



# Tucson Economic Blueprint Strategic Analysis Report

## Section 4: Strategic Market Assessment

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Prepared for TREO

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## **I. INTRODUCTION**

In the United States alone, it is estimated that there are more than 9,000 active economic development organizations at the local, county, regional and state levels. In almost all cases, each organization is vying to fulfill its mission of strengthening a particular economic segment or geographic location. Previously, most of these organizations were singularly focused on competing domestically. In the 21<sup>st</sup> century, however, economic development must be approached from a global viewpoint. U.S. communities must compete against markets throughout the world. Communities that do not realize this state of affairs do so at their own peril.

The challenge of competing in a global economic framework is forcing regions to reconsider and revise their approach to economic development. With knowledge-based factors generally regarded as the fundamental basis of a region's competitive advantage, regional economic development agencies are looking for ways to grow and attract concentrations of innovative, knowledge-based business activity. Education, quality of life and human capital strategies now are fundamental to ensuring regional economic vitality.

Tucson and Southern Arizona number among the thousands of communities on a quest for private capital investment, high quality jobs and advancement in the global knowledge economy. For years, Tucson has progressed steadily largely due to two factors: the inexorable growth of Arizona through in-migration of individuals from other U.S. states and the presence of The University of Arizona. These two dynamics – one market driven and one market captive - have enabled Tucson to withstand the vagaries of the national and world economies over time and evolve from a quiet university town to a regional community of nearly 1 million people with an expanding population and economic base. Representing the Tucson region on the economic development front is TREO (Tucson Regional Economic Opportunities), which

began its first full year of operations in July 2005. TREO is a new rendition of a former regional economic development endeavor that, like so many other similar organizations in countless markets throughout the U.S., was laid to rest for a variety of reasons. TREO is on a vitally important mission to stake its claim to create a world-class economic development organization that will facilitate successful economic development of the Tucson region.

The organization has been successful in attracting a well respected and capable staff. With this new infusion of economic development leadership and the renewed commitment to economic development on the part of the business community and local government, the Tucson market has a new opportunity to excel in the ever-intensifying arena of world economic development. Indeed, TREO's first year of operation has demonstrated quite impressive tangible results raising even greater hope and expectations for the future.

Recognizing that a new approach to economic development is mission critical, TREO has embarked on the development of a new blueprint to frame and guide its endeavors. A key component of this new blueprint for economic success is an understanding of the forces and communities that pose the greatest impediments to success. The purpose of this inquiry is to gather competitive intelligence on those U.S. markets that pose the greatest long-term threat to Tucson's ability to grow a business base and attract new employers.

### **Best of Class Strategic Comparative Markets**

There are many regions in the U.S. that strive to be the "best of the best" for business investment, innovation and job creation. Cities such as Los Angeles, Chicago, San Francisco, San Jose/Silicon Valley, New York, Boston and Washington, D.C./Baltimore

typically find themselves top of mind, but not always top of list. Like other world cities – Paris, London and Tokyo to name a few – these mega-cities increasingly are appealing and affordable only to the very wealthy. In fact, according to the United Nations, most major world cities are home to either the very wealthy or very poor. The middle class increasingly are being squeezed out and moving into far suburbs or second and third tier cities. This makes the attraction of human capital especially difficult for any enterprise, except for those firms that are willing to pay the highest salaries that living and doing business in a world city commands. As a result, companies are looking to other markets for their operations.

Consequently, the rise of second and third tier cities, especially in the U.S., can be explained in part by what has transpired in the world's mega-cities. These smaller and growing markets have emerged as major contenders in the national and world economic development arena. Among them are Austin, San Diego, Raleigh-Durham, Orlando, Tampa and Boise.

### **Top Comparative Markets**

In determining the most strategic economic development competitors for the Tucson region, it is the second tier cities – places like Austin, Orlando and San Diego – that present the most formidable competition both today and into the future. These markets have been selected for analysis and comparison for salient reasons. First, each of these markets are “best of class” in their economic development status. Each has attained a national and/or world standing in specific areas. All three of these markets have successfully pursued a course of action to transform their respective economies and business images from a one-dimensional base into vibrant and diverse markets. Further, each of these markets has many similarities to the Greater Tucson region in terms of assets and attributes, not only from a present day standpoint, but also through their respective historical evolution.

Like Tucson, Austin was once a quiet university, one-industry community. Although Austin is the Texas state capital, its primary economic base was the University of Texas. Today, Austin's brand is synonymous with high tech. Companies such as Dell, Texas Instruments, Hewlett Packard, Motorola and scores of others have made Austin the home for either headquarter operations or significant high value-added operations, including systems and software engineering, R&D and other enterprises that command world-class talent. Austin also is renowned as the U.S.'s “Live Music Capital.” That Austin is known nationally and internationally for two major brands – one economic and one cultural – is an enviable position for any community to have. This status was not accidental. It resulted from a deliberate long-term strategy, strong and consistent leadership from both the private and public sector and a fervent self-belief that the city could become a destination for the high growth industries.

Orlando is another rising strategic market that already is capturing major blue-chip projects on the economic development scene. Since 1964, with the opening of Walt Disney's Disney World, Orlando, was synonymous with the family entertainment and tourism industry. This one-dimensional economy grew rapidly as families and visitors from around the world traveled to Orlando to experience this new Disney World. Later, with the development of Epcot Center and Universal and Warner Brothers studios, Orlando's position as a world destination center appeared to be irrevocably cemented. In the past 15 years, however, Orlando's business image has become more than just entertainment. The community has worked vigorously to capitalize on its world icon status to build and diversify its economy. Today Orlando and Central Florida are now home to more than half of Florida's high tech firms. Because of its world-class Orlando International Airport, Orlando is emerging as a frequent and successful contender for major domestic and foreign businesses.

In contrast to Tucson and Austin, Orlando historically lacked highly ranked university resources. However, with the recent

announcement of the Burnham Institute's decision to locate its East Coast campus in Orlando, this critical component of Orlando's offerings will be substantially enhanced.

San Diego has one of the most enviable positions in the global economic development arena. There is not a biomedical company, scientist, Nobel Laureate or venture capitalist that is unfamiliar with the San Diego name. Largely due to the transformation of the University of California - San Diego from an average public university into a world-class enclave of the top minds in several scientific fields, San Diego has morphed from an expensive beach and surfing community into one of the nation's – and world's – most respected centers of business and science. Like Tucson, San Diego's greatest knowledge asset is its public university. Over the past 15 years, San Diego has become the standard bearer in the knowledge economy with a burgeoning R&D sector in biosciences and other technology specialties that are prolific with commercialization successes.

What lessons can TREO and greater Tucson garner from the successes and standings of these three markets? The purpose of this analysis is to provide an assessment of how TREO's performance compares to other strategic U.S. markets. This first section includes an overview of the primary economic development organizations in these markets as well as key aspects of their programs. The second section presents a synopsis of major differences between the TREO/Greater Tucson economic development approaches versus the three best of class competitors. The third section provides a comparative analysis of major business location attributes. Finally, the fourth section offers some observations that will be instructive for TREO as the organization develops its blueprint for economic growth.

## II. KEY STRATEGIC COMPETITORS

### AUSTIN, TEXAS

Ever since Michael Dell started selling computers from his dorm room at the University of Texas, Austin was catapulted from relative obscurity outside of Texas into a league of top ranked communities for business and entrepreneurs. As the home of UT's main campus and the state capital, Austin consistently has earned distinction as one of the best places for entrepreneurs, venture capitalists, high tech companies, innovators and inventors. Though lacking the universal identity that Dallas earned with the popular TV series in the 1980s, Austin is highly regarded as one of America's most important and dynamic centers of intellectual capital and innovation.

Today, Austin and its surrounding areas are referred to as the "Silicon Hills" largely due to the 3,200 high tech companies that operate there. Although Austin's name has become synonymous with high tech, its economic base is far more diversified, with significant business establishments in finance and services and with strong educational and government sectors. In the past 10 years, Austin has emerged as a major center of innovation and enjoys a reputation for its increasing concentration of entrepreneurs. As a result, Austin is more frequently referred to as the "City of Ideas" among demographers and pundits who evaluate cities.

Companies that are based in Austin strengthen this identity. One such company is Cirrus Logic, a global company that develops high precision specialty integrated circuits for both consumer and industries. Its major corporate clients include Bose, Harman International, IO, Panasonic, Phillips and Samsung. Cirrus's home page is not about the company, but all about Austin. The following is quoted from Cirrus Logic:

*"The headquarters for Cirrus Logic is located in breathtaking Austin, Texas. The city is famous for its thriving business*

*community, natural beauty and plentiful lakes, diverse sports teams, incredible outdoor activities and amazing live music. Austin features that rare combination of small-town charm with big-city entertainment, dining and culture. For quality of life, many people believe Austin is simply unmatched.”*

This loyalty to the Austin brand – the promise of all that Austin brings – is extraordinary. And this commitment and engagement in Austin as a place to live, work and do business, is part of the culture and ethos of the community’s employer base. Economic development and marketing are a way of life in Austin (and generally in all Texas cities). Austin has honed it to a fine art.

### **Greater Austin Chamber of Commerce**

Austin and its surrounding population have a population of 1.4 million. More than 55 percent of the region’s residents, or 771,000 persons, participate in the workforce. The Austin-Round Rock metropolitan area has 693,300 non-agricultural jobs provided by 69,000 business establishments. The region’s largest employment sector is government (21.6 percent), followed by professional and business services (13.5 percent). Austin is the state capital of Texas and the seat of Travis County. Situated in Central Texas, Austin is the fourth largest city in the state and the 16<sup>th</sup> largest city in the U.S.

Founded in 1880, the Greater Austin Chamber of Commerce serves the Austin-Round Rock region in many capacities. Because of its long history in economic development, the Chamber often is perceived as one of the most formidable economic development organizations in the U.S. Rarely has the Chamber “lost” a major sweepstakes prospect; it has been at economic development so long that the organization virtually wrote the book on the subject. The Chamber’s mission is to “provide leadership that will help create regional economic prosperity and success for its members in Central Texas.” However, the Chamber believes that it has been in

the formal economic development business for only three years, beginning with its first five year economic development strategy and fundraising program. In January of 2004, the Austin Chamber created the Greater Austin Economic Development Chamber Corporation, a separate 501(C)3 non-profit entity. This new entity, along with a five-year strategy and fund-raising campaign was initiated because the community’s leadership believed that it lacked a sustainable economic development program. The intent now is to be successful with this new strategy and begin a new five-year funding cycle that will enable the organization to raise more funds to ensure its longevity.

The economic development budget is approximately \$1.53 million, all of which is expended on economic development programs, since its 12 staff members are on the staff of the Chamber. The economic development corporation of the Chamber (EDC) has a 23 member Board of Directors. Individuals who serve on this board are not required to make a financial contribution to the organization. There are a total of 280 investors in the economic development corporation; more than 60 companies are investing at \$25,000 per year for five years, and five are contributing at a level of \$100,000 per year for the five-year period.

The EDC created an Economic Development Council, which engages the large investors. This organization has “no authority” but does meet each month to receive confidential briefings of prospect activity. In addition, these large investors are invited to participate in business recruitment missions. The EDC derives 96 percent of its funds from the private sector; the City of Austin and the five counties that the EDC represents contribute a total of 4 percent to the organization’s budget.

The EDC expends approximately 80% of its annual budget on business recruitment, including public relations, out of state events, trade shows and advertising. The remainder is expended on business retention. While the city of Austin and the five counties

in the EDC's sphere each have an economic development function, only the Chamber EDC performs external marketing.

## Major Competitive Advantages

1. **Talent Base** – Austin is universally viewed as a technology hub. With the University of Texas graduating some of the best engineers in the nation, the availability of talent is unparalleled. It is for this reason that Austin always is on the short list for major technology projects. Austin's tagline is "Austin the Human Capital."
2. **Quality of Life** – The median age of Austinites is about 4.5 years younger than the median age of most communities. Austin is a young city. There are lots of activities and venues for young people and their families. In addition, the region has many high quality business parks and facilities that also offer outdoor amenities for their employees.

## Primary Economic Clusters

- Automotive
- Medical Devices
- Digital Entertainment
- Wireless
- Semiconductors
- Headquarters/Back Office/Data Centers
- Clean Energy
- Software
- Distribution/Logistics

Note: The Chamber has been working to build the semiconductor, headquarters, software and digital entertainment clusters for years.

The other clusters were newly identified in the EDC's five year strategy.

## Marketing to Targeted Clusters

The Chamber uses a variety of techniques to reach and generate prospects in its targeted clusters. The EDC has established committees of local companies in its cluster roster and asks representatives of these firms to meet with prospects or identify new leads. In addition, the EDC participates in major trade shows related to the clusters and advertises in trade publications. The EDC has also identified concentrations of targeted cluster firms in other parts of the U.S. and conducts business recruitment missions to those markets. Moreover, the EDC has identified a list of 15 to 20 prime prospect firms that do not have a presence in Austin and use the presidents of local firms to call or contact those prospects each month with the hopes of convincing them to a locate.

The EDC also has a national public relations firm on retainer that is located in New York. The EDC conducts a major marketing mission to New York/New Jersey each year. Each staff member generally is on the road two times each month.

## Incentives

The State of Texas is perhaps the most incentive-rich state in the nation. Largely due to oil fund trusts and revenues, the state has a \$280 million "Enterprise Fund," distributed at the discretion of the Governor. Incentive programs are available at the local level as well. A municipality makes a commitment to a particular prospect on the basis of performance standards and typically offers an incentive that is equal to \$10,000 cash per each job created that is above a certain salary threshold. Once this local commitment is firm, a request goes to the Governor's office for matching Enterprise Funds. The final decision is made by the Governor, Lt.

Governor and Speaker of the House. Decisions have to be rendered very quickly.

In the last few years, Austin landed Samsung, which is building the world's largest semiconductor lab in that market. Total capital investment on the company's part will be \$5 billion and the project will generate 1,000 new direct jobs. In addition, the Chamber EDC has assisted Hewlett Packard, which already has a major presence in Austin, to land a new 400-employee data center, representing a total private capital investment of \$800 million. Two California relocations have recently occurred: Dimensial Fund Advisors is moving its headquarters and 800 jobs from Los Angeles to Austin, and Compass Learning, an educational software firm, is relocating its headquarters and 160 jobs from San Diego.

Austin also offers substantial workforce training funds, directly as well as through the State of Texas programs. In addition, the region has enterprise zones and a foreign trade zone.

### **Best Practices for Business Recruitment**

- 1. Highly Focused Cluster Outreach** – The Chamber focuses only on companies in their eight economic clusters. A major part of the organization's outreach is trade shows. The Chamber has a major exhibit and conducts direct mail prior to the trade show in addition to advertising in trade show dailies and vertical industry monthly publications.
- 2. Cost of Living Advantage** – The Chamber targets areas of the country where Austin has a significant cost-of-doing-business advantage and conducts sales/marketing trips to those regions calling on companies that are in the economic clusters.
- 3. Focused Research and Direct Outreach** – Companies in each of the targeted clusters industries that do not have a presence in Austin are identified and researched. The Chamber then

uses its business leadership to "touch" them in some form (direct mail, email, newsletters, etc) at least once a month.

- 4. Venture Capital Firms** – These firms are identified and contacted on a regular basis to let them know the advantages of moving the companies they fund/own to Austin.
- 5. Engagement of Local Business Leaders** – In sales/marketing missions and in connecting the Chamber to visiting senior level executives of local firms, the Chamber has an extremely well-developed network of relationships with its local business community. This allows the Austin business message and an executive gift package to be delivered to the visiting senior executives.
- 6. University of Texas** – Nationally ranked in a number of key academic categories, the University brand is seamless with the name Austin.

### **ORLANDO, FLORIDA**

World renown as America's family fun capital, Orlando is home to Walt Disney World, Sea World and other famous mega-theme parks including Discovery Cove and Universal Studios. Today, Orlando is the fifth-ranking U.S. destination of overseas travelers after San Francisco, Miami, Los Angeles and New York City. It claims the second highest number of hotel rooms in the U.S., lagging just behind Las Vegas in the bedroom stakes.

While Orlando is a world icon for tourism, the metropolitan region has quietly morphed from a one-dimensional economy into a significant anchor of Florida's burgeoning high tech sector and a major center of space technology enterprises that have clustered close to the Florida Space Coast. Increasingly, Orlando is developing a highly respected reputation as a dynamic business center and one that remains consistently committed to business and

economic growth. Orlando is at the heart of the Central/Space Coast of Florida – a region that is home to more than half of the state’s high tech firms. Orlando also is situated at the geographical center of Florida, offering equidistant access to all major regions throughout that state. Today the Orlando region has emerged as one of the top locations for business in the U.S.

## **The Metro Orlando Economic Development Commission**

Metro Orlando’s population is 1.953 million; more than 1 million of the region’s residents are in the workforce. The region has 1.08 million non-agricultural jobs provided by more than 76,200 business establishments. The largest employment sector is Professional and Business Services (20.1 percent), closely followed by Leisure and Hospitality (20 percent). The City of Orlando is the seat of Orange County, Florida. Orlando is the sixth-largest city in Florida and its largest inland city. Orlando is the nexus of the Orlando-Kissimmee Florida metropolitan statistical area, which is Florida’s third-largest metro (after Miami-Fort Lauderdale-West Palm Beach and Tampa-St Petersburg-Clearwater).

The Metro Orlando Economic Development Commission has deep historic roots, dating back to 1977, when the Industrial Development Commission was created. The IDC united the efforts of three groups that were doing similar economic development work: the Orlando Chamber of Commerce’s Committee; the Central Florida Development Committee and the Orlando/Orange County Industrial Development Board. In 1981, Seminole County folded its economic development functions into the IDC. Lake County joined the partnership in 1987 and Osceola County joined in 1989. In 2001, the organization was renamed the Metro Orlando Economic Development Commission and the community brand, "Putting imagination to work," was launched. Today, the Metro Orlando EDC represents four counties and the City of Orlando.

The organization’s vision is to “create and sustain a prosperous and diverse business community.” Its mission reads: “In concert with our investors and partners, the mission of the EDC is to build a diverse economy capable of withstanding dramatic shifts in the global marketplace and to position Metro Orlando as the world’s premier business location.”

The organization has a 63 member Board of Directors and a full-time staff of 38. Its FY 2007 budget is \$6.4 million, with 38 percent derived from the public sector. The City of Orlando and four counties that comprise the EDC contribute on a per capita basis ranging from \$1 to \$2 per capita. More than 300 companies, or investors, make up the private sector portion of the organization’s funding. Of these, 18 firms invest \$100,000 annually and are members of the Governor’s Council – a group that Jim McGraw of KMK developed when he was working with the Metro Orlando EDC.

The Governor’s Council is a highly engaged group of business leaders that personify the strong private sector leadership of Orlando. When a major project is needed for the community, it is the Governor’s Council that convenes and focuses on getting the job done. Examples include a new performing arts center, a new arena for the Orlando Magic and other major regional events and venues. The Council also works with local school boards on matters of facility construction, educational content and curricula. Other groups within the EDC investor base exist as well: Policy Council for investors of \$50,000 to \$99,000 and Corporate Level for investors of \$1,000 and up.

The Metro Orlando EDC is solely responsible for business retention and recruitment for its region. The organization also expanded its service offerings to include film and television production, which falls under the EDC-managed Metro Orlando Film & Television Commission. In addition, the EDC established an industry retention team to help local businesses grow and to

regularly assess and help meet their needs. The Metro Orlando International Affairs Commission (MOIAC) is yet another community program managed by the EDC. That initiative is dedicated to bringing global investment to the area and to enhancing local exporting opportunities. The Central Florida Technology Partnership (CFTP), another program managed by the EDC, was established in 1999. This program is focused on building the region's technology business base.

### Major Competitive Advantages

1. **Universal Brand** - One of Orlando's greatest competitive advantages is its universal brand. Regardless of where the EDC staff travels or with whom they meet, everyone has heard of Orlando. This also poses a significant challenge to the EDC in overcoming the family destination image and building a more accurate business image.
2. **World Class International Airport** – Another major Orlando asset is the Orlando International Airport, which serves as its portal to the world. J.D. Power ranked the Orlando airport as number one in customer satisfaction. The airport provides direct, non-stop access to 86 cities in the U.S. and 16 destinations around the world. In 2005 alone, Orlando International Airport hosted more than 34,000,000 passengers.
3. **High Tech Base** – There are more than 3,500 high tech firms in the Orlando region, employing 53,000 people. One of its most significant technology concentrations is the laser and photo electronics/optics sector. Another is high value added simulation and training, which melds the defense industry with entertainment technology. Now, the region is also focusing on life sciences/biotech.
4. **University of Central Florida** – As the nation's eighth largest public university with 46,000 enrolled students,

UCF is a major economic driver. The EDC enjoys a very close and strong working relationship with the University's president, who serves on the EDC's Board of Directors. He also is actively engaged in the organization's retention, recruitment and strategic initiatives. The university has a high level professional responsible for working with the EDC. This individual coordinates the University's work with both existing and prospective new employers.

5. **High Caliber Quality of Life** – One of Orlando's most important assets is its ability to attract and retain the top talent sought by every employer, regardless of sector. The EDC maintains that the region's quality of life remains one of the most important location attributes.

### Primary Economic Clusters

- Advanced Manufacturing
- Agri-technology
- Aviation & Aerospace
- Customer Support & Back Office
- Digital Media
- Energy & Alternative Fuels
- Film & Television Production
- International Business
- Life Sciences & Bio-Technology
- Manufacturing, Warehousing & Distribution
- Modeling, Simulation & Training

### Marketing to Targeted Clusters

The EDC's primary marketing activity is the direct outreach it conducts through its business development staff. One of their representatives is on the road at least 47 out of 52 weeks a year. In addition, the EDC conducts substantial direct mail, using unique

campaigns that reach their targeted audiences. The EDC places ads in targeted magazines that reach decision makers in their clusters. Examples include Wired Magazine, National Public Radio, and Photonics Magazine. The EDC also stages several VIP events annually, many focused on introducing the business dimensions of Orlando to the millions who experience the hospitality venues annually. Finally, the EDC participates in major cluster-specific trade shows, including Bio and Photonics West.

### **Incentives**

The EDC maintains that incentives are crucial to virtually all of the projects with which they work. In 2006 alone, the organization has successfully completed 41 business retention and new employer locate projects. The state and local governments provide such incentives. In landing the Burnham Institute for Medical Research, for example, a total incentive package of \$310 million was used to entice this La Jolla, California, based medical research institute to establish its East Coast Campus in Orlando. Under the leadership of Governor Jeb Bush, state surpluses were earmarked for the life sciences. The Governor pursued Scripps and successfully located them in Palm Beach in 2004 with a \$600 million package. Half of these packages came from state funds while the other half was matched by city, county and university dollars. The EDC calls these packages “once in a lifetime” incentive deals and does not believe deals of similar magnitude will be seen again.

More generally, incentives are awarded on a case-by-case basis. Of the four largest deals that the EDC assisted in 2005, each one received incentives. Those projects were: the Burnham Institute, Lockheed Martin, the retention of the Darden Group’s (Olive Garden and served other national restaurant chains) corporate headquarters, and JetBlue. The most important incentive program offered in Orlando is the *Quality Target Industry* incentive program. A company is eligible if it meets the parameters of the industry cluster, pays 15 percent above the average salary and other requirements as well. Assuming a company meets these

thresholds, then the incentive equates to property tax rebate that is funded 80 percent by the state and 20 percent by local government (county or city.)

### **Best Practices for Business Recruitment**

1. **Corporate Structure** – All EDC project managers specialize in sectors and are highly experienced in at least one of the major cluster industries.
2. **EDC Infrastructure** – The EDC’s technology is state of the art. It has a major investment in research and business intelligence as well.
3. **Powerful and Engaged Board** – The business and governmental leadership is very strong. The private and public sectors work well together at all levels through the EDC.
4. **Unique Location** – Their practice of “capturing the visitor” to Orlando is paying big dividends.
5. **Regional Collaboration** – Through the Florida High Tech Corridor partnership, Orlando has joined forces with Tampa to combine efforts to win technology companies.

### **SAN DIEGO, CALIFORNIA**

San Diego is perhaps one of the most beautiful coastal communities in the U.S. Famous for its Balboa Park and the public zoo, San Diego has also gained global recognition as one of the strongest and most successfully diversified regions in the U.S.

The region's broad and well-balanced business and technology base is largely responsible for this standing.

Much of the credit for San Diego's economic status goes to the University of California San Diego, which has gained global renown for its academic quality and is home to many Nobel Prize winners and members of the National Academy of Sciences. UCSD shares its Torrey Pines location with the world renowned Scripps Institution of Oceanography, the Salk Institute, the Scripps Research Institute and the Burnham Institute for Medical Research. Additionally, San Diego State University's Center for Bio/Pharmaceutical and Biodevice Development provides a major research and innovation asset to this concentration of world-class educational and research brainpower.

Because of this, San Diego is able to claim one of the world's leading centers of technological innovation and success in bringing products to market, generating new enterprises and creating jobs. Corporate giants such as Merck, Pfizer, Dow, Novartis and others have established significant R&D labs in San Diego. The region's economy also has a major port, which includes the only major shipbuilding yard on the West Coast. In addition, San Diego has a major naval base and other military operations, all of which provide a relatively stable economic pillar.

### **San Diego Regional Economic Development Corporation**

Greater San Diego's population is just over 3 million based on the U.S. Census Bureau's 2005 population estimates. More than 49 percent are in the workforce. The region has more than 1.4 million jobs provided by 85,791 business establishments. The largest employment sector is Health & Leisure & Other Services (39.5 percent), followed by Government (14.9 percent). The City of San Diego is the second largest city in California and the [eighth largest](#) in the U.S. Greater San Diego is the [17th-largest](#) metropolitan area

in the U.S., and is the third largest county by population in California. The [county seat](#) is the [city](#) of [San Diego](#).

Now in its 41<sup>st</sup> year of operations, the San Diego Regional Economic Development Corporation (EDC) is a private, non-profit corporation that works in partnership with, and receives significant funding from, the City of San Diego. Additional funding comes from the County of San Diego, San Diego Unified Port District, the City of Chula Vista, other cities in the region and more than 200 private sector investors.

The EDC's vision is lofty: "The San Diego region will be globally competitive, fueled by a diversified technology driven economy, and positioned to achieve economic prosperity and opportunity for its residents." Its mission is to "assist companies in locating or expanding - and with solving problems - while also focusing on issues of regional competitiveness, through a CEO-driven issue agenda that supports the growth and expansion of high-wage, high-growth industries in the region."

The organization has a 64 member Board of Directors and a full-time staff of 12. Its FY 2005 budget was \$2.2 million (noticeably very low because of numerous other EDCs in the region), with 40 percent derived from the public sector, most notably, the City of San Diego. More than 250 companies comprise the EDC's membership base.

While the EDC is the region's foremost economic development organization, there are several more organizations crowding the landscape. They are:

#### ***East County Economic Development Council***

The East County Economic Development Corporation (ECEDC) is an award-winning, non-profit organization of leaders committed to a healthy, vital economic climate and quality of life in the East County region. ECEDC promotes successful business activity in the cities of El Cajon, La Mesa, Lemon Grove and Santee, and in

the unincorporated communities of Alpine, Lakeside and Spring Valley. In addition, ECEDC has developed and maintains a current database of more than 1,500 major employers, 530 of which are located in East County. The Connectory includes information on industrial products, technologies, services and core capabilities and capacities.

#### ***North County Economic Development Council***

The North County Economic Development Council is a coalition of the private and public sectors working together to sustain and carefully grow the economic base of North San Diego County, including the cities and communities of Carlsbad, Del Mar, Encinitas (including Cardiff By The Sea, Leucadia and Olivenhain), Escondido, Fallbrook/Bonsall, Oceanside, Camp Pendleton, Pala/Pauma Valley, Poway, Ramona, Rancho Bernardo, Rancho Penasquitos/Carmel Mountain Ranch, San Marcos, Solana Beach, Valley Center and Vista.

#### ***South County Economic Development Council***

South County Economic Development Council is a non-profit organization formed in 1989 to serve the economic development interests of the Southern portion of San Diego County, including: Chula Vista, Coronado, Imperial Beach, National City, Otay Mesa and San Ysidro.

#### ***Southeastern Economic Development Corporation***

The Southeastern Economic Development Corporation promotes economic development and revitalization in the Southeast San Diego area. The Southeastern EDC provides economic development services and makes recommendations concerning redevelopment plans and project areas.

#### ***Centre City Development Corporation***

The Centre City Development Corporation (CCDC) is a public, non-profit corporation created by the City of San Diego to implement Downtown redevelopment projects and programs.

CCDC focuses on projects designed to support a vibrant downtown community.

#### ***City of San Diego Department of Economic Development and Community Services***

The City of San Diego Department of Economic Development and Community Services is comprised of three divisions that improve the city's neighborhoods and the community-at-large through programs and services. The Economic Development Division delivers strategies and services to enhance employment opportunities, assist new businesses, promote access to capital, as well as retain and expand existing San Diego businesses. The Redevelopment Division focuses on neighborhood revitalization. The Community Services Division provides human services to enhance the quality of life for San Diego's diverse population.

#### ***Port of San Diego***

The Port of San Diego is a special government entity that manages the San Diego Harbor, and operates the regions primary commercial airport, Lindbergh Field. The Port also administers the public lands along San Diego Bay with a focus on promoting economic growth, enhancing the regional economy and preserving tideland resources.

#### ***San Diego County Office of Trade and Business***

San Diego County's Office of Trade and Business assists with the retention, expansion or attraction of businesses in the unincorporated areas of San Diego County by working in a coordinated effort with County, State and Federal agencies, while acting as a liaison and representative to and for businesses.

### **Major Competitive Advantages**

- 1. Life Sciences Community** – The concentration of world-class university and private research institutes, along with

major players in the pharmaceutical and bio sectors.

2. **Qualcomm and Communications** – The telecommunications giant Qualcomm was founded in San Diego. Because of its substantial investment in R&D and the presence of several strategic naval operations, the region remains on the leading edge of technological innovation in this key sector.
3. **Entrepreneurial Community** – Scores of entrepreneurs have concentrated in San Diego, along with an equally strong venture capital sector. New ideas and new technologies continuously grow in the region.
4. **Partnerships Between Business, Research and Educational Communities** – In the view of the EDC, this is by far one of their greatest competitive advantages, and clearly differentiates San Diego from other developed centers of R&D and high tech. The networks are dynamic and deep.

### Primary Economic Clusters

- Life Sciences & Biotechnology
- Information Technology
- Software & Computer Services
- Defense & Transportation Manufacturing
- Communications
- Computer & Electronics

### Marketing to Targeted Clusters

In 2005, the EDC commissioned a major study entitled *The Indicators of Sustainable Competitiveness*. Essentially, the organization identified 13 potential and ideal competitor markets

as benchmarks. The comparative analysis contained in this seminal report enabled the EDC to bring more focus to its outreach initiatives. The organization does not keep score on the basis of locates and jobs created, but rather more qualitative factors such as environmental well-being (water and air quality); economic well-being (standard of living, educational attainment) and equity (income distribution, housing affordability.) The EDC has targeted cluster-specific firms within those markets and is conducting business attraction trips to interest those firms in establishing a presence in the San Diego region. In addition, the EDC expends considerable resources on developing, maintaining and participating in cluster-related trade organizations and shows. In cooperation with these trade groups, the EDC hosts San Diego based events.

### Incentives

The EDC defines incentives differently than the average economic development organization. Because of the lack of incentives available at the local and state level, the EDC has worked to position and package the synergy and relationship networks as a major inducement for business retention and recruitment prospects. For example, the bioscience networks between the EDC, the universities and research institutes have proven to be the most important “incentive” that the organization can offer. Despite the lack of any public funding to induce any of the major players that have established significant presence there, the San Diego region is the largest life sciences hub in the U.S.

Again, the EDC does not maintain the traditional scorecard of economic development organizations. It does not claim to have assisted many companies in the last few years, and in fact, maintains that it only now is starting to go outside of the region for recruitment purposes.

## Best Practices for Business Recruitment

The EDC is justifiably proud of its *Indicators of Sustainable Competitiveness* and views that report and the new success criteria as a best practice. This data provided the San Diego leadership with clear information on its future sustainability. Many areas for improvement were identified and the EDC's Board has launched the "Best Practices Missions," visiting Austin and Denver to find out more about how those markets have attained high performance standards in the environmental, economic and equity arenas. In addition, the cluster-specific initiatives, both on the outreach front as well as the business/education/research networks, are considered a best practice. Finally, the EDC believes that its market intelligence – the information it can deliver to any company or investor on San Diego's economy, research and business base – stands above most other communities.

The EDC did not reference CONNECT as a best practice, but it is widely regarded as one of the most successful regional programs that links high tech and life science entrepreneurs with the resources they need for success: technology, capital, markets, management, partners and support services. Founded in 1985 with the assistance of the San Diego Regional Economic Development Corporation and other leading business organizations, CONNECT began at UCSD but has since spun out and gained independent status. The organization plays a dual role in accelerating growth: it provides added value and delivers targeted, high-level expertise to San Diego's technology business community by teaming up with the region's most prominent industry-specific organizations and individuals, and by partnering with world-class UCSD resources, such as the School of Medicine, Jacobs School of Engineering, San Diego Super Computer Center and Scripps and Salk Institutes. Since its inception, CONNECT has assisted more than 800 technology firms. Other cities and countries are replicating the CONNECT model; similar organizations now are operating in Scotland, Denmark, Norway, Sweden and Taiwan. CONNECT is

entirely self-supporting through membership dues, course fees and corporate underwriting for specific programs.

Another best practice that was not referenced by the San Diego Regional EDC is the High Tech High School, an initiative that was driven by the business and educational leadership of that organization in 2000. High Tech High began as a single charter high school and has since evolved into a school development organization with a growing portfolio of innovative charter schools spanning grades K-12. HTH combats the twin problems of student disengagement and low academic achievement by creating personalized, project-based learning environments where all students are known well and challenged to meet high expectations. These schools have redesigned education to ensure that all students graduate well prepared for college, work and citizenship; they also deliver curricula based in technology including robotics, life sciences, information technology and other key sectors. HTH Schools were the first charter schools in California to credential their own teachers, and their relationships and networks with the business community are extremely well-developed. One hundred percent of their graduates have been accepted to colleges; 80 percent of them to four-year degree granting institutions.

## TUCSON, ARIZONA

Tucson has an incredibly rich heritage, being the oldest continually settled town in the country. It is a diverse mixture of Spanish, Native American, Mexican and contemporary American cultures are reflected in the community's unique style of architecture. The community is a mere 60 minutes from the border of Mexico and forms one endpoint of the 100-mile I-10 corridor that connects to Phoenix. Much of Tucson's economic development has been linked to the University of Arizona. In addition, two significant military installations - the Davis-Monthan Air Force Base and the U.S. Army Intelligence Center Fort Huachuca – have provided highly stable economic underpinnings for the region, leading the

aerospace/defense industry to become the strongest cluster currently in the region.

Many trophy-name advanced technology firms have located and grown in Tucson: Raytheon Missile Systems, Texas Instruments, Intuit and Sanofi-Aventis have a significant presence there. Since the early 1990s, the optics industry emerged in Tucson as a major focal point. Today, there are more than 150 companies related to the optics industry that are doing business in Tucson. Tourism is a major component of the Tucson economy due in part to the middle and upper socio-economic cohort of Sonorans who travel to the region to shop.

### Tucson Regional Economic Opportunities – TREO

Greater Tucson’s population is approximately 957,000 and nearly 50 percent of the region’s residents participate in the workforce. The region has more than 306,821 non-agricultural jobs served by 19,795 business establishments. The largest employment sector is Trade, Transportation and Utilities (58.9 percent) followed by Education and Health Care (51.6 percent.) The Leisure and Hospitality sector accounts for 41.7 percent of the region’s jobs. As of July 1, 2005, the U.S. Census Bureau estimates placed the City of Tucson’s population at 521,605 and the metropolitan population at 931,210. By 2008, the city population is expected to exceed 610,000 while the metropolitan population is projected to reach over a million. In 2005, Tucson ranked as the 32<sup>nd</sup> largest city and 52<sup>nd</sup> largest metropolitan area in the U.S. Tucson is Arizona’s second largest city and the largest urban center in Southern Arizona. TREO’s sphere of influence includes the major incorporate suburbs of Oro Valley, Marana, South Tucson and Sahuarita.

Founded in July 2005, TREO is a new private-public partnership with a mission to serve as a “single, focused economic development effort to ensure sustainable vitality for the region’s

future.” TREO is the lead economic development agency for the Greater Tucson region. TREO’s vision for the community it serves is to strengthen Greater Tucson by “providing leadership with vision and coordination . . . through an integrated approach of programs and services to support the creation of new businesses, the expansion of existing businesses within the region, and the attraction of companies that offer high value jobs and share the community’s values.” Central to the organization’s foundation are a set of values that reflect what is most important in the economic development of the Tucson region as seen in this diagram.



Source: TREO Website, September 2006, [www. Treoaz.org](http://www.Treoaz.org)

The organization is governed by an 11 member Board of Directors comprised of elected officials from the local and county governments; the presidents of the University of Arizona and Pima County Community College and private sector leaders. TREO’s annual budget for FY 2007 is \$3.97 million. Its funding is derived primarily from the public sector, with the City of Tucson and Pima County providing 70 percent of the revenues. As is typical in a start-up situation, the public sector proportion of funding is stronger and will evolve over time into a predominance of private sector funding. About 40 companies comprise the private sector

funding base; minimum contributions are \$2,500. In addition, a Council of Trustees has been established, requiring a minimum commitment of \$50,000 annually. Approximately 13 to 18 companies contribute at that level. TREO has a staff complement of 25 highly experienced professionals.

TREO's structure is unique in that it is an authentic "one stop" center for business and economic development services, including workforce development and administration of the enterprise and foreign trade zones. This configuration is unique in that an existing or prospective new business can attain access to all of the resources available in greater Tucson through one point of contact.

### Major Competitive Advantages

- 1. Unique One Stop Structure** – Greater Tucson has a unique asset in TREO. The organization uniquely delivers all business and economic development services and program offerings to its clients. TREO's business model is structured to be an agile and integral component of the business location decision value chain.
- 2. Strategic Location** – Greater Tucson's close proximity and rapid access to the vast markets of California and Mexico is unparalleled.
- 3. Access and Affordability of Workforce** – Employers located in Greater Tucson have access to a broad regional labor shed. The cost of labor is competitively priced compared to Phoenix and other major markets.
- 4. Bilingual Work Force** – Greater Tucson's workforce has a distinct advantage in its diversity; of the more than 391,724 individuals participating in the region's workforce, 25.81 percent are of Hispanic heritage.

### Primary Economic Clusters

Presently, TREO is re-evaluating the cluster based economic development strategy that was created in 1996. This approach was developed as part of a major statewide initiative in the early 1990s. In fact, Arizona was the first state to adopt Michael Porter's cluster based economic development theory and put it into practice. This significant undertaking came at a time when the Arizona economy was in recession and the state's leadership recognized that continued reliance on growth as its number one industry would be detrimental to the future well-being of the state. While TREO is revisiting the effectiveness of this strategy, the clusters that drove previous economic development efforts are:

- Aerospace
- Bioindustries
- Environmental Technologies
- Information Technology/Software
- Optics
- Teleservices
- Plastics & Advanced Composite Materials
- Fabricated Metals
- Industrial Machinery & Equipment
- Electronic & Other Electronic Equipment
- Instruments & Related Products

### Marketing to Targeted Clusters

At the present time, TREO has several major initiatives underway, mostly related to evaluation, research, data delivery and tracking systems. A significant accomplishment was attained when TREO negotiated an agreement with the Arizona Department of Commerce to serve as the exclusive referral contact for Southern Arizona. This enhances a pipeline of qualified prospects, although

over half the prospects originate directly to TREO from site selection consultants.

On the marketing front, TREO is participating in key industry and professional events, including CoreNet and industry-specific trade shows and summits. Through its president and CEO, the organization maintains productive relationships with the national site location consultant community. TREO's primary marketing focus at this time is to personally visit leads to convert them to prospects and, ultimately, to successful locates.

### **Incentives**

TREO uniquely can deliver specific incentives through its administration of the local workforce training resources, the Enterprise Zone and the Foreign Trade Zone. As is typical of Arizona, some incentives are available at the state level, almost always on a case-by-case basis. Historically, Arizona has not been an incentive-rich state and has captured substantial new business without them. The relocation of Pella Corporation is a prime example of this fact.

### **Best Practices for Business Recruitment**

1. **Full Range of Business Services** – TREO is able to provide the complete range of professional business location information and services to its clients.
2. **Agile Organizational Structure** – TREO has a small Board of Directors and is able to respond to opportunities very quickly.
3. **Highly Professional Staff** – TREO's staff of 25 is highly talented; the organization compensates them well and they comprise a high performance team that has significant capacity to deliver.

## **III. Analysis of Economic Development Organizations and Programs**

### **Organizational Differences**

As the above analysis demonstrated, the economic development organizations among the Tucson, Austin, Orlando and San Diego regions are quite disparate. Their structures range from a traditional and historic chamber to a start-up, private-public partnership. However, their respective board compositions are relatively similar. In all cases, chief elected officials of local governments, presidents of universities and community colleges and business leaders serve on these boards. One major difference is the magnitude of private sector leadership, which in TREO's instance, appears to be the weakest vis-à-vis these other competitor markets. Of the four organizations, TREO's board is the most nimble but also the smallest. Budgets among the organizations are comparable. However, there is a major disparity in the proportion of private to public funding for TREO. As would be expected in a new organization, the percentage of public funds for TREO is extremely high compared to these other markets, but on par with where government revenues typically are for new private public partnerships.

Another significant difference between the organizational structures of these four organizations is the level of corporate leadership. It appears that while TREO enjoys strong support and endorsement from the top levels of city and county government, the organization requires the same level of commitment and engagement from top business leaders. Also, TREO is the only one of these four organizations that does not require a minimum dollar investment in order to be appointed to its Board of Directors. One of the most important assets that the other three economic development executives stated was the absolute, unequivocal support they receive from their region's top business leaders.

When compared to the other markets, TREO is in an enviable position in that it is the sole organization with significant authority to deliver specific incentive-type programs including workforce training monies, FTZ and Enterprise Zone benefits. The Metro Orlando EDC also has significant powers and authority; it runs the film industry development organization and serves as a one-stop shop for the permits that filmmakers need to set up shop. Metro Orlando EDC also runs the region's international trade and development commission. It is the sole organization responsible for business retention and recruitment in its sphere of influence. In contrast, San Diego Regional EDC works in a highly fragmented environment, in some cases competing with at least eight other economic development organizations. The Greater Austin Chamber of Commerce has been and will remain the sole business recruitment organization for that region.

### **Marketplace Advantages**

The Tucson, Austin, Orlando and San Diego regions are growth regions, continuing to capture domestic and foreign immigration. That the economies of these regions have remained fairly robust, with the exception of the national economic recession in the late 1980s/early 1990s, is testament to a variety of factors. For Austin, Orlando and San Diego, they will tell you that their economic progress is a result of their concerted strategies and initiatives that they have executed over the years. There are several distinct competitive advantages that each market can capitalize on which are highlighted in Section 1.

For Austin, Orlando and San Diego, there is significant momentum in economic development building upon some of their major competitive advantages. For example, the inexorable force of tourism will continue to drive Greater Orlando's economy, embellish its already well-established image and showcase the market to the millions of visitors who travel there each year. More recently, Greater Orlando and the Metro Orlando Economic Development Commission have had major successes on the

business recruitment front, most recently recruiting the Burnham Institute for Medical Research to build its Eastern headquarters in the city. Orlando increasingly is appearing in the top quartile of major national rankings. Its airport is second to none in terms of international connectivity.

In Austin's case, the recent success of landing the Samsung facility – what will be the world's largest semiconductor plant - is one more victory that follows previous such wins. The Samsung plant is an enormous victory for Austin and Texas, not only for the \$5 billion of private capital that will be invested to build it, but for the additional billions that will be generated directly and indirectly in Greater Austin's economy for decades to come. Through the University of Texas, Austin has a continuous source of young intellectual capital and an economy that is providing the types of jobs that these 21<sup>st</sup> century knowledge workers expect. Additionally, the community has another dimension it can promote – more live music bars and cafes than any other place in the nation.

San Diego is in a league of its own, which is where the KMK Team hopes to guide Tucson. San Diego has economic development momentum because it has reached a critical mass in one of the most dynamic industries in this new economy - biosciences. Further, Greater San Diego is working hard to build critical mass in other sectors as well, and given its track record, is likely to succeed. At the same time, this market is plagued with one of the highest costs of living and most congested transportation systems in the U.S. And yet businesses, venture capitalists, entrepreneurs and highly skilled and educated talent continue to migrate. Like Tucson, it has a comparable airport and its public university is considered one of the best in the world in specific areas of science but had more humble beginnings.

One of the most significant and symbolic differentiators for greater Tucson is the presence of a bilingual workforce. Clearly, having a diverse workforce and talent base is at a premium in the economic

development arena. Diversity is core strength and one that will need to be fully optimized as TREO's blueprint develops.

Another important differentiator between markets is the quality and reputation of the public higher education resources. In Section 3 of this assessment, specific comparative rankings are provided. The University of Arizona does fare well, especially when compared to the University of Central Florida (Orlando) and in some cases, the University of Texas (Austin). However, the key difference between greater Tucson and these strategic competitive markets is the extent of engagement that the University of Arizona has in terms of the economic development in its hometown region. In all cases, including Orlando with its large but below average public university, there is a seamless and highly synergistic relationship between the economic development organizations, their agendas and their universities. While The University of Arizona has had a long tradition of promoting economic development office, the office's programs have largely been independent of the region's priorities. The University's economic development agenda must be aligned with those of TREO in order to bring value and fully capitalize on the very favorable reputation of the institution. Top economic development officials with the large universities in San Diego, Orlando and Austin work as fully integrated members of the economic development organization teams in those markets. The primary lesson here is that the Greater Tucson economic development agenda can and should drive the business and economic development agenda of The University of Arizona.

### **Primary Clusters/Targets**

Although TREO currently is re-evaluating its commitment to a cluster based strategy, it is helpful for the organization to know the types of clusters and industries that its "best of class" strategic competitors are targeting for recruitment. Table 1 features the clusters from each market.

There is significant redundancy between the primary clusters of greater Tucson and the Austin, Orlando and San Diego markets. These clusters undoubtedly are repeated hundreds of times on similar lists of cities, counties, regions and states. Clearly, the Austin, Orlando and San Diego regions are working with significant competitive strengths, and in the case of Austin and San Diego, already have attained critical mass in at least one of their primary clusters. As TREO continues through this analysis phase, it will be mission critical to determine the clusters having the best fit for the region and the highest propensity for success.

<b>Table 1: Economic Development Clusters/Target Industries: Identified by Region</b>	
<b>Region</b>	<b>Clusters/Target Industries</b>
<b>Tucson, AZ<sup>1</sup></b>	<ul style="list-style-type: none"> <li>&gt; Aerospace, Manufacturing &amp; Information Technology</li> <li>&gt; Bioindustry</li> <li>&gt; E-Learning</li> <li>&gt; Nanotechnology</li> <li>&gt; Optics</li> </ul>
<b>Phoenix, AZ<sup>2</sup></b>	<ul style="list-style-type: none"> <li>&gt; Advanced Business Services</li> <li>&gt; Aerospace</li> <li>&gt; Bioindustry</li> <li>&gt; High-Tech</li> <li>&gt; Life Sciences</li> <li>&gt; Software</li> </ul>
<b>Austin, TX<sup>3</sup></b>	<ul style="list-style-type: none"> <li>&gt; Automotive</li> <li>&gt; Biomedical &amp; Pharmaceuticals</li> <li>&gt; Clean Energy Technologies</li> <li>&gt; Digital Media &amp; High Tech</li> <li>&gt; Distribution &amp; Logistics</li> <li>&gt; Semiconductor</li> <li>&gt; Wireless</li> </ul>
<b>Orlando, FL<sup>4</sup></b>	<ul style="list-style-type: none"> <li>&gt; Agri-technology</li> <li>&gt; Aviation &amp; Aerospace</li> <li>&gt; Digital Media/Interactive Entertainment</li> <li>&gt; Financial Services</li> <li>&gt; Information Technology</li> <li>&gt; Life Sciences/Medical Technologies</li> <li>&gt; Microelectronics/Nanotechnology</li> <li>&gt; Modeling, Simulation &amp; Training</li> <li>&gt; Optics &amp; Photonics</li> <li>&gt; Sustainable Energy</li> </ul>
<b>San Diego, CA<sup>5</sup></b>	<ul style="list-style-type: none"> <li>&gt; Communications</li> <li>&gt; Computer &amp; Electronics Manufacturing</li> <li>&gt; Defense &amp; Transportation Manufacturing</li> <li>&gt; Life Sciences</li> <li>&gt; Software &amp; Computer Services</li> </ul>
<p>Source:</p> <ol style="list-style-type: none"> <li>1. Southern Arizona High-Tech Connection, 2006.</li> <li>2. Greater Phoenix Economic Council, 2006.</li> <li>3. Greater Austin Chamber of Commerce, 2006.</li> <li>4. Florida High Tech Corridor, 2006.</li> <li>5. San Diego Regional Economic Development Corporation, 2006.</li> </ol>	

When reviewing the top employers in each market, greater Tucson has a distinct advantage in having a company of Raytheon Missile Systems' caliber with such a significant presence in the region. As seen in Table 2 below, out of the top five corporate employers for each market, Austin has a distinct advantage in terms of primary

employers with the presence of Dell Computer Headquarters. The other three markets, including Phoenix, have significant tourism and health care related employers. Wal-Mart is the largest private employer in Arizona, with 28,000+ full time equivalents. The retail giant also is the largest private employer in 25 other states.

<b>Table 2: Top Five Corporate Employers</b>			
	<b>Company</b>	<b>Employees</b>	<b>Headquarter Location (X)</b>
<b>Tucson, AZ<sup>1</sup></b>	Raytheon Missile Systems	10,756	
	Wal-Mart Stores	4,980	
	Phelps Dodge Mining Company	4,123	
	Carondelet Health Network	3,751	
	TMC HealthCare	3,276	X
<b>Phoenix, AZ<sup>2</sup></b>	Wal-Mart Stores, Inc.	28,246	X
	Banner Health Systems	19,250	
	Wells Fargo Company	11,533	
	Honeywell Aerospace	10,700	X
	Intel Corp.	10,100	
<b>Austin, TX<sup>3</sup></b>	Dell	17,000	X
	IBM Corp.	6,000+	
	Seton Healthcare Network	6,000+	
	Advanced Micro Devices	6,000+	
	Applied Materials	6,000+	
<b>Orlando, FL<sup>4</sup></b>	Walt Disney Co.	56,800	
	Adventist Health System (Florida Hospital)	22,637	X
	Wal-Mart Stores, Inc.	18,650	
	Publix Super Markets, Inc.	16,897	
	General Electric Co. (Universal Orlando)	13,000	
<b>San Diego, CA<sup>5</sup></b>	Sharp Healthcare	13,175	X
	Scripps Health	10,617	X
	Kaiser Permanente	7,121	
	Qualcomm, Inc.	6,400	X
	Sempra Energy	5,442	X
Sources: 1. Tucson Regional Economic Opportunities, 2006. Note: Wal-Mart figure is a % of figure reported under greater Phoenix. 2. <i>The Business Journal Book of Lists</i> , Greater Phoenix Economic Council, 2006. <b>Note:</b> Figures total <u>Arizona</u> employment. 3. Greater Austin Chamber of Commerce, 2006. 4. <i>Orlando Sentinel</i> , 2006. <b>Note:</b> <i>Orlando Sentinel</i> states that several companies with large workforces did not respond or report employment figures. 5. San Diego Regional Economic Development Corporation, 2006.			

## Marketing Strategies and Best Practices

Surprisingly, the four markets reviewed have very traditional economic development marketing programs, if any at all. They are fairly unsophisticated in that they utilize old economy approaches, including trade show attendance and direct mail, among others, for their marketing efforts. Of the competitor markets, only Orlando uses new technology and innovative techniques in advertising. The Metro Orlando Economic Development Commission is very aggressive in conducting personal sales calls to out of state firms. One of their top business development professionals is on the road 47 out of 52 weeks a year. This is the level of relationship development that is required to generate the portfolio of qualified prospects currently held by the EDC. The Greater Austin Chamber of Commerce is also aggressive with respect to personal sales calls to out of state firms. In addition, the Chamber regularly identifies between 15 to 20 firms that are not in the region but are prime targets. The Chamber then actively engages its private sector leadership and members to place calls to these targeted prospects. Those individuals also are responsible for cultivating and maintaining the customer relationship management with these firms.

What has occurred with two of the major competitors markets is a greater focus on sustainability and quality of life issues. San Diego's seminal *Indicators of Sustainable Competitiveness: A Quality of Life Index* has become the economic development doctrine for that region. Greater Austin has similar initiatives, including the *Austin Sustainable Communities Initiative* and the *Envision Central Texas* project, both of which are public/private collaborations to strengthen and enhance the quality of life for future generations to come. A review of similar initiatives on the Internet indicates that more than 20 states and at least 11 other regions have sustainability agendas that currently are either under development or in the stage of implementation.

In contrast to greater Austin, greater Tucson has had a long history of environmental and sustainable community initiatives. This rich tradition can also be integrated into TREO's economic development strategy and marketing endeavors. Blue chip corporate giants and smaller knowledge economy enterprises alike are on a mission to demonstrate their corporate social responsibility. Many are investing in "green" and/or "sustainable" communities. This is an opportunity worth exploring.

In terms of best practices for marketing, it was difficult to ascertain from the competitor markets their assessment of the best practices they deploy in the execution of their responsibilities. Both TREO and the Metro Orlando EDC cited their highly trained and experienced staffs. Clearly, TREO has a decided advantage as an authentic "one-stop" shop. Metro Orlando maintains that its state of the art internal technology is a decided advantage and a best practice in the economic development field. All three competitor organizations cited their highly engaged and ardent corporate and business leadership, specifically the extent to which they actively participate in the economic development outreach. The San Diego Regional EDC referred to the Sustainability Index and how that has helped to re-energize and galvanize the top corporate and entrepreneurial leadership of that region to engage in economic development. Finally, both TREO and San Diego Regional EDC cited their respective databases and market intelligence as best practices.

## Top Locations/Expansions

Although there is an emerging trend of using more qualitative factors when measuring the success of economic development organizations, in the final analysis, investors and politicians look at the number of jobs and brand names of companies that these entities have "won" for their communities. TREO's performance stands in good stead when compared to its strategic competitors in terms of these criteria. It is interesting to note that the San Diego

Regional Economic Development Corporation compiled a list of locates/expansions only after persistent requests for this data. As noted previously, that EDC does not keep score in the traditional

sense of the profession. TREO's performance as compared to its competitors in Austin, Orlando and San Diego can be seen in Table 3.

<b>Table 3: Top Five Locations/Expansions by Employment 2004/2005/2006</b>				
<b>Region</b>	<b>Locate or Expansion</b>			
	<b>Name</b>	<b>Type</b>	<b>New Jobs</b>	<b>Capital Investment</b>
<b>Tucson AZ<sup>1</sup></b>	Citigroup	Information Technology-Teleservice	1,000	N/A
	GEICO	Information Technology-Teleservice	600	N/A
	Pella Corporation	Vinyl Windows and Doors	450 <sup>a</sup>	\$20 million
	United Collection Bureau	Accounts Receivable Management	450 <sup>a</sup>	\$3.5 million
	APAC	Information Technology-Teleservice	400	N/A
<b>Phoenix AZ<sup>2</sup></b>	CSAA	Business Services – Back Office/Call Center	1,500	\$21.3 million
	Mountain View Medical Center	Hospital – Healthcare	1,100	\$115 million
	Arizona State Saving	Back Office	480	\$14.3 million
	PayPal	Business Services – Back Office/Data Center	400	\$5 million
	Corinthian College	Business Services – Back Office/Call Center	250	\$1 million
<b>Austin TX<sup>3</sup></b>	Samsung	Semiconductor Chip Manufacturing	900	N/A
	Advanced Micro Devices	Semiconductor-Chip Manufacturing	300+	N/A
	Hewlett-Packard	Data Centers	280	N/A
	Motorola	Wireless Software/Mobile Platforms R&D	150	N/A
	Resnik Group	Audit/Accounting Services	150	N/A
<b>Orlando FL<sup>4</sup></b>	CuraScript Pharmacy, Inc	Pharmaceutical Distribution	350	\$12.6 million
	Staples	N/A	340	\$4.4 million
	Science Applications International	Simulation Firm	300	N/A
	Burnham Institute for Medical Research	Scientific Research/Innovation	300	N/A
	SAIC	N/A	300	\$14.5 million
<b>San Diego CA<sup>5</sup></b>	Biogen Idec	Biotech	400	N/A
	Gemini Science/La Jolla Institute for Allergy & Immunology	Biotech	350+	N/A
	Sony Electronics	Consumer Electronics	200-300	N/A
	LightPointe, Inc. <sup>b</sup>	Wireless	110	N/A
	Tanox, Inc.	Biotech	80	N/A
Sources: 1. Tucson Regional Economic Opportunities, 2006. <b>Note:</b> (a) indicates # of planned jobs.				

2. Greater Phoenix Economic Council, 2006.
3. Greater Austin Chamber of Commerce, 2006.
4. Orlando Economic Development Commission, 2006. Expansion Management online 2006.
5. San Diego Regional Economic Development Corporation, 2006. **Note:** (b) LightPointe is a corporate HQ relocation.

## IV. Comparative Assessment of Primary Location Attributes

The globalization of the economy has brought innovation to the forefront of corporate agendas. Innovation today is one of the fundamental drivers of business models, business strategy and business location. Companies recognize that the U.S. no longer has a monopoly on innovation. Large corporations emerging in China, India, Russia and Brazil and beyond are rapidly advancing in their industry sectors. These new world players are able to either innovate or copy innovative solutions and products and deliver them far more affordably than many American blue chip companies.

According to IBM's 2006 Global CEO Study as well as recent studies from the Business Higher Education Forum, innovation is a major focal point for CEOs and government leaders worldwide. Not only are CEOs committed to innovation as a major driver for the profitable growth of their own firms, but leaders in both the private and public sectors realize that innovative solutions will be essential to address many of the challenges confronting society today - from medicine to education to consumer products.

Consequently, the availability of intellectual capital and all that this brings with it – entrepreneurship, innovation, education, technology, accessibility – will remain a primary factor in where firms determine it is in their best interest to locate. Access to research, education, technical talent and scientific discovery is inextricably linked to economic growth. For greater Tucson, this means that more than ever, the region needs to focus on ensuring that its competitive standing in the intellectual capital arena ranks among the best of the best U.S. locations.

## Workforce

For most economies, the most important measure of economic development today is the availability and skill levels of people and the opportunities that arise from their participation in the economy of tomorrow. It is the development and use of talent that ultimately decides the fates of regions and nations. It is at the regional level where talent development, retention and recruitment spur economic growth and competitiveness. The best economic development organizations today are keenly focused on creating environments and building capacity to produce the type of talent that every company wants to hire. This imperative is critical to the success of economies.

Greater Tucson has a very favorable position vis-à-vis its strategic competitors in terms of its workforce. As cited earlier, the region's workforce composes approximately half of its population base. The large Latino/Hispanic concentration of worker-age residents is a decided plus, and TREO fully understands how advantageous these demographics are to its ability to successfully retain and recruit employers. The workforce characteristics of greater Tucson and its strategic competitors are depicted in Table 4.

In terms of available workforce (sheer numbers), the differences between greater Tucson and these strategic competitor markets are very apparent. This suggests that TREO needs to greatly expand its definition of labor market shed as it positions itself to prospects. For example, with the presence of two very large military installations, there inevitably are many service personnel who are retiring or separating from the service when their tours of duty are complete. Tying into this human capital resource base could be a distinct competitive advantage for greater Tucson. Retaining those individuals and connecting them to the community and job economy in a substantive manner would enable TREO to significantly expand its competitive position in terms of available work force.

The following table is a comparative analysis of how greater Tucson and its primary economic development and intellectual capital resources fare when compared with those of Austin,

Orlando and San Diego. In all cases, Phoenix's ranking has been added as a point of reference only

<b>REGION:</b>	<b>Tucson, AZ<sup>1</sup></b>	<b>Phoenix, AZ<sup>2</sup></b>	<b>Austin, TX<sup>3</sup></b>	<b>Orlando, FL<sup>4</sup></b>	<b>San Diego, CA<sup>5</sup></b>
<b>Employment / Unemployment</b>	<b>Figures Year: 2005</b>	<b>Figures Year: 2005</b>	<b>Figures Year: 2005</b>	<b>Figures Year: Aug. 05 to Aug. 06</b>	<b>Figures Year: 2005</b>
Labor Force / Employment #	257,686 / 234,815	1,832,500 / 1,743,100	805,825 / 771,004	1,067,062 / 1,032,408	1,505,200 / 1,440,500
Unemployment	18,860	74,300	34,821	34,654	64,700
<b>Employment by Industry</b>	<b>Industry Figures: 2005</b>	<b>Industry Figures: 2005</b>	<b>Industry Figures: 2005</b>	<b>Industry Figures: 8/05 – 8/06</b>	<b>Industry Figures: 2005</b>
Construction, Mining, Natural Resources	24,989	163,100	40,100	85,800	91,800
Educational, Health Services	54,469	178,900	71,600	104,800	N/A
Financial Activities (FIRE)	13,305	145,600	40,900	66,400	83,200
Government	13,014	208,800	149,900	114,100	214,800
Information	3,665	32,900	21,600	27,300	N/A
Leisure, Hospitality	26,141	165,800	69,600	193,400	N/A
Manufacturing	17,457	132,200	57,200	46,600	104,200
Other Services	11,487	65,500	26,800	50,500	568,800 <sup>f</sup>
Professional, Business Services	26,748	295,900	93,900	194,200	N/A
Retail Trade	29,622	N/A	72,700	123,400	146,900
Transportation, Warehousing, Utilities	8,063	354,500 <sup>b</sup>	11,500	27,500	34,900
Wholesale Trade	6,135	N/A	37,400	46,900	43,700
<b>New Labor Market Entrants (Enrollment in Four-Year</b>	<b>34,300<sup>a</sup></b>	<b>227,043<sup>c</sup></b>	<b>84,630<sup>d</sup></b>	<b>45,090<sup>e</sup></b>	<b>105,083<sup>g</sup></b>

University					
<p>Sources:</p> <p>1. US Census Bureau, American Community Survey, 2005; Tucson Regional Economic Opportunities, 2006. (a) figure relays Spring 06 enrollment at UofA.</p> <p>2. Arizona Department of Economic Security and Bureau of Labor Statistics, Greater Phoenix Economic Council, 2006; (b) figure includes services providing trade. (c) Source: US Census Bureau, 2005.</p> <p>3. Texas Workforce Commission, Greater Austin Chamber of Commerce, 2006. (d) Source: Texas Higher Education Coordinating Board &amp; US National Center for Education Statistics, 2005; figure relays Fall 05 enrollment in all greater Austin four-year universities/colleges.</p> <p>4. Orlando Economic Development Commission, Agency for Workforce Innovation, 2006. (e) Source: University of Central Florida (UCF); figure relays Fall 05 enrollment at UCF.</p> <p>5. California Employment Development Dept 2005 Benchmark (not seasonally adjusted), 2006. American Community Survey, 2004. San Diego Regional Economic Development Corporation, 2006. Note: (f) indicates figure includes Health, Leisure and Other Services categories. (g) Source: California Department of Education, 2006; California Postsecondary Education Commission, 2006 (includes 2005 data for public and 2004 data for non-public institutions).</p>					

The Milken Institute’s 2005 Best Performing Cities Index provides another important glimpse into greater Tucson’s competitiveness in terms of workforce productivity. In this analysis, the Milken Institute utilized such critical success factors as total five year job

growth and high tech GDP as measures of high performing economies, based on workforce quality and productivity. Again, in this prestigious ranking, greater Tucson performed admirably against its top three competitors as seen in Table 5.

Region	2005 Rank	2004 Rank	5 Year Job Growth 1999-2004 2004 Value / Rank	High-Tech GDP LQ 2004 Value / Rank	Overall Index
Tucson, AZ	14	17	104.74 / 53	1.68 / 16	209.30
Phoenix, AZ	15	3	107.76 / 28	1.44 / 35	209.87
Austin, TX	58	64	102.87 / 72	1.75 / 14	431.30
Orlando, FL	6	29	108.78 / 25	.94 / 70	165.60
San Diego, CA	29	16	107.12 / 33	1.63 / 19	303.94

Source: Milken Institute, *Best Performing Cities Index 2005: Where America’s Jobs are Created and Sustained*, February 2006.

## Higher Education

Public policy makers, CEOs, economic developers and educational experts have suggested that the role of higher education in a knowledge-driven economy has never been more important as innovation and human capital become central to economic growth. For emerging regions such as greater Tucson, the presence of higher education resources plays an even more important role. The region is competing with other world-class centers of human capital and innovation that historically have placed a premium on these factors to propel their economic growth. Recently, the Massachusetts Institute of Technology (MIT) and the University of Cambridge in the United Kingdom created a consortium to examine universities, innovation and the competitiveness of local economies. At the core of the MIT project's work is the premise that local economies succeed when firms are able to respond to changing market conditions by producing new products, services and production methods. The university has a fundamental role and major contributions to creating these conditions.

The presence of top ranked universities that are research driven and able to develop and graduate competent talent is paramount to all business, regardless of sector or national origin. This is even more relevant for knowledge-driven companies that are competing in the global marketplace. Increasingly, communities across the nation and around the world are striving to improve post-secondary offerings within their own borders. For example, in China alone, more than 50 new public universities are either in planning stages or under development. India's Institute of Technology – world renown for graduating the best software engineers in the world and considered more deferentially than MIT – is expanding its institution to accommodate the 250,000 computer software engineers it wants to produce over the next several years.

In terms of greater Tucson and its key competitors, there are several tables depicted below that provide the most recent ranking information of the major four-year institutions that operate in these markets. Of significant importance to the greater Tucson region and to TREO's ability to effectively and successfully market to employers that provide sustainable and high quality job offerings is the perception and standing of The University of Arizona. Based on the most universally accepted rankings of four-year and postgraduate degree institutions, The University of Arizona has received very high status. In its September 23 edition, *The Arizona Republic* published a page A-1 story on the importance of these rankings and the measures that The University of Arizona took over the past few years to improve its standing.

As depicted in Table 6, this particular ranking of top 500 universities by the Shanghai Jiao Tong University's Institute for Higher Education is considered one of the most prestigious such rankings in the world. The University of Arizona ranks in the top 100 of the top 500 universities – a standing that is very favorable when compared to Phoenix and Orlando. In the more popular *U.S. News and World Report* annual rankings (as seen in Table 7), again, The University of Arizona emerged this year in the top 100. Neither Arizona State University nor the University of Central Florida ranked sufficiently high to be included in the overall top 100 ranking for public universities.

However, in reviewing the public university science ratings, a different picture emerges. The University of Arizona received above average rankings in the major areas of strength and quality in the sciences as noted in Table 8. While the University of Central Florida is that state's second largest public university, the institution itself does not merit rankings in any of the categories evaluated by U.S. News and World Report. Regardless of methods utilized to attain higher and continuously improved scores, as noted in the September 23 *Arizona Republic* article on the University of Arizona's efforts to raise its rankings, the fact

remains that greater Tucson's most important post-secondary resource merits rankings in the top 50 of public universities. This standing provides a decided comparative advantage for TREO.

<b>Table 6 Academic Rankings of World Universities –Top 500</b>	
<b>Region</b>	<b>Rank</b>
<b>Tucson, AZ</b> University of Arizona	76
<b>Phoenix, AZ</b> Arizona State University	100
<b>Austin, TX</b> University of Texas - Austin	39
<b>Orlando, FL</b> University of Central Florida	358
<b>San Diego, CA</b> University of California-San Diego	13
Source: Institute of Higher Education; Shanghai Jiao Tong University, 2006.	

**Table 7: Higher Education Institutions: Rankings by Area**

<b>Region</b>	<b>Top Schools Rank</b>	<b>Financial Resources Rank</b>	<b>Business Program/School Rank (undergrad/grad)</b>	<b>Engineering Program/School Rank (undergrad/grad)</b>	<b>Law School</b>	<b>Medical School (Research /Primary Care)</b>	<b>Education Program</b>
<b>Tucson, AZ</b> University of Arizona	98	80	21 / 57 (Eller)	48 / 52	43 (Rogers)	57	53
<b>Phoenix, AZ</b> Arizona State University	Not Ranked	Not Ranked	23 / 34 (Carey)	39 / 47 (Fulton)	53	Not Ranked	Not Ranked
<b>Austin, TX</b> University of Texas - Austin	47	104	7 / 18 (McCombs)	11 / 13	16	Not Ranked	15
<b>Orlando, FL</b> University of Central Florida	Not Ranked	Not Ranked	143	97	Not Ranked	Not Ranked	Not Ranked
<b>San Diego, CA</b> University of California-San Diego	38	27	Not Ranked	19 / 11 (Jacobs)	Not Ranked	14/ 33	Not Ranked

Source: *US News & World Report*, 2007 National College/Program Rankings, 2006.

<b>Table 8: Higher Education Institutions: Ranking of Strength/Quality in the Sciences*</b>						
<b>Region</b>	<b>Biological Sciences PhD</b>	<b>Chemistry PhD</b>	<b>Computer Sciences PhD</b>	<b>Earth Sciences PhD</b>	<b>Mathematics PhD</b>	<b>Physics PhD</b>
<b>Tucson, AZ</b> University of Arizona	36	38	40	8	42	35
<b>Phoenix, AZ</b> Arizona State University	56	49	51	31	63	55
<b>Austin, TX</b> University of Texas - Austin	24	9	9	9	15	11
<b>Orlando, FL</b> University of Central Florida	Not Ranked	Not Ranked	Not Ranked	Not Ranked	Not Ranked	Not Ranked
<b>San Diego, CA</b> University of California-San Diego	12	18	13	15	21	16
Source: <i>US News &amp; World Report</i> , 2007 National College/Program Rankings, 2006.						

When compared to the University of California - San Diego and the University of Texas – Austin in the quality of science Ph.D. programs, The University of Arizona still performs above average (50) but well below these two institutions with the exception of the Earth Sciences Ph.D. degree program. To be effective in attracting and keeping both firms and talent in these key areas of science, the University will need to improve its standing in these areas. This is especially important for both greater Tucson and TREO if the region and organization seek to fully optimize the biosciences initiatives that have become center stage for Arizona’s economic development.

### **Entrepreneurship and Venture Capital**

Entrepreneurship commonly is defined as the pursuit of opportunity - that is, entrepreneurs see opportunities, often where others only see obstacles and they pursue these opportunities by finding ways to mobilize needed resources. According to its 2005 *Small Business Economy Report to the President*, the U.S. Small Business Administration, entrepreneurship has become the driving force in the U.S. economy. Today, entrepreneurial small businesses are responsible for the majority of innovations as well as new job growth in the U.S. economy.

In the economic development arena, especially at the regional level, entrepreneurship has gained preeminence in the quest to

generate sustainable and high performance economies. With the increasing criticism of tax and subsidy approaches aimed at attracting external capital, an entrepreneurship model of economic development provides a compelling alternative, offering regions the opportunity to “grow their own.”

Today, sustainable economic development does not occur in the absence of entrepreneurship. In fact, the linkage between a knowledge-based economy and entrepreneurship is self-evident. Many successful knowledge-based regional economies can be directly correlated to one or two specific entrepreneurs. Once established, they often act as fertile seedbeds from which new entrepreneurs emerge. Developing a competitive economic development position must include strategies for promoting entrepreneurship, supporting the growth of new ventures and creating a climate that attracts venture capital.

Arizona’s economy ranks highly among the 50 states in terms of entrepreneurial activity. It comes as no surprise that Texas, Florida and California rank on par or better than Arizona. One very credible source of comparison is the data offered by the Ewing and Marion Kauffman Foundation, which has seeded most university entrepreneurship degree programs in the U.S. and is now taking its reach to higher education institutions around the world. In the Kauffman index of entrepreneurial activity by state, it is clear that Arizona’s rank is strong (Table 9).

<b>Table 9: Kauffman Index of Entrepreneurial Activity by State 2004-2005</b>						
	<b>2005</b>			<b>2004</b>		
	<b>Index</b>	<b>Confidence Interval Lower / Upper</b>	<b>Sample Size</b>	<b>Index</b>	<b>Confidence Interval Lower / Upper</b>	<b>Sample Size</b>
<b>Arizona*</b>	0.32%	0.19% / 0.44%	7,849	0.33%	0.19% / 0.47%	8,208
<b>Texas</b>	0.35%	0.28% / 0.42%	28,656	0.37%	0.29% / 0.44%	27,019
<b>Florida</b>	0.28%	0.21% / 0.35%	24,062	0.30%	0.23% / 0.37%	23,566
<b>California</b>	0.32%	0.27% / 0.37%	46,674	0.39%	0.33% / 0.45%	42,165

Source: Kauffman Index of Entrepreneurial Activity State Report, 2005.  
Notes: (1) Estimates calculated by Robert W. Fairlie, University of California, Santa Cruz, using the Current Population Survey. (2) The index of entrepreneurial activity is the percent of individuals (ages 20-64) who do not own a business in the first survey month that start a business in the following month with 15 or more hours worked per week. (3) All observations with the allocated labor force status, class of worker, and hours worked variables are excluded. (4) Approximate 95 percent confidence intervals for the index for each state are reported.

\*Note: While the Arizona rankings look good, Tucson is deficient in capital (seed, venture, etc.) and other areas. There is a lot of work to make the culture more supportive to entrepreneurial ventures and more to do to make people in the community more aware of what it takes to be considered a “competitive” entrepreneurial community.

Another universally accepted source of rankings for entrepreneurship is found in the PricewaterhouseCoopers’ and National Venture Capital Association’s annual ranking of venture capital. As seen in Table 10, Arizona is virtually unaccounted for, with a mere .7 percent of all venture capital invested from 1995-2005. While the state’s entrepreneurial rankings and small business formation rates are exceedingly high, Arizona’s ability to capture venture capital has fared poorly, due in large measure to the historic absence of a concentration of the types of firms that

traditionally attract these funds, namely biosciences and software and other high value added technology commercialization. Of course, with the advent of TGen, the Arizona Biosciences Road Map initiative, the Science Foundation of Arizona and the anticipated arrival and/or formation of bioscience firms, Arizona’s ranking will improve over the years. However, this ranking source is one of the foremost such rankings in the world, and this poor showing does not provide a favorable image in this critical measurement.

<b>Table 10: Venture Investments by State</b> <b>PricewaterhouseCoopers/National Venture Capital Association</b> <i>in millions of dollars</i>			
	<b>2005</b>	<b>11-Year Total</b>	<b>Percent</b>
<b>Arizona</b>	148.0	2,319.7	0.7%
<b>Texas</b>	1,068.9	19,472.7	5.7%
<b>Florida</b>	361.2	8,397.9	2.5%
<b>California</b>	10,219.5	143,376.2	42.1%
<b>United States</b>	21,680.0	340,581.4	100%

Sources: PricewaterhouseCoopers; National Venture Capital Association-Money Tree report; Thomson Financial, 1995-2005.

The Milken Institute, renowned for its research and assessment of the competitiveness of states and regions, recently published its first study of university-related biotech transfer and commercialization, factors that figure prominently in assessing the economic competitiveness of regional economies. In this seminal analysis, only the University of California – San Diego had comparable

rankings among greater Tucson competitor markets. The ranking is included because the Milken Institute intends to continue this analysis in the years to come, and it is instructive for both TREO and The University of Arizona in terms of moving forward in the biosciences arena (Table 11).

**Table 11: Innovation Pipeline: Commercialization Data Rankings**

	<b>Tucson, AZ</b> Univ. of Arizona	<b>Phoenix, AZ</b> Arizona State Univ.	<b>Austin, TX</b> Univ. of Texas-Austin	<b>Orlando, FL</b> Univ. of Central Florida	<b>San Diego, CA</b> Univ. of Calif. – San Diego (UCSD) OR University of California System (UCS)*
<b>Innovation Pipeline Rankings – Top 10</b>	<b>Rank/Data</b>	<b>Rank/Data</b>	<b>Rank/Data</b>	<b>Rank/Data</b>	<b>Rank/Data</b>
<i>Research Expenditure Total, 2000-2004</i>	Not Ranked	Not Ranked	Not Ranked	Not Ranked	<b>#1 (UCS) / \$2,488 million</b>
<i>Invention Disclosures, 2000-2004</i>	Not Ranked	Not Ranked	Not Ranked	Not Ranked	<b>#1 (UCS) / 927</b> <b>#8 (UCSD) / 260</b>
<i>Invention Disclosures Per Million Research Expenditures, 2000-2004</i>	Not Ranked	<b>#8 / 0.94 ratio</b>	Not Ranked	Not Ranked	Not Ranked
<i>Patents Filed, 2000-2004</i>	Not Ranked	Not Ranked	Not Ranked	Not Ranked	<b>#1 (UCS) / 709</b> <b>#10 (UCSD) / 172</b>
<i>Patents Filed Per Million Research Expenditures, 2000-2004</i>	Not Ranked	<b>#4 / 1.37 ratio</b>	Not Ranked	Not Ranked	Not Ranked
<i>Patents Filed Per Invention Disclosure, 2000-2004</i>	Not Ranked	<b>#3 / 1.46 ratio</b>	Not Ranked	Not Ranked	Not Ranked
<i>Patents Issued, 2000-2004</i>	Not Ranked	Not Ranked	Not Ranked	Not Ranked	<b>#1 (UCS) / 278</b>
<i>Patents Issued Per Million Research Expenditures, 2000-2004</i>	Not Ranked	<b>#8 / 0.18 ratio</b>	Not Ranked	Not Ranked	Not Ranked
<i>Licenses Executed, 2004</i>	Not Ranked	Not Ranked	Not Ranked	Not Ranked	<b>#2 (UCS) / 273</b>
<i>Licensing Income, 2000-2004</i>	Not Ranked	Not Ranked	Not Ranked	Not Ranked	<b>#1 (UCS) / \$107.8 million</b>
<i>Startups, 2000-2004</i>	Not Ranked	Not Ranked	Not Ranked	Not Ranked	<b>#2 (UCS) / 20</b>
<i>Startups Per Million Research Expenditures, 2000-2004</i>	Not Ranked	<b>#10 / 0.037 ratio</b>	Not Ranked	Not Ranked	Not Ranked
<i>Research Expenditure Total, 2004</i>	Not Ranked	Not Ranked	Not Ranked	Not Ranked	<b>#1 (UCS) \$2,708</b>
<i>Patents Filed, 2004</i>	Not Ranked	Not Ranked	Not Ranked	Not Ranked	<b>#3 (UCS) / 515</b> <b>#10 (UCSD) / 193</b>
<i>Patents Issued, 2004</i>	Not Ranked	Not Ranked	Not Ranked	Not Ranked	<b>#2 / 270</b>
<i>Patents Issued Per Patents Filed, 2004</i>	Not Ranked	Not Ranked	Not Ranked	<b>#7 / 11.82 ratio</b>	Not Ranked

Sources: AUTM/ASTP, *Mind to Market: A Global Analysis of University Biotechnology Transfer and Commercialization*, Milken Institute, September 2006.  
\* The University of California System (UCS) was the only Institution ranked among the five region comparison herein on Milken Institute's University Technology Transfer and Commercialization Index; UCS ranked 2 of 25; its overall score is 96.59.

In yet another significant ranking of venture capital, PricewaterhouseCoopers' annual Money Tree Report provides an instructive assessment of how Greater Tucson stands vis-à-vis other well-known knowledge economy markets. The point to be gained through this assessment is that only a few metropolitan areas are ranked as distinctive markets for much of this analysis. Instead, individual states and in most cases, multi-state markets are

ranked. This configuration is due to the fact that many states in the U.S. simply do not capture sufficient venture capital to warrant an individual ranking. The notable exceptions are many markets in California, including LA/Orange County, Sacramento/N. California. San Diego stands above the others in terms of distinctive single markets capturing substantial venture capital (Table 12).

<b>Table 12: PricewaterhouseCoopers MoneyTree Report</b>			
<b>Investments by Region / Q2 2006</b>			
<b>Regions Defined</b>	<b>Total \$ Invested</b>	<b>Average \$ Per Deal</b>	<b>Deals</b>
<b>ALL</b>	<b>\$6,720,394,900</b>	<b>\$7,534,075</b>	<b>892</b>
<i>Region:</i>	<i>Amount:</i>	<i>% of Total</i>	<i>Deals</i>
Silicon Valley	\$2368M	35.24%	300
New England	\$738M	10.99%	109
NY Metro	\$550M	8.18%	61
LA/Orange County	\$515M	7.66%	55
DC/Metroplex	\$462M	6.87%	55
Northwest	\$351M	5.22%	50
<b>Texas</b>	<b>\$346M</b>	<b>5.14%</b>	<b>48</b>
Southeast	\$294M	4.38%	54
Midwest	\$294M	4.37%	35
Philadelphia Metro	\$274M	4.08%	34
<b>San Diego</b>	<b>\$211M</b>	<b>3.14%</b>	<b>25</b>
Colorado	\$89M	1.32%	22
Southwest	\$87M	1.30%	14
North Central	\$69M	1.03%	12
South Central	\$39M	0.58%	4
Upstate NY	\$22M	0.32%	9
Sacramento/N. Cal	\$7M	0.11%	2
Unknown	\$3M	0.05%	1
AK/HI/PR	\$2M	0.03%	2
Sources: PricewaterhouseCoopers/National Venture Capital Association/Thomson Financial, <i>MoneyTree Report</i> , 2006.			

Moving to a regional market basis of comparative analysis, there are highly credible, independent national ranking sources that evaluate communities for their abilities and climates for business start-ups and entrepreneurial activity. The National Policy Research Council, a Washington, D.C. based independent think

tank, evaluates U.S. regions and cities on a variety of business climate factors. In its 2005 *Entrepreneurial Hot Sites*, greater Tucson was not included in the analysis. Table 13 depicts how the region's other primary competitors fared.

**Table 13: Best Places for Starting and Growing a Business 2006**

	Notable Start-Up Rank	Rapid Grower Rank	Overall Entrepreneurial Activity Rank	Total Number of Companies	Total Notable Start-Ups	Percent Notable Start-Ups	Notable Start-Up Sub-Index Score	Total Rapid Growers	Percent Rapid Growers	Rapid Growth Sub-Index Score	Overall Entrepreneurial Activity Index Score
<b>Tucson, AZ</b>	Not Ranked	Not Ranked	Not Ranked	Not Ranked	Not Ranked	Not Ranked	Not Ranked	Not Ranked	Not Ranked	Not Ranked	Not Ranked
<b>Phoenix, AZ</b>	1	2	1	190,953	12,388	6.49	99.65	3,824	2	99.29	100
<b>Austin, TX</b>	6	5	5	90,405	5,469	6.05	84.1	1,690	1.87	83.24	84.96
<b>Orlando, FL</b>	37	41	41	167,045	7,596	4.55	30.04	2,339	1.4	26.69	33.4
<b>San Diego, CA</b>	22	15	20	188,929	9,824	5.2	59.92	3,231	1.71	64.05	55.8
Source: Entrepreneurial Hot Sites, National Policy Research Council, 2005.											

In addition to the more academic/scholarly type rankings, there are other widely-known rankings published each year. One of the most popular is Inc. Magazine’s annual ranking of best cities for doing business. For its 2006 rankings, the key criterion utilized

was the number of entrepreneurs/small business owners. Yuma, Arizona received the top spot as “Overall Best City.” Table 14 provides rankings for greater Tucson and the strategic competitor markets.

<b>Table 14: Inc. Magazine’s BoomTowns: Best Cities for Doing Business – Entrepreneurs/Small Business Owners Rankings by Region 2006</b>					
<b>REGION:</b>	<b>Tucson, AZ</b>	<b>Phoenix, AZ</b>	<b>Austin, TX</b>	<b>Orlando, FL</b>	<b>San Diego, CA</b>
<b>Indicators:</b>	<b>Rank</b>	<b>Rank</b>	<b>Rank</b>	<b>Rank</b>	<b>Rank</b>
Overall Best Cities*	60	36	173	28	133
Best Large Cities	N/A	6	26	3	20
Best Midsize Cities	13	N/A	N/A	N/A	N/A
Source: * Yuma, Arizona was ranked #1 “Overall Best City”; <i>Inc. Magazine – BoomTowns</i> , May 2006.					

## V. Observations for TREO

For more than a generation, many economic development organizations have largely operated on auto-pilot, relentlessly pursuing the goal of growing and adding more jobs — whenever, wherever, whatever. In many cases, the unemployment rate was not a worry if some parts of the region were booming (leading to high housing prices and transportation congestion). It was of no concern if the companies receiving incentives provided low-paying, poor-quality jobs and were likely to leave for even greener pastures in a decade. The goal was simple: the more jobs, the better. But in many regions, an approach focused almost exclusively on getting more jobs did little to help residents earn higher incomes and enjoy a better quality of life.

In the global economy, the central focus of economic development is shifting from adding new jobs to boosting incomes and creating better jobs for all. Increasingly, economic development organizations are replacing or supplementing the standard metric of success, job creation, with a new one, income growth. Shifting the goal from getting big to getting prosperous requires shifting the focus from being low-cost to a focus of higher quality.

The World Economic Forum’s 2006 Global Competitiveness Index drives this point home. In its 2006-2007 Global Competitiveness Ranking released on September 26, the U.S. slipped from the top spot to number six in the list of competitive nations. Switzerland, Finland, Sweden, Denmark and Singapore ranked in the top five,

respectively, because of their good institutions, competitive macroeconomic management, world class educational attainment and emphasis on technology and innovation.

The lesson to be gleaned from this report is as follows: competitive economies require judicious governance, cooperation and collaboration between businesses, government and education at all levels and advanced technology and talent. No longer can the U.S. or any of its economic regions take for granted that their technological and human capital is superior and will outperform other nations and economies regardless of planning or forward thinking.

For TREO, the opportunities and challenges that lie ahead are both exciting and daunting. Exciting in the sense that the many assets and attributes that both the greater Tucson marketplace and TREO offer to the people and businesses that are intended to improve residents' livelihoods. Daunting from the standpoint that global competition is intensifying with the passage of each day; success will require swift and purposeful action.

Moving forward, the following observations are offered:

1. Greater Tucson needs to benchmark its excellence against the foremost strategic and successful competitor markets, and not against Phoenix.
2. Austin, Orlando and San Diego provide an outstanding basis for comparison as greater Tucson and TREO move forward with the development of its new blueprint for growth.
3. As an organization, TREO's private sector commitments in terms of leadership and financial

- investments need to be significantly strengthened to be on par with the three competitor organizations.
4. Significant additional dollars are needed for a best-of-class external marketing and sales program.
5. TREO's genuine "one-stop" structure is perhaps the best-of-the-best in terms of economic development organizations in the strategic competitor markets.
6. The University of Arizona needs to align its economic development initiatives with those of TREO; it is clear that the university-EDC relationship is not as strong in greater Tucson as in other markets.
7. TREO and greater Tucson will benefit enormously if direct links were made between job opportunities in the region and the armed forces personnel leaving/completing tours of duty at Davis Monthan Air Force Base and Fort Huachuca.
8. The development of a companion "sustainable community" initiative, in addition to TREO's economic development agenda, may galvanize more public and private leadership as well as increased financial investments.
9. TREO may consider best practice missions to both San Diego and Orlando, similar to the one that TREO led to Austin. The University of Arizona needs to be an integral part of the learning curve in these missions. Visits to the universities in these markets may be highly instructive.
10. There are many unparalleled opportunities for greater Tucson in terms of capitalizing on its proximity to the Phoenix and to Mexico. Ideas regarding these two opportunities are reflected in a separate discussion paper and the blueprint strategies.

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## Notes:

In Table 8, depicting the U.S. World and News Report 2007 rankings of scientific programs for the universities of the four markets, a specific methodology was utilized, described as follows:

**\*Sciences Methodology** rankings of doctoral programs in the sciences are based on the results of surveys sent to academics in each discipline during the fall of 2005. The questionnaires asked individuals to rate the quality of the program at each institution on a 5-point scale: outstanding (5); strong (4); good (3); adequate (2); or marginal (1). Individuals who were unfamiliar with a particular school's programs were asked to select "don't know." Scores for each institution were totaled and divided by the number of respondents who rated that school.

Surveys in the biological sciences, chemistry, computer science, the earth sciences, mathematics, and physics were conducted by Synovate. The universe of schools surveyed consisted of schools that awarded at least five doctoral degrees according to the National Science Foundation report "Science and Engineering Doctorate Awards" for the years from 1999 through 2004. In the biological sciences, graduate programs may be offered in a university's medical school as well as its college of arts and sciences. In those cases, the medical school's program was considered separately.

Questionnaires were sent to the department heads and directors of graduate studies at each program in each discipline. Response rates were as follows: for the biological sciences, 21 percent of those surveyed responded; for chemistry, 30 percent; for computer science, 52 percent; for the earth sciences, 40 percent; for mathematics, 40 percent; and for physics, 39 percent.

Specialty rankings are based on nominations by department heads and directors of graduate studies at peer schools from the list of schools surveyed. These respondents ranked up to 10 programs in each area.