

Transforming a Regional Economy Through Entrepreneurial Globally Competitive Science Based Clusters

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A New Paradigm for Economic Growth in Globally Traded Industries

- Innovation and flexibility are key drivers of economic growth in the Age of Science
- Creating and sustaining *Rainforests* versus designing and maintaining *Plantations* represents the new path to innovation
- Being ready to seize unplanned for opportunities in contrast to linear management by objectives; opportunistic planning is key

A New Paradigm for Economic Growth in Globally Traded Industries (cont)

- The importance of formal and informal knowledge flows, inter-disciplinary and cross professional relationships to innovation in science based clusters
- Entrepreneurship as a team process rather than an individual process
- The importance of regions, community, culture and identity to the innovation process

Principles of Practice

- Accurately assessing regional assets & gaps
 - Intellectual capital and creativity
 - Financial, business and management “know-how”
 - Flexible, advanced workplace skills in emerging fields of practice
 - The range and depth of cross professional formal and informal networks

Principles of Practice (cont)

- Assuring a favorable context – public policy, agglomeration effects and amenities of place
- Attracting and/or retaining talent – discovery, creativity and high concentrations of R&D

Principles of Practice (cont)

- Attracting and/or developing entrepreneurial competencies and capital which are linked to talent pools
- Flexible, adaptable, knowledge industry professionals and workforce

Tracking Outcomes

Moving from measuring “inputs”; events and processes to “outputs”; sustainable relationships and new organizations

Tracking Outcomes (cont)

■ Measuring output

- Level of regional and external investment in local companies
- Company growth and sustainability
- Employment growth in technology clusters
- Global alliances and partnerships formed around emerging companies in the region
- Retention and attraction of knowledge workers
- Increases in local revenues coming from local companies
- Increases in tax dollars/philanthropic investments

Tracking Outcomes (cont)

- Developing indicators of successful technology commercialization beyond patenting, licensing and traditional tech transfer activities
 - Levels and types of interaction between researchers and industry: joint projects; consulting; scientific advisory boards; boards of directors; founders; internships and employment for grad students and post-docs
 - Public engagement by scientists: speaking, writing, & television; K-12 involvement; museums and related public engagements

Tracking Outcomes (cont)

- Measuring indirect as well as direct benefits of regional economic development to the university and/or research institute mission
 - Research partnerships with industry
 - Endowed chairs
 - Scholarships and fellowships for undergraduate and graduate students
 - Outright donations to the campus for buildings and programs

San Diego's Transformation

**Moving from an exclusively
corporate/defense contracting
economy to one rich in
entrepreneurial
science based clusters**

San Diego's Transformation

Specific Strategies

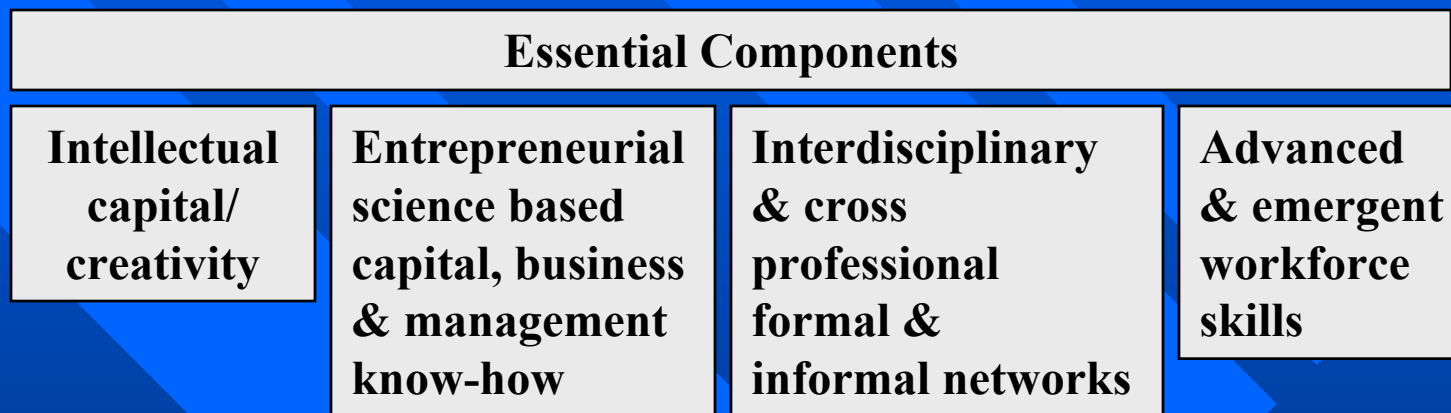
- Building a community that crosses professional and disciplinary boundaries
- Enhancing knowledge flows through numerous formal and informal events, research briefings, newsletters, etc.
- Linking entrepreneurial know-how and capital to promising innovations and start-up companies

San Diego's Transformation

Specific Strategies

- Showcasing regional capacity to potential national and global investors and partners
- Utilizing a privatized, volunteer-driven model of networking in order to fully leverage regional assets, transform social relationships, and nurture an innovation culture

A region must have a “critical mass” of four (4) essential capabilities in order to build a dynamic innovation system which can incubate and grow sustainable science based clusters



Level of Development	Aspiring				
	Emerging				
	Growing				
	Churning				
	Renewing				