

**CONNECT Index of Regional Innovation (CONNECT-dex)** – an index of new company launches in technology and life sciences in the San Diego region.

**Produced in partnership with the San Diego Institute for Policy Research and Roth Capital Partners**

San Diego's economy has become increasingly more dependent on the high-value, high-wage jobs created by technology and life science firms. The growing economic contribution from these sectors enables San Diego to effectively compete in the global economy. The vitality of the region's future economic output increasingly depends upon the growth and development of these technology and life science oriented companies.

While the technology and life science sectors appear to be generally vibrant in San Diego, a comprehensive measure of the number of these businesses created in the region has not been previously available. Although individual industry and trade associations track certain information and regional economic development agencies measure health overall, there is no quantifiable data available pertaining to the numbers of new technology-based businesses started in the region.

Having concrete information on the activities of new and entrepreneurial start-ups enables the many regional supporters of innovation to provide better, more targeted support for these nascent ventures. An index of technology and life science businesses serves as a counterpoint to negative news about companies leaving the region for any number of reasons. In addition, the availability of targeted data will enable the region's support organizations to more effectively track the cycles of growth and ensure that the region overall benefits by, and can capitalize upon, new start-up activity.

**CONNECT**, in partnership with the **San Diego Institute for Policy Research** (SDI), has developed a Technology Start-Up Index to measure the number of new technology-based companies in the San Diego region.

The aim of the CONNECT Index of New Technology Business ("CONNECT-dex") is to provide a comprehensive measure for the number of new businesses created in the high-technology and life science sectors in San Diego County. The index will:

- Enable supporters of innovation to provide better, more targeted support for these companies' nascent ventures;
- Enable the region's support organizations to more effectively track the cycles of growth and ensure that the region overall benefits from new start-up activity;
- Provide a balanced perspective on the dynamics of regional business cycles; and
- Provide a valuable indicator of the vitality of the region's knowledge economy.

**Defining the High Technology Industry**

As defined for the purposes of the index, the high technology industry sector covers knowledge-based industries at the cutting edge of technological research, innovation and development. The industry sector includes establishments such as technology manufacturers and communications service providers. Specifically, the technology industry is defined as including the following industry sectors:

- Research and Development in Physical, Engineering and Life Sciences;
- Biomedical Products;
- Biotechnology and Pharmaceuticals;
- Communications (Telecommunications);
- Computers and Electronics;
- Defense;
- Environmental Technology;
- Recreational Goods; and
- Software.

New listings will also be identified as either "product" or "service" companies so that regional supporters will have realistic expectations for their growth.

### **Research Data**

Data for the index is secured from both *Info USA* and *Dunn & Bradstreet*, which provide up-to-date information on new company creation.

InfoUSA registers new companies based primarily on new business filings recorded by County courthouses, while obtaining supplementary data through a number of additional sources, including business and legal journals, or utility transactions, such as electricity hook-ups.

Data received from Dunn & Bradstreet includes three business type files:

- Those described as "New to the World;" i.e., business entities that had not previously existed;
- Those described as "New to the File;" i.e., business entities that previously existed, but were new to the D&B file; and
- Those described as a "New Legal Entity;" i.e., all business entities that had recently changed their previous legal structure.

Although some of the companies described as "New to the File" or a "New Legal Entity" are not ultimately included in the CONNECT-dex, gathering this information is considered useful in making comparisons between the two data sources for the initial baseline development phase.

CONNECT had the support and cooperation of the California Secretaries of State and Labor in identifying appropriate data sources and providing baseline data – covering new corporate filings and first employee hiring which had been compiled statewide through 2005 – and providing a historical context. CONNECT retained Godbe Research, an innovative local research firm, for assistance in developing the initial research methodologies. Recently, CONNECT and the San Diego Institute for Policy Research (SDI) collaborated on the completion of the baseline index. At launch, the baseline report will index start-up activity for a full year, from Q3 2005 through Q2 2006. The first quarterly update, Q3 2006, is available at this time as well.

### **Research and Processes**

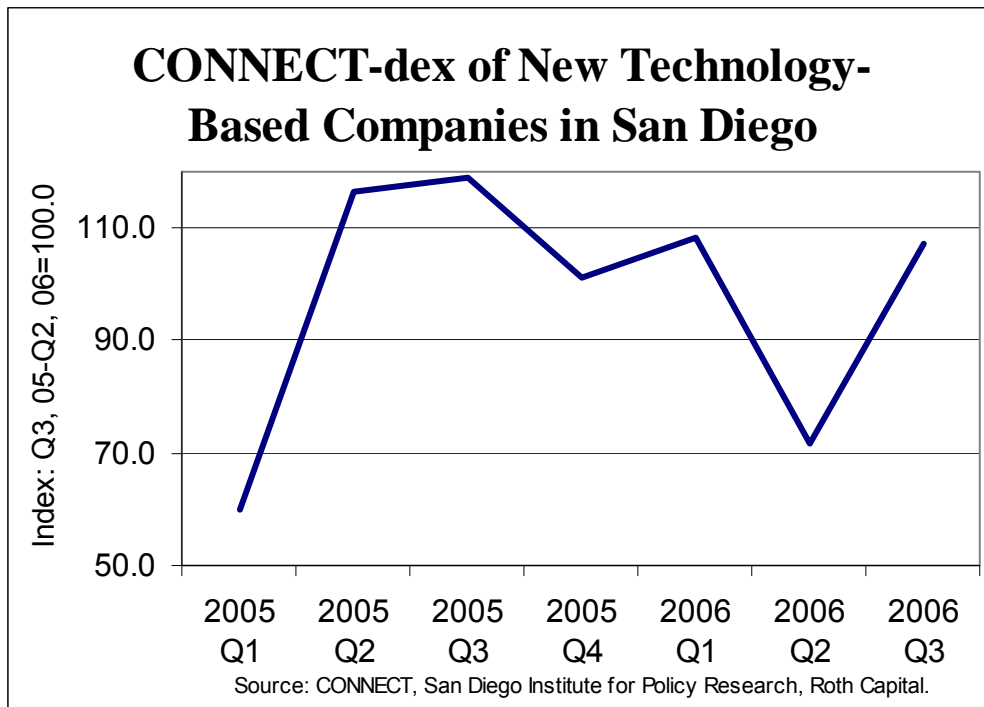
For the initial index, the assistance of professional researchers was secured in order to provide an accurate historical framework and establish a research methodology. In partnership with SDI, CONNECT developed processes for capturing new data and updating the index on a quarterly basis.

New technology firms are sorted within the listing to ensure that no duplications between the two data sets are included within CONNECT-dex.

Because both InfoUSA and Dunn & Bradstreet classify companies according to the former Standard Industrial Classification (SIC) system, certain categories that pertain to technology industries must be further examined to eliminate non-technology companies. This occurs in SIC categories that contain both technology and non-technology based businesses.

The most prominent SIC codes where this occurs is 8711 Engineering Services and 4899 Communications. While many of the companies in these categories are included in the index, many others are engaged in activities that are not defined as technology based.

### Index and Analysis



The index is based upon the average number of technology companies started in San Diego during the 3<sup>rd</sup> and 4<sup>th</sup> quarters of 2005, and the 1<sup>st</sup> and 2<sup>nd</sup> quarters of 2006. The average is set at 100.0, and compared to the number counted in each quarter.

The initial quarters of the index show a slowing trend in number of companies started during that time period, with a noticeable dip in the 2<sup>nd</sup> quarter of 2006. However, the changes may be partly due to seasonal variations. More or fewer companies may start operations during a particular time of the year because of tax requirements, school periods or other seasonal effects. As time goes on, we will be able to adjust the index for seasonal variations within the year in order to determine actual changes in level of activity.

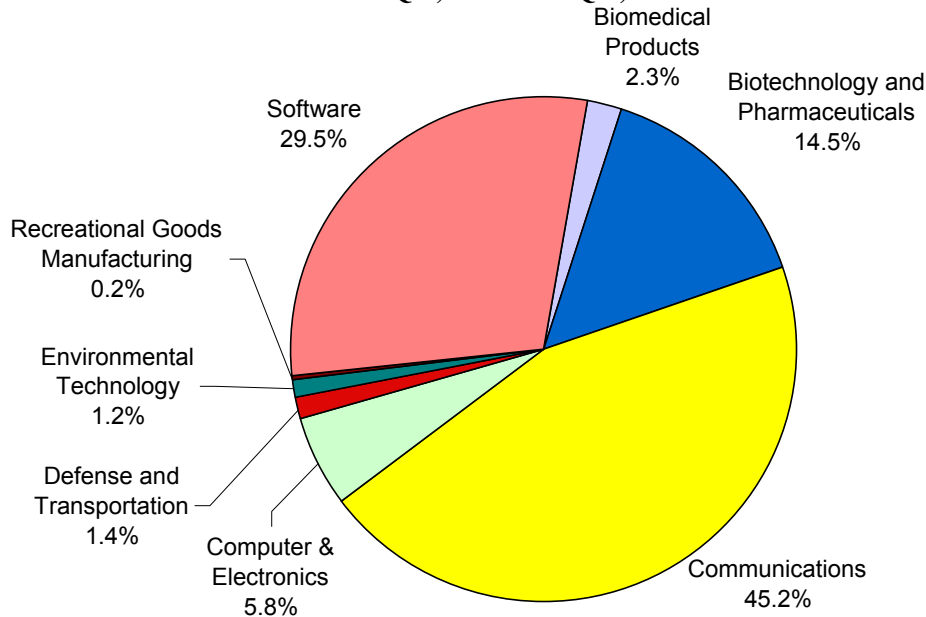
In the initial year of the index, the largest cluster of start-up technology companies was “communications” firms, primarily service providers for some activity of communication technology such as television, radio, mobile communications, internet service providers or other communications services. These companies represent 45 percent of the new technology firms started in San Diego between the 3<sup>rd</sup> quarter of 2005 and 2<sup>nd</sup> quarter of 2006.

Software and computer service providers account for the second largest portion of new technology firms. These start-up firms provide computer services, software design and development, or information technology. The companies account for nearly 30 percent of the new technology firms started in San Diego.

Biotechnology and pharmaceutical products represent the 3<sup>rd</sup> largest category of technology firms, including the research and development of such products. These companies represent 14.5 percent of San Diego’s new technology firms formed during the base year.

### **CONNECT-dex of New Technology- Based Companies in San Diego**

**3rd Qtr, 2005-2nd Qtr, 2006**



Research and production of biomedical products form the next largest cluster, with 2.3 percent of the new technology firms. Defense and transportation related technology firms represent 1.4 percent of the new firms, followed by environmental technology (1.2 percent) and recreational goods manufacturing (0.2 percent).

The start-up firms are located literally throughout the County of San Diego, from San Ysidro to San Luis Rey, and in Tecate, Alpine, or Julian. Not too surprisingly, the largest cluster is in the Sorrento Valley/Mesa and La Jolla/Torrey Pines areas, near the *University of California San Diego* campus and other prominent research institutions;

such as *The Scripps Research Institute*, *Salk Institute for Biological Studies* and the *Burnham Institute for Medical Research*.

Most of the new start-up firms provide technology oriented services in communications, computer science or engineering. Over the base-year period, 72 percent of the new firms fall into the category of service companies. The other 28 percent are product-oriented; they either produce or provide a product, or research and develop a product.

### **Future Outlook**

With San Diego's economic vitality and growth increasingly dependent upon the high-value, high-wage jobs created by technology and life science firms, this unique index will provide a key measurement of the region's potential for future economic output. As such, CONNECT-dex will help the community gain a better appreciation of the impact of its emerging businesses. The index provides quantitative validation that San Diego is one of the leading tech centers, not only in California and the nation, but in the world.