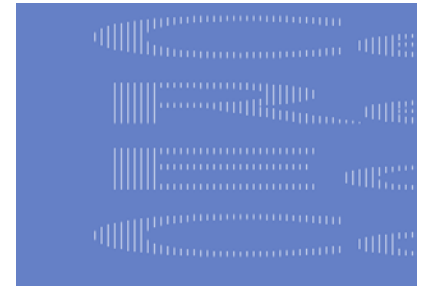




THE COUNCIL FOR COMMUNITY  
AND ECONOMIC RESEARCH



# Innovation and Technology In Hawaii: An Economic & Workforce Profile

October, 2008

House/Senate Joint EBM-EDT Informational Briefing  
January 28, 2009





**Ag Biotech**



**Astronomy**



**Life Sciences**



**Communications &  
Info Tech**



**Defense/Aerospace**

## 10 Converging Sectors

**Engineering**



**Environment**



**Film/Digital Media**



**Ocean Science**



**Energy**



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# Economic Data

## for Policy Makers and Stakeholders

- \$200,000 Legislative Grant-in-Aid 2006
  - Partnership with DBEDT
  - Contract with the Center for Regional Economic Competitiveness
-

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# A Phone Book of Hawaii's Science & Tech Goods and Services

[www.hiscitech.org/directory](http://www.hiscitech.org/directory)



- Home
- About Us
- Get Involved!
- Event Center
- Member Center
- Careers & Internships
- Public Policy & Advocacy
- Information Center
- Group Purchasing
- Become a Member
- E-Newsletter



Hawaii Student Television  
HISciTech's featured new member!



Bot Ball

Referentia is taking initiative in

## Hawaii Science & Technology Council

Welcome to the Hawaii Science & Technology Council's new dynamic portal of services. Along with our new logo comes a new name, HISciTech. Accordingly, we have expanded our existing services to include job, internship and resume posting and online registration for events.

The purpose of our new branding is to more clearly define to our members, our stakeholders and the community who we are. The Hawaii Science & Technology Council will be referred to as HISciTech, while maintaining Hawaii Science & Technology Council as our official title.

This is an exciting time to be a part of Hawaii's vibrant science & technology community. We encourage you to enquire about our numerous services & member benefits. As you use the new site, please [contact](#) us with feedback.

New: **Industry Directory** Hawaii's innovation and technology companys' online "Catalogue of Products & Services"

**Create** or **Update** your company's profile.

### SPONSORS



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### INDUSTRY DIRECTORY

**INDUSTRY DIRECTORY**

### THE INSTITUTE



# HISciTech INDUSTRY DIRECTORY

Overview

Statistics

Companies

Career Center

Education

Resources

## Company Search

Hawaii's Science & Technology Company Directory

Organization:

City:

Sectors:

- Agricultural Biotechnology
- Astronomy
- Biotechnology/Life Sciences
- Defense/Aerospace
- Energy
- Environmental
- Film/Digital Media
- Information/Communication Technology
- Ocean Sciences
- Other(s)

Search

## Search Results

758 matches found. Displaying results 1 to 10. < Prev [Next](#) > [[Show All](#)]



# HI SciTech INDUSTRY DIRECTORY

Overview

Statistics

Companies























Career Center

Education

Resources

## Search Results

65 matches found. Displaying results 1 to 10. < Prev Next > [Show All]

	 Agricultural Biotechnology	 Astronomy	 Biotechnology/ Life Sciences	 Defense/ Aerospace	 Energy	 Environmental	 Film/ Digital Media	 Information/ Communication Technology	 Ocean Sciences	 Other
<a href="#">21st Century Technologies</a> Honolulu, HI										
<a href="#">AES Hawaii Inc.</a> Kapolei, HI										
<a href="#">AeroVironment Inc.</a> Honolulu, HI										
<a href="#">Aline Trenchless Engineering</a> Waipahu, HI										
<a href="#">Aloha Petroleum, Ltd.</a> Honolulu, HI										
<a href="#">Ambient Micro, LLC.</a> Kihei,, HI										
<a href="#">Aquacultural Concepts</a>										



Ag Biotech



Astronomy



Life Sciences



Communications &  
Info Tech



Defense/Aerospace

•**31,106 Jobs**

•24,000 Private

•7,000 Public

•**1,964 Companies (1700 Private)**

•**10 Market Sectors**

•**\$69,000 Average Salary**

Engineering



Environment



Film/Digital Media



Ocean Science



Energy





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# Industry/DBEDT Consensus on Tech Definition/Methodology

The definition of technology was derived from the Bureau of Labor statistics (BLS), based on the level of a company's technology intensive workforce, with conservative modifications to improve its relevance for Hawaii.

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# Innovation & Technology Market Segments

Market Segment	Growth rate (2002-2007 emp.)	Average Earnings (2007)
Agricultural Biotech	6.4%	\$53,866
Astronomy	3.6%	\$70,951
Biotech/Life Sciences	2.3%	\$54,532
Defense/Aerospace	4.1%	\$76,697
Energy	8.4%	\$58,498
Environmental	4.0%	\$66,971
Film/Digital Media	0.2%	\$73,335
ICT	2.5%	\$75,056
Ocean Sciences	5.2%	\$53,959
Engineering	3.8%	\$80,799
Overall Tech	3.3%	\$63,623
Overall HI Economy	2.5%	\$45,963

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# Size and Scope

- Tech contributed \$3 billion dollars, or 5% of the state's \$61 billion economy.
  - 31,106 jobs, or 3.6% of the state's employment of approximately 800,000 workers.
  - Between 2002 and 2007 tech growth of 3.3% outpaced the 2.5% growth of the overall economy.
  - 1,964 companies, approximately 5% of all establishments.
  - \$69,000 average annual earnings per tech worker — 50% more than the average worker.
  - Technology workers in Hawaii earn about 77% of the mainland average for technology employees.
-

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# Sound Bite #1

Tech workers in Hawaii earned about \$1,500 more per month than the average non-tech worker.

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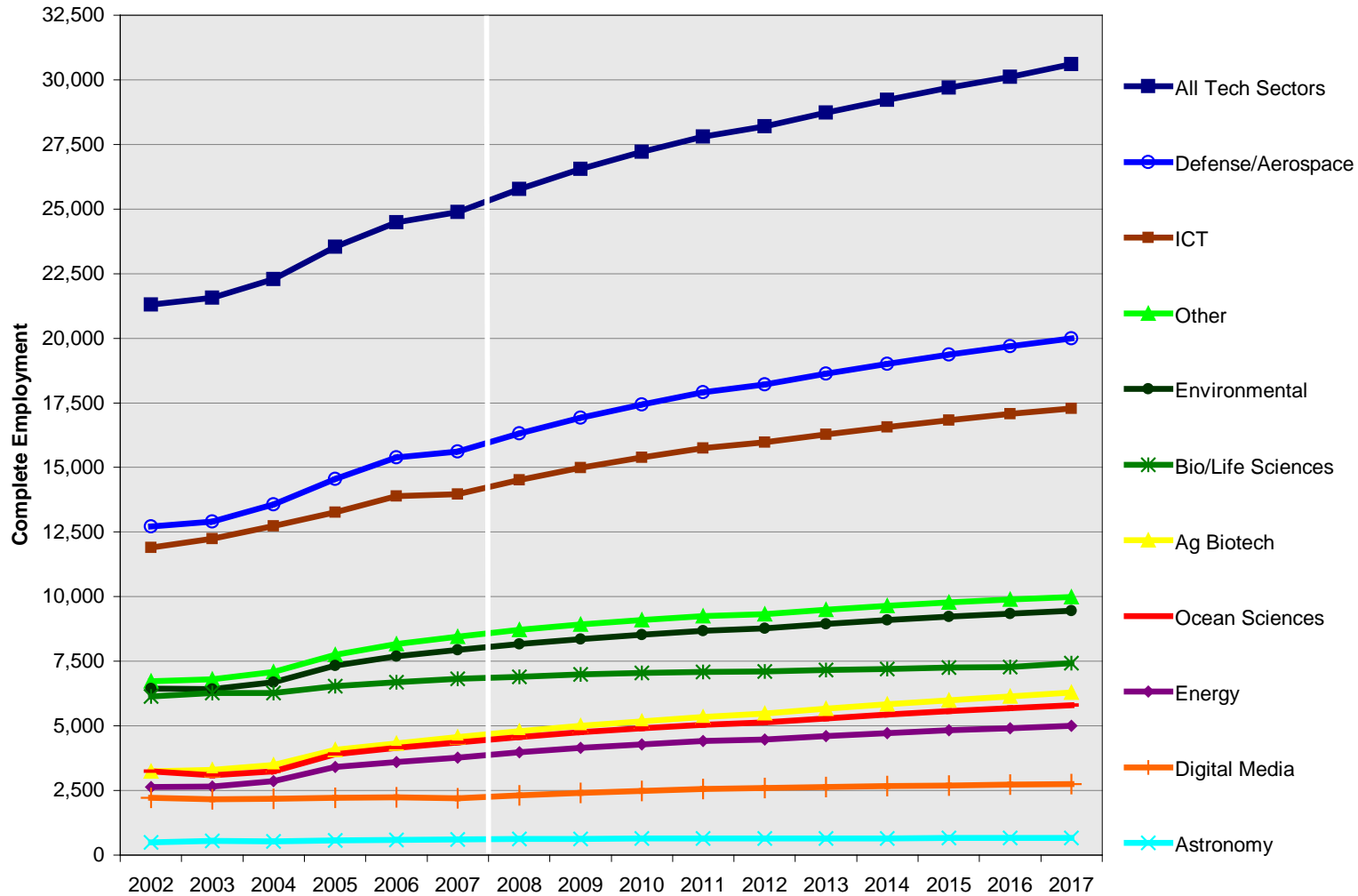
## Sound Bite #2:

The technology sector's impact on the Gross State Product of \$3 billion is about the same as the accommodations industry.

	Employment	Impact on GSP
Accommodations	40,000	\$3 billion
Science/Tech	31,106	\$3 billion

# Hawaii's Tech & Innovation Market

## Area Growth Trends

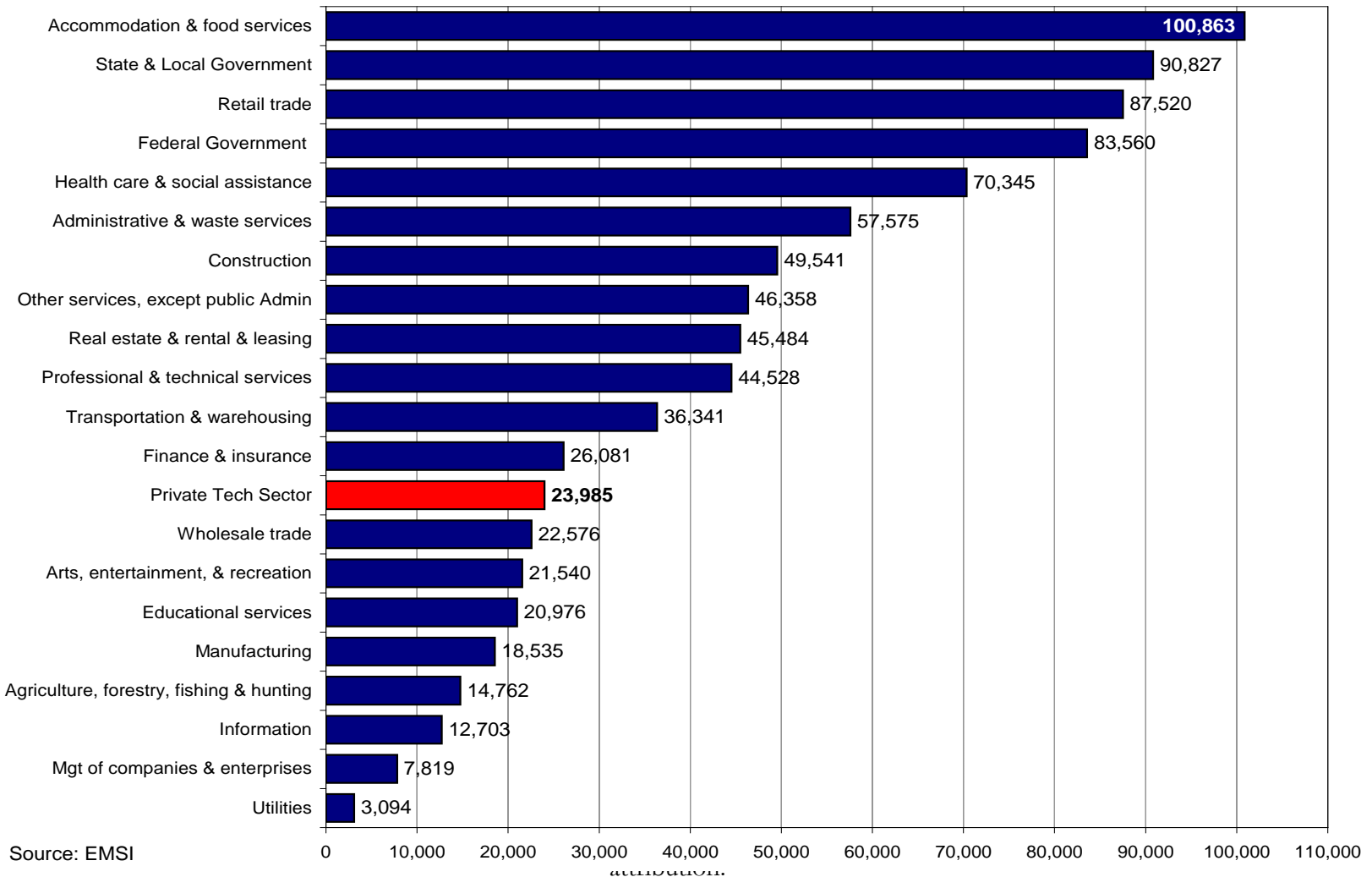


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# Market Segments Driving Hawaii's Innovation and Tech

- Defense and ICT together comprise more than 50% of tech employment.
- 4,784 science and technology jobs are located on the Neighbor Islands, or 17% of total science and technology employment
- 4,158 net new jobs were created between 2002 and 2007 within Hawaii's public and private technology sectors.
- Private sector tech accounts for 4.5 percent of US employment but lags behind at only 2.8% in Hawaii.
- However, Hawaii's tech sector is ***catching up*** to the mainland, with 3.3% annual growth compared with 1.8% on the mainland (between 2002 and 2007).

# Technology & Innovation as a Share of Hawaii's Economy





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## Sound Bite #3:

**During the next decade, the tech sector is expected to grow at a rate *46% faster* than the rest of the economy and *private sector tech companies are expected to grow at a rate 61% faster.***

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# Trends Suggest 20 years of Economic Diversification Policies Are Working

- Early visionaries Gov. Ariyoshi, Gov. Cayetano, Senator Inouye
  - Increased Investment in University of Hawaii: NSF, NIH, EPSCoR
  - Impact of Senator Inouye and Congressional Delegation
  - Act 221/215 – Hawaii State Legislature
-



**Ag Biotech**



**Astronomy**



**Life Sciences**



**Communications &  
Info Tech**



**Defense/Aerospace**

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***There will be no safety net  
without a diversified tax base.***

---

**Engineering**



**Environment**



**Film/Digital Media**



**Ocean Science**



**Energy**



# Mahalo.



[www.hiscitech.org](http://www.hiscitech.org)

# Highlights DoTax Act 221/215 Data

- **\$1.4 Billion**: Total expenditures by QHTB's (2000- 2007)
- **\$1.2 Billion**: Amount invested (2000 – 2007)
- **\$431.6 M**: Total cost to state (1999-2007)
- **3:1**: Ratio of private sector dollars invested for every \$1 of Act 221/215 tax credits claimed
- **333**: Number of QHTB's receiving investment
- **228.3M**: Act 221/215 Company Revenue (2007)
- **2007 Salaries/Job Compensation**: \$228M
- **Job Creation 2007 from 177 QHTB's**
  - 1450 Full time; 154 part-time, 641 Temp Seasonal
  - Independent contractors: 2,118
- **78.5%**: 2007 QHTB's not yet profitable

- NOTE: Data from credits claimed ie., cost to state, is complete. However, data from companies is not complete which means benefits (jobs, investment, etc.) is understated.



**Hawaii Innovation and Technology Economy  
Data Resources  
November, 2008**

Attached are the following data sources with highlights compiled by the Hawaii Science & Technology Council.

- *Innovation and Technology in Hawaii: An Economic and Workforce Profile*  
October 2008
- *Statistics on the Operation of Qualified High Tech Businesses From 2002 - 2007*,  
State of Hawaii Department of Taxation September, 2008
- *The People's Pulse*: Omnitrak Research, Winter 2007, Fall 2008, Winter 2008
- *Venture Capital in Hawaii*, The Hawaii Institute for Public Affairs, January, 2008
- *2008 State Technology and Science Index*, The Milkin Institute
- *The 2008 State New Economy Index*, The Information, Technology and  
Innovation Foundation (ITIF)



## **INNOVATION AND TECHNOLOGY IN HAWAII: AN ECONOMIC AND WORKFORCE PROFILE**

OCTOBER, 2008

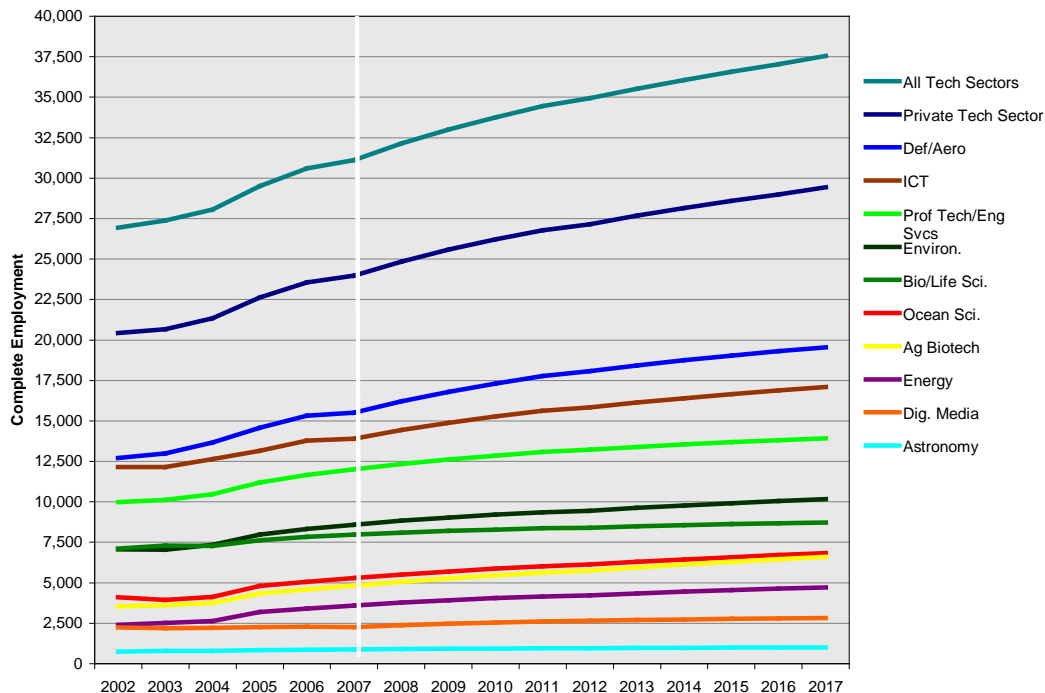
### **Summary of Research Findings**

HISciTech's economic and workforce study integrates data across Hawaii's science and tech commercial markets. Findings demonstrate the significant growth of the state's innovation industries and their increasing contribution to the state's economy. HISciTech engaged the Council for Community & Economic Research, (C2ER) a nationally renowned economic research consulting firm to conduct the study. Project collaborators include key staff at the Department of Business & Economic Development & Tourism, the University of Hawaii, the Research Corporation of the University of Hawaii, and the Economic Development Boards on Oahu and the neighbor islands. The project team relied on long-standing national and state databases, with significant qualitative input from numerous industry representatives. The definition of technology was adopted from the Bureau of Labor Statistics (BLS), with conservative modifications to improve its relevance for Hawaii. Highlights include:

- The 3.3 % annual growth rate of Hawaii's private technology companies between 2002 and 2007, outpaced the state's overall 2.5% economic growth for the same period.
- Hawaii's science and technology companies and government entities created 31,106 jobs, or 3.6 % of the state's employment.
- 23,985 technology jobs, or 77% of the total, are found in private sector companies.
- The science and technology establishments contributed \$3 billion to the Hawaii economy in 2007, 5% of the state's total \$61 billion GDP.
- Tech employees account for 3.6 percent of the state's total employment, but they generated 5.4 percent of Hawaii's total worker earnings (\$2.1 billion).
- 4,158 net new jobs were created between 2002 and 2007 within Hawaii's public and private technology sectors.
- The average annual salary across all tech sectors in Hawaii is \$69,000, which is 50% more than the average worker in the state. Accordingly, this generates higher tax revenues for the state.

- However, Hawaii's technology workers earn less than their counterparts on the mainland, 77% of the US average for the same industries. Hawaii's workers across the whole economy earn about 94% of the US average for all workers.
- There are 1,964 science and technology companies in the State of Hawaii, approximately 5% of all establishments.
- 4,784 science and technology jobs are located on the Neighbor Islands, or 17% of total tech employment.
- Hawaii's private-sector tech industry jobs of 2.8% lags behind mainland concentration of tech jobs of 4.5%. However, Hawaii's tech job growth of 3.3% annually is faster than the mainland growth of 1.8% between 2002-2007. This means we are catching up.
- Employment projections suggest that the technology sector is likely to grow nearly 50 percent faster than the rest of Hawaii's economy over the next decade.

**Figure 1: Trends in Hawaii Tech Employment by Commercial Market Segment, 2002-2017**

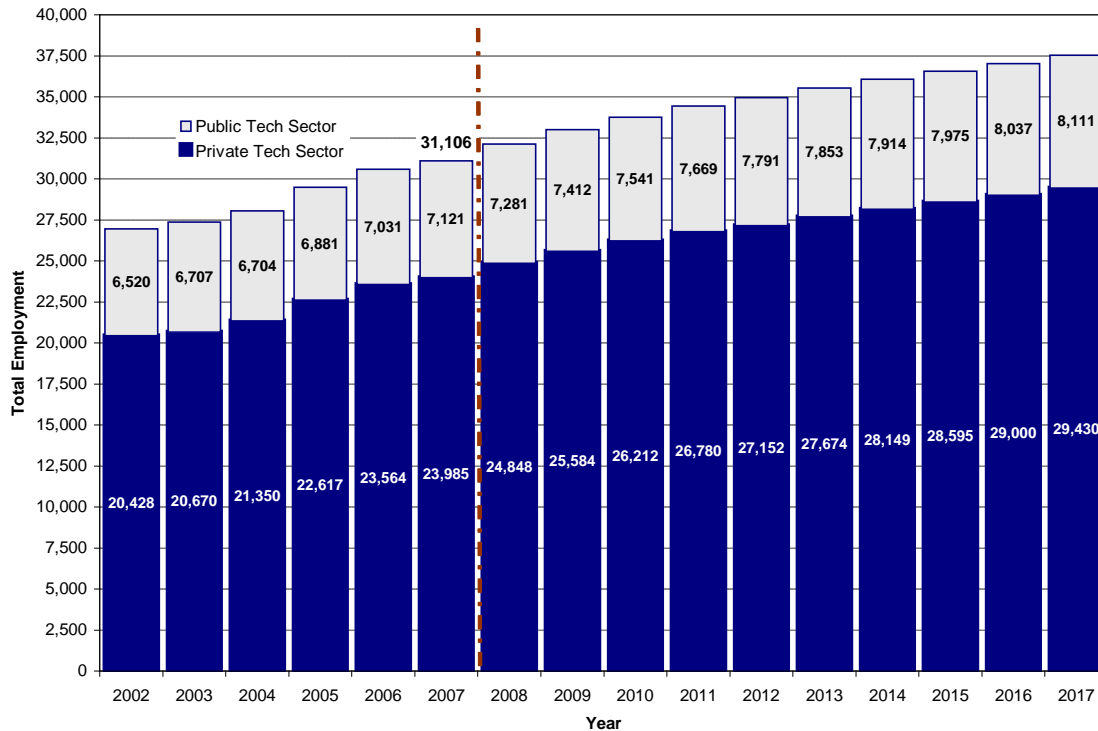




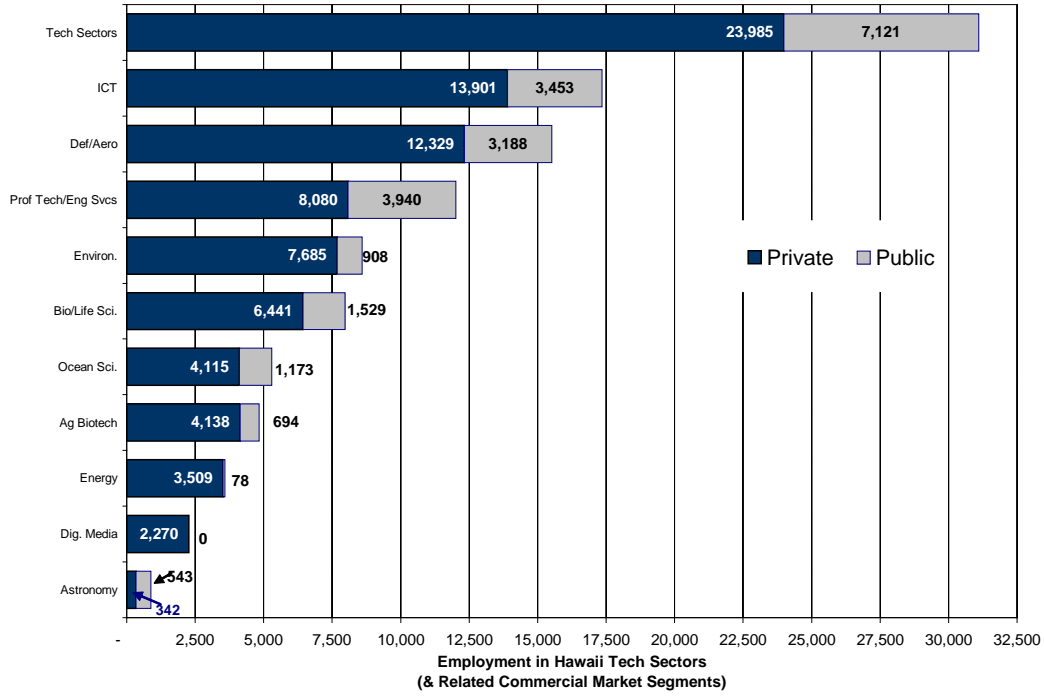
**Figure 2: Innovation & Technology Market Segments & Average Salary**

Market Segment	Growth rate (2002-2007 emp.)	Average Earnings (2007)
Agricultural Biotech	6.4%	\$53,866
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Engineering	3.8%	\$80,799
Overall Tech	3.3%	\$63,623
Overall HI Economy	2.5%	\$45,963

**Figure 3: Employment Trends in the Hawaii Technology Sector**



**Figure 4: Hawaii Tech Employment by Commercial Market Segment, Estimated 2007**





*Highlights*  
**Department of Taxation Act 221/215 Report**  
**September & December 2008**

[http://www.state.hi.us/tax/pubs/2008hitec\\_rpt08a\\_rev2.pdf](http://www.state.hi.us/tax/pubs/2008hitec_rpt08a_rev2.pdf)

- **\$1.4 Billion:** Expenditures by QHTBs in Hawaii (ie., salaries, capital improvements, etc. 2002-2007).
- **\$1.2 Billion:** Amount invested in Hawaii high-tech businesses between 2000 – 2007 using Act 221/215.
- **\$431.6 Million\*:** Investment Tax credits claimed (1999-2007)
- **3:1:** Ratio of private sector dollars invested for every \$1 of Act 221/215 tax credits claimed.
- **\$667.5 Million:** Salaries Paid (2002-2007).
- **333:** Number of Act 221/215 companies receiving investment 1999-2007.
- **\$228.3 Million:** Act 221/215 company revenue (2007).
- **Job Creation 2007 from 177 QHTB's**
  - 1,450 Full time; 154 Part time; 641 Temp/Seasonal
  - Independent Contractors: 2,118
- **2007 Salaries/Job Compensation:** \$228M
- **78.5%:** 2007 QHTB's not yet profitable and in need of capital.

\*NOTE: Data from investor credits claimed, ie., the cost to state, is complete. However, data from companies is not complete which means that the benefits (investment, jobs etc.) are understated.

**The People's Pulse**  
**Omnitrak Research for the Hawaii Business Roundtable and**  
**Pacific Resource Partnership**  
([http://www.hibusinessroundtable.org/index.php?page\\_id=40](http://www.hibusinessroundtable.org/index.php?page_id=40))

According to the People's Pulse, Hawaii residents say:

Winter 2007: How Residents Define Sustainability

More than anything else, sustainability means a comfortable life style which they and/or their children can afford without economic pressure to move elsewhere. Sustainability is also defined as:

- 84%: a marketable workforce through education and training as a key to future prosperity.
- 78%: enough high paying jobs to keep young people in the islands
- 75%: a growing a vibrant economy

Fall 2008: Top issues Influencing Vote

- The economy is the most important issue influencing their vote – with the highest level of concern coming from the neighbor islands.
- 77%: By the highest margin, more than 3 in four voters see technology as a good source of higher paying jobs.

Winter 2008: Residents See a Worse Life in the Future

By a margin of 4:1, almost two-thirds of residents (62%) agree that their opportunities to succeed in life have been better than their parents.

However, 48% of Hawaii residents feel that the future of the next generation will be worse than today.

Hawaii Institute for Public Affairs

*Venture Capital in Hawaii: An Assessment of Market Opportunities*

January, 2008

Hawaii's Venture Capital Ranking:

**36c:** Amount of venture capital historically invested in Hawaii for every \$1,000 of GSP. The national average is about \$1.73 for every \$1,000 of GWP – *Hawaii ranks in the bottom 10 states for venture capital invested.*

However, Hawaii's rank went from the bottom ten to the top ten in the June, 2008 Milken report, chiefly as a result of data on Act 221/215 investment.

Demand for Venture Capital:

**\$49 Million:** Estimated annual qualified demand for venture capital by Hawaii companies for 2008 through 2010 – a conservative estimate according to Hawaii venture capital industry leaders.

**\$147 Million:** The amount of VC funds would need to raise in the near term – and in the face of economic belt-tightening – to serve that demand.

Anticipated Venture Capital Supply:

While the January, 2008 study reported that 10 funds were seeking to raise \$128 million for Hawaii investment, still short of the local demand for VC, the current economic situation has cast a long shadow on the availability of VC for Hawaii companies in the foreseeable future.

# Milken Institute

## 2008 State Technology and Science Index

<http://www.milkeninstitute.org/tech/>

### Summary

The Milken *State Technology and Science Index* examines a host of indicators to paint a comprehensive picture of how well states are performing in this highly competitive knowledge-based economy. Overall, Hawaii ranked 28<sup>th</sup> among the states in 2008, rising dramatically from 39<sup>th</sup> place in 2004. This rapid 11 point overall gain is largely a result of attracting highly educated people into the state.

Significant findings from each major category include:

- Hawaii posted stellar gains in *Research & Development* with a ranking of 23<sup>rd</sup>, partially as a result of expenditures on math and computer science. In this indicator, the state went from a bottom-ten to a top-ten finish.
- Hawaii moved up 16 places to rank 27<sup>th</sup> overall in *Risk Capital and Entrepreneurial Infrastructure*.
- Hawaii tied for third-best improvement, now ranking 27<sup>th</sup> in *Human Capital Investment*, (essentially the knowledge embedded in its people).
- 32<sup>nd</sup> in the *Technology and Science Work Force* index, (the concentration of skilled workers in science and technology occupations).
- Hawaii also improved dramatically in *Technology Concentration and Dynamism*, (measuring the ability to establish local technology clusters that are networked with the global business community), moving up seventeen positions to 30<sup>th</sup> place, with a strong jump in the percent of high-tech start-ups.

# Honolulu Advertiser

Tuesday, November 18, 2008

## Hawaii moves up 6 notches in national tech ranking

Hawai'i is doing a little better a ranking of states when it comes to the so-called "new economy," or activities in which technology, innovation and knowledge play a role.

The study released by the Information Technology and Innovation Foundation shows the state moved up to the No. 35 spot from 41 last year, with strong showings in several areas, including workforce education and immigration of knowledge workers.

The report is an attempt to identify which states are doing well when it comes to being innovative, globally-linked, entrepreneurial and dynamic, with an educated workforce and all sectors embracing the use of information technology. Massachusetts, a state that boasts many software, hardware and biotech companies along with world-class universities, ranked first on the list.



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**John Kuriyama**  
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**Dew-Anne Langcaon**  
*Chief Operating Officer*  
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**Paul Zorner**  
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Hawaii BioEnergy

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*President*

# **High Technology Business Investment Tax Credit**

Committee on Economic Revitalization, Business, & Military Affairs  
Committee on Economic Development and Technology

**Joint Informational Briefing on Act 221 and 215**

Wednesday, January 28, 2009

9:00 a.m.

# Context for Re-examining High Tech Investment Credits

- Community wants a high tech sector as a component of our economy.
- Hawaii's generous tax credits – legitimate questions that need to be asked.
- Executive Budget cost containment of:
  - \$21 million in FY 2010
  - \$45 million in FY 2011

# Comparing Low Income Housing Tax Credits vs. High Technology Business Investment Tax Credits

Low Income Housing Tax Credit	High Technology Business Investment Tax Credit
Credit claims capped by formula	Credit claims unlimited
Average \$1.3 million per year	\$136 million in estimated claims for 2007
9% of total low income housing development cost claimable	100% of investment cost in QHTB claimable
Credit taken over 10-year period, distributed evenly over the period	Credit taken over 5-year period, 60% of credit claimable in first 2 years of the period
30 year commitment	5 year commitment
Results can be measured clearly	Results are difficult to measure
Units cannot be moved out of State	Businesses can be moved out of State, as long as tax credit provisions are satisfied.
Investment after building is completed	Investment up front
Tax credit becomes a payable loan if project not completed	10% of tax credit is recaptured if business is no longer a QHTB
Established, published qualifying scoring system	Undefined qualifying parameters

# Options for Legislature to Consider

- HB1157 / SB975 – Allows program to operate as is; places a cap on tax credits over next 18 months.
- HB1156 / SB974 – Moves Act 221 closer to LIHTC model.

# **HB1157 / SB 975**

- Caps the aggregate to \$160 million from July 1, 2009 to December 31, 2010.
  - \$80 million for the July 1, 2009 to December 31, 2009 allotment period.
  - \$40 million for the January 1, 2010 to June 30, 2010 allotment period.
  - \$40 million for the July 1, 2010 to December 31, 2010 allotment period.

# HB1157 / SB 975

- DOTAX allots starting the first day of each allotment period.
  - \$1,000 fee every \$1 million in credit allocation
  - First come, first serve basis.
  - Each QHTB cannot apply for more than \$10 million
  - Unused tax credits rolled-over to the next allotment period.
- Requires reporting of credits used 15 days after allotment period closes.
- Allocations are not transferable or negotiable; claims are subject to auditing.

# HB1156 / SB 974

- Tightens definition of qualified research for companies using IRC Code 41(d).
  - Activities that constitute elements of a process of experimentation undertaken for the purpose of discovering information that is technological in nature.
- Increases the recapture provision from 10% to 50%.
- Repeals multiples.
- Requires QHTBs to have 75% of business activities conducted in Hawaii and 75% of employees and contractors conducting activities to be in Hawaii.



- Act 221 scheduled to sunset December 31, 2010.
- Migrate to phase II investments
  - In 2008, Governor Lingle proposed a bill requiring the ERS Board to allocate \$100 million for Hawaii venture capital investments.