

# Hawaii's Technology Sector: 2001-2005

## Strong Growth in 2005 Breaks Three-Year Slide in Tech Jobs

### Highlights

- Private tech sector wage and salary jobs totaled 13,813 in 2005, up 5.4% from 2004 – a gain of 707 jobs (excludes self-employed).
- 2005 growth erased a loss of 357 jobs in the sector from 2001 to 2004, caused by cutbacks in technology services and manufacturing at the time.
- R&D activity has been the strongest component of Hawaii's private tech sector, with a 36% increase in jobs from 2001 to 2005 – nearly 4 times faster than all private sector job growth.
- The average wage in the technology sector was \$57,458 in 2005, 66% above the overall private sector average.
- Technology in 2005 represented 2.8% of all private sector jobs in Hawaii and 4.7% of total private sector wages and salaries, virtually unchanged from the previous years.

Newly developed data show that after several years of modest decline, wage and salary jobs in Hawaii's private technology sector increased 5.4% in 2005, to an estimated 13,813 jobs. This represents a one-year gain of over 700 jobs for the tech sector. The growth also exceeded the 3.9% gain for the private sector as a whole. There were 1,115 establishments in Hawaii's technology sector during 2005. The average wage for the sector was \$57,458 in 2005, 66% above the average for the private sector as a whole. The measure does not include the numbers or the income of self-employed workers in technology, which could not be measured.

It is estimated that all major components of the tech sector out performed the overall economy in 2005, including tech services, up 4.1%, Research & Development activity, up 9.3% and tech manufacturing, at an estimated 17.1% gain for the year.

During the three years before 2005, weaknesses in communications services, internet businesses and tech manufacturing dragged the sector down somewhat, despite solid gains in research and development, and other areas of growth in the technology sector. Jobs in the tech sector slipped from 13,463 in 2001 to 13,106 in 2004 before the boost in 2005.

### Research & Development Activity

Research and Development (R&D) activity has been the star growth area of high tech in Hawaii over the last four years, with a robust 36.1% increase from 2001 to 2005. R&D represented about 19% of total tech sector employment in 2005, or 2,600 jobs. About a third of private R&D jobs in Hawaii were accounted for by seed corn research in 2005.

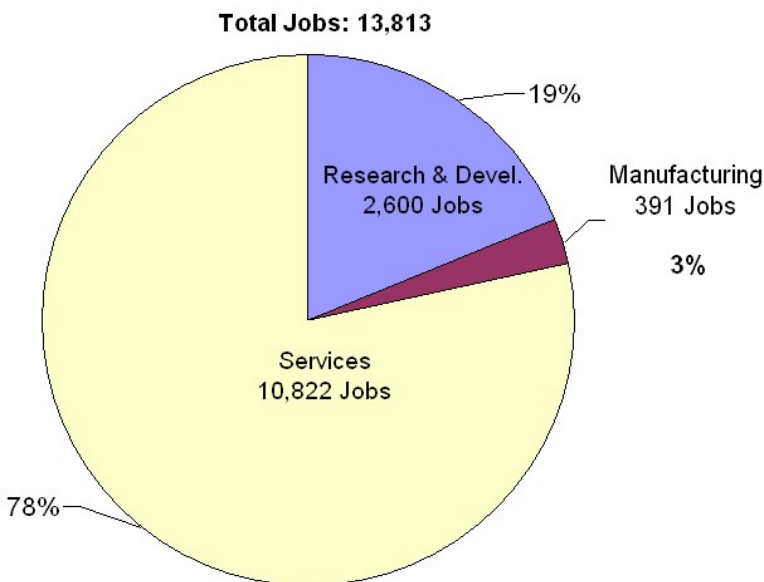
There were 149 reporting units in private R&D activity during 2005. These were mostly small firms with an average of about 17 paid employees per establishment. The average wage in R&D was \$56,942 in 2005, 65% above the average wage for the private sector as a whole, which was \$34,566 for the year. The average wage for R&D was up 4.3% over 2004. This compared with an overall 2.9% average gain for all private sector employees in 2005.

### Technology Services

Technology services include such activities as communications, software development, internet providers and testing laboratories. Tech services represent the largest component of Hawaii's private technology sector with 10,822 jobs in 2005, or 78% of all jobs in the tech sector.

Before the healthy growth in 2005, tech services had been experiencing overall declines in job levels, dropping 5% between 2001 and 2004. The weakness was primarily centered in the communications industry which lost nearly 1,200 jobs over that three year period. Communications gained

Technology Jobs by Type, 2005



back more than 50 of those jobs in 2005. Internet activity also lost jobs in the 2001-2004 period, and the decline continued into 2005. On the other hand, Computer systems design and testing/diagnostic laboratories showed consistent, strong gains over the entire 2001-2005 period.

There were 893 establishments in Technology Services during 2005. Despite a number of large firms in this area, the was an average of only 12 paid employees per establishment. The average wage in 2005 was \$58,120 for tech services.

**Technology Manufacturing**

The manufacture of technology products in Hawaii is a relatively small activity, with only 391 paid employees and 72 establishments in 2005. While tech manufacturing recorded a gain jobs for 2005, the job count declined by nearly 40% from 2001 to 2004. Most of that loss is likely due to the relocation of one large firm's manufacturing operations to the Mainland in 2002.

Despite the loss in tech manufacturing jobs, the number of *establishments* in this area has increased sharply, from 56 in 2001 to 72 in 2005. This suggests that potential new manufacturing activity is percolating under the surface. The average wage in tech manufacturing was \$42,552 in 2005. The average number of wage and salary jobs per establishment was just 5 employees in 2005, the lowest among the three major components of the tech sector.

**More Tech Sector Data Available On Line**

More data and information on Hawaii's technology sector is available on the DBEDT website at <http://www.hawaii.gov/dbedt/>.

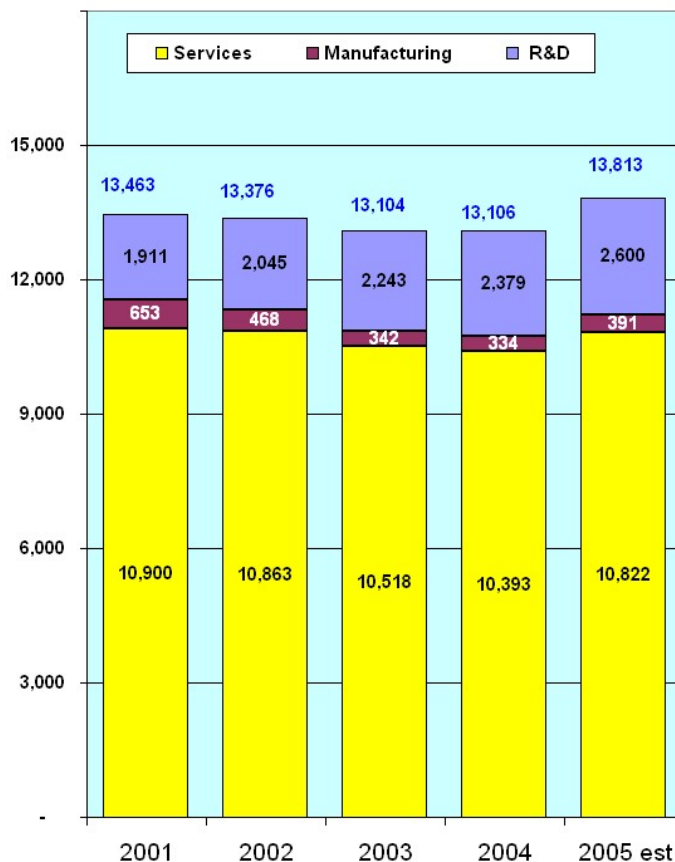
**ABOUT THE NEW DBEDT MEASURE OF TECHNOLOGY**

This new measure of technology uses data produced under the Federal/State Unemployment Insurance (UI) program. Federal and state government data programs such as UI, now use a new standard for organizing industry and employment data called the North American Industry Classification System, or NAICS. The UI program counts only wage and salary employees, not the self-employed.

Technology Sector Components	
I.	Scientific & Technological Research & Devel.
II.	Manufacture of Technology Products
	a. Medical & Pharmaceutical Mfg.
	b. Miscellaneous Technology Mfg.
III.	Technology Services
	a. Communications Services
	b. Computer Software Programming
	c. Internet Infrastructure & Services
	d. Testing and Diagnostic Labs & Facilities

A shortcoming in previous measures of Hawaii's tech sector was the difficulty of separating the *development* of

**Hawaii Technology Sector Jobs, 2001-2005**



technology from the *use* of high technology under the older, Standard Industrial Classification (SIC) system. Both the development and use of high technology are useful to measure, but they are very different activities. The new NAICS system allows us to identify major components of technology that represent a spectrum of the technology development process. At one end we can identify the core source of new technology, Scientific and Technological Research and Development. Next, we can isolate and measure the manufacture of technology products. Finally, we can identify separately the wide range of services that provide technology-based solutions that address business and consumer needs.

DBEDT incorporated valuable insight and input into construction of the new measure from partners such as the Hawaii Science and Technology Council, the High Tech Development Corporation, and Enterprise Honolulu. The core of the new measure is a group of 47, 6-digit NAICS industries identified by the American Electronics Association (AeA). An additional 19 detailed industries were added based on the recommendations of the partners noted above and DBEDT research. Data from 2001 to 2004 are based on 6-digit NAICS data for jobs, wages and employing units, from the Department of Labor and Industrial Relations. Estimated data for 2005 were based on U.S. Bureau of Labor Statistics files.

Future reports using the new data will focus on identifying technology specialties such as biotechnology, infotech, telecommunications and county-level technology activity.