S. and European venture capital firms. More than half of the \$1.6 billion invested in Israeli "high-tech firms" (as defined by IVCRC) was provided by foreign investors.

Israel also looks to have a strong pipeline of start-ups as \$138 million of funding was provided to Seed Stage companies. This accounts for 8.5% of total venture capital funding in 2006. The other stages are as follows: Early Stage: 30.5%, Mid-Stage: 42%, Late Stage: 19%.

It is estimated that there are now 80 Israeli VC funds with over \$10 billion under management. Notable Israeli VC firms include, Gemini Pitango, Veritas and Vertex (51% Singapore-owned). Additionally, several US firms maintain operations in Israel, including Apax Partners and Sequoia Capital, two of the largest US firms. California has played a special role in the development of Israel's high-tech sector with much of the FDI, VC and human talent coming from the state. California firms and policymakers should continue to build on these relationships in order to maintain and extend its access to Israeli innovation.

# Policy Comparisons

Selected Metrics	Leading Industries	Start of High Tech Revolution	Primary Technology Development Catalysts	Primary Economic Development Agency	Website	Sources
<b>Boston</b>	Biotech, Defense, Comm.	1970s	Universities, Defense	Massachusetts Office of Economic Development	<a href="http://www.mass.gov">www.mass.gov</a>	
<b>India</b>	IT (especially ITES-BPO), Biotechnology, Telecoms	1992	Foreign direct investment	Ministry of Science and Technology	<a href="http://www.dst.gov.in">www.dst.gov.in</a>	Ministry of External Affairs, ITP Division
<b>Israel</b>	Biotech, Defense, Communications	1970s	Foreign venture investment, Defense	Office of the Chief Scientist	<a href="http://www.moit.gov.il">www.moit.gov.il</a>	Invest in Israel
<b>Singapore</b>	Financial Services, Manufacturing, Life Sciences, Electronics	Late 1970s	State sponsorship, Foreign direct investment	Agency for Science, Technology and Research (A*STAR)	<a href="http://www.mti.gov.sg">www.mti.gov.sg</a>	Science & Technology Plan, 2006 (Ministry of Science and Trade)
<b>Finland</b>	Electronics, Telecom, IT	Early 1990s	Government technology standards, Corporate leadership	Tekes (Agency for Technology and Innovation)	<a href="http://www.tekes.fi">www.tekes.fi</a>	ICT Cluster Review, 2005 (Invest in Finland)
<b>Brazil</b>		1970s		Financing Agency for Studies and Projects (FINEP)	<a href="http://www.finep.gov.br/">www.finep.gov.br/</a>	European Trend Chart on Innovation, 2005 (EU)
<b>Korea</b>		1980s		Ministry of Science and Technology	<a href="http://www.most.go.kr">www.most.go.kr</a>	
<b>California</b>	IT, Electronics, Networking, Defense, Biotech	Early 1960s	Entrepreneurs, Defense, Universities	Infrastructure and Economic Development Bank?	<a href="http://www.ibank.ca.gov">www.ibank.ca.gov</a>	

# Competitiveness Rankings

Selected Metrics	WEF Global Competitiveness Ranking, 2006-7	IMD World Competitiveness Ranking, 2006	IMD Availability of Scientists and Engineers	IMD Quality of Scientific Research Institutions	IMD Technological Readiness	IMD Venture Capital Availability
India	43	29	4	14		
Israel	15	25	1	4	4	2
Singapore	5	3	15	10		
Finland	2	10	3	7	1	
Brazil	66	51 (Sao Paulo, 43)				
Korea	24	29			21	
United States	6	1	18	2	7	1



# Project 1.1

## Economic Development Model Toolkit

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- ❑ **Separate Parallel Track – Innovation Economic Development Toolkit**
  - Individual Innovation Projects will be showcased for replication by other regions
- ❑ **Doug Henton – Collaborative Economics - Toolkit**
  - Multipart guidebook
  - Text, Figures, Links to other resources, Support CD, Worksheets
  - Allow users to create customized, individual, organizational, or collaborative plans for supporting innovation in their regions.



# Project 1.1

## Economic Development Model Toolkit

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### Toolkit will Identify:

- ❑ Innovation Ecosystem
- ❑ 21<sup>st</sup> Century Workforce Skills
- ❑ Cross-Disciplinary Curriculum
- ❑ Assets Inventory Matching
- ❑ Entrepreneur Support
- ❑ Investment Funds
- ❑ Manufacturing
- ❑ Communications



# Project 1.1

## Economic Development Model Toolkit

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- When completed, will have compiled a best practices toolkit based on specific regional challenges, structured so other like-structured regions can utilize.
- Leverage points – by having an increased awareness of other's efforts, ED professionals can select initiative that were successful in other like regions, neglect those that were not, decreasing a region's time, cost and effort to success.



# Project 1.1

## Economic Development Model Toolkit

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If a man doesn't know where he's going,  
it doesn't matter what path he takes.

Lewis Carroll

No great discovery was ever made  
without a bold guess.

Sir Issac Newton



## 1.1 - Economic Development Model Tool Kit

### Partners

- \*Bay Area Science and Innovation Consortium
- California Council on Science and Technology
- Chabin Concepts
- CSA Business Development Retention and Growth
- East Coast Economic Development Council
- Los Angeles Economic Development Council
- San Luis Obispo Economic Vitality Corporation
- Golden Capital Network



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