

High Technology Development Corporation
2003 Annual Report



Mānoa Innovation Center

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(Note on Hawaiian diacritical marks – The kahakō (a line directly above a vowel, also called a macron) indicates that the vowel sound is to be elongated. The 'okina (an up-side-down apostrophe, also called a glottal stop) indicates a break in the breath, as in "Oh-oh!" Diacritical marks are omitted in this report for organizations that have chosen not to adopt their use.)

Profile of HTDC

The mission of the High Technology Development Corporation (HTDC) is to facilitate the aggressive growth of the high technology industry in Hawai'i. Created by the State Legislature 20 years ago, HTDC's programs have contributed to over 287 jobs and over \$18.6 million in revenues via its incubation programs, facilitated Hawai'i applications for SBIR and other federal research and development (R&D) monies for small business innovation in excess of \$31 million dollars, and administered over \$44 million in federal R&D funds for alternative energy development. HTDC continues to deliver a broad range of services and programs for Hawai'i's technology entrepreneurs. HTDC takes advantage of local, national and international resources to fulfill its statutory duties to:

- develop industrial parks and high technology innovation centers;
- provide managerial, administrative, financial and support services for high technology companies;
- promote and market Hawai'i as the preferred site for high technology commerce;
- collect and analyze information on new and evolving commercial high technology activities; and
- make recommendations on policy and plans for new technology-based economic development.

HTDC is an agency of the State of Hawai'i and is administratively attached to the Department of Business, Economic Development and Tourism (DBEDT).

HTDC STRATEGIC PLAN FOR 2000 – 2005

In 2003, HTDC completed the third year of a five-year strategic plan that focuses on four goals:

- create more high technology business opportunities in Hawai'i;
- increase the marketing and promotion of Hawai'i's high technology industries;
- develop, manage and assist technology centers statewide, and
- increase information gathering and support activities for Hawai'i high technology businesses.

HTDC STRATEGIC OBJECTIVES FOR 2003

HTDC moved toward its strategic goals in 2003 by meeting operational objectives to:

- enhance high-tech incubation programs;
- leverage federal funding to increase technology R&D and commercialization;
- enhance marketing and promotion efforts to support technology development in Hawai'i, and
- deliver relevant information and support activities.

Board of Directors

Russell T. Yamane (Chair)

Russell T. Yamane & Associates

Jay M. Fidell (First Vice Chair)

President

Bendet, Fidell, Sakai & Lee

David Lassner, Ph.D. (Second Vice Chair)

Director of Information Technology

University of Hawai'i

Brian J. Goldstein (Secretary/Treasurer)

President

Kona Bay Marine Resources

Stacey C. G. Hee

Attorney at Law

McCorriston Miller Mukai MacKinnon

Gail Honda, Ph.D.

President & CEO

Global Optima, Inc.

Sharon M. Wong

President

IMS, Inc.

Theodore E. Liu (Ex-Officio)

Director

Department of Business, Economic Development & Tourism

(DBEDT)

Maurice H. Kaya (Ex-Officio Representative for

DBEDT Director)

Chief Technology Officer

Department of Business, Economic Development & Tourism

Georgina K. Kawamura (Ex Officio)

Director

Department of Budget & Finance

Stanley Shiraki (Ex Officio Representative for
B&F Director)

Deputy Director

Department of Budget & Finance

Philip M. Johnson, Representative

Hawaii Strategic Development Corporation

Professor of Computer Science

University of Hawai'i

Carl Simons, Representative

Natural Energy Laboratory of Hawaii Authority

President, West Hawaii Concrete Ltd.

A Message from the Board Chair

The year 2003 was a landmark year for HTDC. It marked HTDC's 20th anniversary as the primary State agency tasked with developing Hawai'i's commercial high technology industry. Although the focus of its efforts changed over the years, HTDC's leadership in growing and supporting high-tech companies remained constant. The overview of HTDC's accomplishments since its creation by the Legislature in 1983 and the timeline included as a part of this year's annual report may surprise many who are unaware of how many "hats" HTDC wore in 20 years.

It was also a year of transition for HTDC. We bid aloha to Board members Ken Koike, Creighton Arita and Mary Fastenau, and expressed our appreciation for all of their work in helping to build and guide this organization over the years. We also welcomed the first appointments to HTDC's Board by Governor Linda Lingle: Brian Goldstein, Sharon Wong and Jay Fidell, and we look forward to the insight they will bring to the Board.

The Board and staff of HTDC also very reluctantly said goodbye to HTDC Executive Director & CEO Nola Miyasaki as she left Hawai'i to assume a new position as the Executive Director of the Falcone Center for Entrepreneurship at Syracuse University. Under Nola's leadership these past years, HTDC developed major new initiatives to market the State's high technology resources on both a national and local level (TechBuzz), provided support for tech workforce development (TechJobsHawaii.org, the Holiday Tech Fair), and developed significant information resources (HiTechHawaii.com, Hawai'i Technology Business Directory, State of Technology in Hawai'i Survey). Nola's good business sense and warm personality will be missed and we wish her well.

In January, the Board invited Dr. Philip Bossert to serve as HTDC's new Executive Director and CEO. During his 30-plus years in Hawai'i, Phil was a university professor and a college president, worked for several large technology companies and started two of his own, served as Deputy Director at DBEDT, and was Assistant Superintendent for Information Technology at the Department of Education. The Board feels fortunate to have this combination of private and public sector experience in the executive's role, and we look forward to working with Phil to expand HTDC's role as the State's primary high technology industry resource.

You will see in the pages that follow that much was accomplished this past year, and indeed this past 20 years. But there is much yet to be done if Hawai'i is to succeed in truly diversifying its economy beyond its current heavy dependence on tourism. As the State's emerging high technology sector establishes itself as a major economic player in the coming years, the role of HTDC will increase in importance. The new programs and services that were launched this year, as well as those that are soon to come in 2004, are a testimony to this continuing leadership role for HTDC.



Russell T. Yamane

Russell Yamane
Board Chair

A Report from the Executive Director and CEO

Twenty years ago this year, the Hawai'i State Legislature created the High Technology Development Corporation (HTDC) to facilitate the development and growth of Hawai'i's commercial high technology industry. And indeed, HTDC played an important role in growing Hawai'i's tech industry, but we refocused our key areas of service several times in order to meet the changing needs of this new and evolving industry.

In 1983, HTDC's initial focus was developing and managing technology parks and incubators, since creating a high-tech industry meant providing physical infrastructure and affordable professional services for start-ups. After building incubators on O'ahu and Maui and successfully filling them with promising companies, HTDC refocused its energies on marketing Hawai'i as a viable location for high-tech businesses. Along with efforts by other private and public sector organizations, HTDC's marketing activities helped attract new companies to the State and new investment in local companies.

Today, the Hawai'i Technology Trade Association estimates that Hawai'i's technology market has more than doubled in the past decade. There are more than 800 technology companies in Hawai'i, generating estimated annual revenues in excess of \$2 billion. As the industry continues to grow, so does its need for statewide incubation services and skilled workforce development.

As it has done in the past, HTDC is once again refocusing its efforts and resources on those areas where assistance is most needed. HTDC recently launched a new "virtual" incubation services program that will provide start-up companies statewide access to business development services, synergistic and strategic partnerships, networking and marketing opportunities, shared support services, and business mentoring. In addition to providing services at our Mānoa Innovation Center on O'ahu and our Maui Research Technology Center on Maui, HTDC's incubation services will now be available on the Big Island at the new Hawai'i Innovation Center at Hilo, a partnership program with the University of Hawai'i at Hilo, and at the Natural Energy Laboratory of Hawaii Authority (NELHA) at HOST Park in Kona. HTDC is also developing a program for Kaua'i that we hope to launch in early 2004. Whether a company is located within one of HTDC's physical incubators or operating out of a garage or a spare room, start-ups and phase-in companies will now have access to the many services HTDC provides.

HTDC's services now also include the FastTrac Entrepreneurship Training programs that help improve the business processes of technology companies and the Manufacturing Extension Partnership (MEP) program that provides training and consulting services for construction, diversified agriculture, and traditional manufacturing companies. These new programs, in addition to HTDC's already highly successful Hawai'i Small Business Innovation Research (HSBIR) program and Hawai'i Electric Vehicle Demonstration Program (HEVDP), add both depth and breadth to the range of services HTDC is able to provide to Hawai'i's emerging tech industry.

HTDC also continues to expand its information services for the tech community. The HiTechHawaii.com portal receives over 30,000 hits a month from local, national and international companies and individuals seeking information about Hawai'i's tech industry. HTDC's TechJobsHawaii.org website offers a cost-free, on-line marketplace for tech job seekers and those looking for experienced tech professionals. And HTDC also has reaffirmed its commitment to attract experienced technology professionals to Hawai'i through its continuing support of GlobalPauHana.org, a worldwide web-based grassroots program that connects 3,000-plus Hawai'i expatriates and people with an affinity to Hawai'i.

Like many businesses operating in Hawai'i, HTDC remains a flexible organization that re-evaluates and refocuses its resources to best meet the changing needs of a growing industry. I expect that the next 20 years will see HTDC reinvent itself numerous times to best support Hawai'i's commercial high technology businesses.



A handwritten signature in black ink that reads "Philip J. Bossert". The signature is written in a cursive, flowing style.

Philip J. Bossert, Ph.D.
Executive Director and CEO

HTDC Programs and Services

Statewide Incubation Facilities & Services

INCUBATION FACILITIES – MĀNOA INNOVATION CENTER (MIC)



Best Practices Incubation Program

The flagship of HTDC's Incubation Program, Mānoa Innovation Center, located near the main research campus of the University of Hawai'i in verdant Mānoa Valley, brings together the best of Hawai'i's intellectual and physical resources. MIC's primary role is to serve as an incubator for new and early-stage technology companies. Tenants enjoy advanced connectivity, state-of-the-art facilities and shared support services in an environment that is especially designed to promote the continuous exchange of ideas and information. Seminars and workshops take place in conference rooms and shady courtyards in a subtropical climate with gentle tradewinds, and even frequent rainbows. MIC began its 11th year of operations in 2003, facilitating the growth of technology companies by providing business development services, synergistic and strategic partnerships, extensive networking activities, and professional marketing opportunities.

2003 also marks the beginning of the new Client Services Program for MIC. This new program enhances the MIC experience by providing incubation tenants and non-tenants statewide access to business development services, strategic partnerships, networking and marketing opportunities, shared support services, and business mentoring.

Noteworthy achievements by MIC companies 2003

2003 was a banner year for MIC companies, with three being selected for the Governor's Exporter of the Year award. This was a significant achievement, as three of the seven winning companies are currently MIC program participants and tenants.

"We want to recognize companies and individuals that significantly contribute to expanding Hawai'i's exports of products or services to the rest of the world," said Governor Lingle. "These outstanding businesses provide quality job opportunities for our residents and help position Hawai'i in the global marketplace."

EXPORTER OF HIGH TECHNOLOGY

Blue Planet Software, Inc.

Henk B. Rogers, President & CEO

Sponsor: Ken Tomi, High Technology Development Corporation

Blue Planet Software, Inc. represents and redesigns computer games. It has successfully established itself as a top game design company. Its most recognized game, Tetris, is wildly successful in the international market for computer games. They have redesigned the game software to work with a Japanese publisher of mobile phone games, G-Mode. Blue Planet Software, Inc. is an example of Hawai'i's future wave of companies that will be at the core of firms exporting high technology intellectual property. They have also demonstrated that the world is truly their marketplace.

EXPORTER OF HIGH TECHNOLOGY

Oceanic Imaging Consultants, Inc.

Thomas B. Reed IV, Owner/President

Sponsor: Carolyn Ching, CPA

Oceanic Imaging Consultants, Inc. (OIC) was founded in 1993 and was a spin-off from research developed at the University of Hawai'i at Mānoa. The company started in the State's incubator, Mānoa Innovation Center, and blossomed. OIC develops seafloor imaging software and systems that acquire side-scan sonar, interferometric, multi-beam bathymetry, sub-bottom and navigational data to map the ocean bottom for navigational and research applications.

They have successfully marketed this technology to the Department of Defense as well as entities in Korea, United Kingdom, Japan, Germany, Denmark, and China. Much of their success has been a tried and true process of consistently marketing their products at key technology trade shows, some of which were sponsored through the State of Hawai'i's Ocean Resources Branch.

EXPORTER OF MANUFACTURED PRODUCTS

Safe Water Systems, LLC

William Hartzell, President

Sponsor: Naomi Masuno, Central Pacific Bank

How often can a company claim that it is saving people's lives around the world? Safe Water Systems invented and developed a technology that produces safe drinking water without the use of electricity, fuel or chemicals. It has been marketing and donating its Solar Water Pasteurizers in 48 countries, affecting the lives of over 100,000 people. This product is a safe and low-cost solution to a worldwide problem of contaminated drinking water. The challenge however has not been a lack of clientele, but more often than not, the clientele are people too poor to afford the units. The company has overcome this challenge by establishing alliances with funding organizations, relief organizations, a variety of businesses and marketing agents throughout the world. Safe Water Systems is a prime example of how "great and wonderful things" can come from a small venture and how the State's incubator is helping to create remarkable companies.

2003 MIC Statistics

MIC client company revenue:	\$13.7 million
Estimated MIC annual payroll:	\$5.6 million
Income taxes to the state:	\$97,365
Number of employees:	144
Total number of MIC companies:	25

Graduates

2003 graduates of MIC include Quality High Tech, Hi Point Software, FlexNet, Laser Barcode Solutions, Hawaii Natural Heritage Program, Hawaii Planz Administrators and Hoku Scientific.



Henk B. Rogers, President and CEO of Blue Planet Software, Inc., winner of the Governor's Exporter of High Technology award, with Governor Linda Lingle.



Thomas Reed IV, left, Owner and President of Oceanic Imaging Consultants, Inc., winner of the Governor's Exporter of High Technology award with Governor Linda Lingle and Mike Louie of Carolyn Ching CPA (nominator).



John Grandinetti, left, Director of R&D, Will Hartzell, President, and Terry Hart, International Marketing Director, of Safe Water Systems, LLC, winner of the Governor's Exporter of Manufactured Products award, with Governor Linda Lingle, and Naomi Masuno of Central Pacific Bank (nominator).

Occupants at Mānoa Innovation Center – 2003

INCUBATION OCCUPANTS

Adaptive Technologies Corporation – signal and image processing, system prototyping

Aloha Mobile.net LLC^^ – portable information technology solutions

Amagata U.S.A – software

Aquasense – electro-optical engineering and research

Best Places Hawaii – software

Blue Lava Wireless – gaming software

Blue Planet Software – gaming software

Computer Assurance – computer networking

FlexNet* – software, Internet

GL Scientific – instrumentation fabrication

GuideNet – software, Internet

Hawai'i Natural Heritage Program* – database development

Hawaii Planz Administrators* – online service - blueprints

HiPoint Software* – software

Hoku Scientific* – fuel cell development

Inovaware Corporation – software, Internet

ITS Solutions – DoD consulting

Kamakura – software

Kuenhle Agro Systems – biotech - plant/animal

Laser Barcode Solutions* – software

Mana'o Research^ – Smart Chip Technology

Mauna Kea Infrared – infrared instrumentation

Net Teachers^ – Internet Application Solution

Next Gen Optimized Radar^ – DoD solutions

Oceanic Imaging Consultants – deep sea mapping

Pacific Area Network – Internet

Psychosocial Rehabilitation Center – software

Quality High Tech Research* – renewable energy

Quantum Leap Interactive, Inc.^^ – artificial intelligence

Safe Water Systems, LLC – engineering

Tropical Ventures^ – Energy Efficiency Solutions

Vitex – news database

^ indicates a new tenant in 2003

^^ indicates a new virtual tenant in 2003

** indicates a successful graduate*

INCUBATION FACILITIES – MAUI RESEARCH & TECHNOLOGY CENTER (MRTC)



A Hybrid Research & Development/Incubator Program

MRTC is an engine for high-tech growth in the Maui Research & Technology Park, Maui County and Hawai'i. While Maui's tech industry is comparatively small by mainland standards, it continues to grow at an aggressive pace. Since private-sector Internet/dot com startups, telecommunications, and information technology were generally not able to make a strong business case for locating on Maui during the 1990s, the island missed much of the fallout from the overall decline in those industries. Technology industry sectors where Maui is seeing continued growth include: astronomy, supercomputing, sensors, lasers, optics, agri-biotech, Dept. of Defense information technology services, and dual use R&D. Significant Maui growth is projected in these areas for at least the next five years.

2003 MRTC Statistics

Number of employees:	120
Estimated MRTC annual payroll:	\$6 million
MRTC client company revenue:	\$20 million
Estimated 2003 Maui technology industry revenue:	\$120 million
New MRTC client companies/projects:	5
Prospective client company contacts:	30**
Attendance at MRTC events:	900+***
Average vacancy rate:	0%

** This number represents serious inquiries involving in many cases several meetings, phone calls, correspondence, etc. Each company is only captured once in the number.

*** Maui TechOhana, Incubation workshops, public events and tours.

Incubation Assistance

Maui TechOhana: the Maui Economic Development Board (MEDB), along with the Maui Small Business Development Center, continued the Maui TechOhana program launched in May 2002. The program is structured around two independent tracks: Track One is devoted to technology industry networking opportunities, while Track Two offers virtual business incubation services.

The format of the Track One networking event is based on best practices gleaned from other incubators, universities, and venture forums. The presentation is kept to around 15 minutes, with questions and answers allowed for about 10 minutes. After the presentation, everyone at the event is given a chance to make a brief introduction to allow participants to maximize the effectiveness of one-on-one networking after the presentation. Over 500 attendees participated in TechOhana events during the year, with presentations on technology product licensing, Act 221, Maui astronomy assets, and other tech and business related subjects.

Track Two is designed for growth-oriented technology companies located outside of MRTC. With MRTC at full occupancy for the past several years, TechOhana offered business incubation services and affiliation with the MRTC brand to selected companies, while leveraging the facilities for the good of the industry. Companies applying to the program are screened in a manner similar to applying for an actual suite at the center. Physical services offered to Track Two companies include post office box service, an office for a day service, conference room and projector use, service provider office availability, and package receipt. Program staff recruited a number of premium service providers willing to provide pro bono, or reduced fee, work for companies affiliated with Track Two.

MRTC Client Company Annual Reviews: MEDB conducted client company reviews in the month of February, completing the 2003 review process for all but Maui Gateway. During the review, company progress was compared to entry milestones, and information on number of employees, payroll, and revenues for 2002 was gathered to meet HTDC reporting requirements.

Client Companies

Aloha Mobile.net LLC** – portable information technology solutions through proprietary proximity-enabled 802.11/WiFi networks

Flycor** – proprietary information technology products and applications for use in the travel industry and high performance computing/massively parallel processing products

Hawaii Wave High Speed Wireless Networks LLC* – wireless networks, digital guest services

Homeschool Learning Network** – delivery of home school curriculum to subscribers via the Web

Loea Communications – ultra-high bandwidth wireless Internet connectivity

Maui Gateway-Local – Internet service provider

Maui Scientific Research Center* – scientific research in a wide variety of fields

Maui Sky Fiber* – First broad band 3G wireless Internet service provider in the United States

Mosaic Optical Laboratory* – designer and manufacturer of custom and proprietary optics

NBT 168 Technik LLC* – Travel and hospitality services

Oceanit Laboratories, Inc. – engineering, scientific and technical services

Pacific Disaster Center – federally supported information processing center for federal, state and local emergency managers in Hawai'i, Asia, and the Pacific and Indian Ocean regions

Smart House Control** – design, systems integration, and proprietary solutions in the home automation field

TC Kokua – multi-mode customer contact center

TREX Enterprises – R&D in laser radar, remote sensing and advanced imaging applications

** indicates a new tenant in 2003*

*** indicates new virtual tenant in 2003*

Anchor Tenants

Hawai'i Small Business Development Center (SBDC) Network – Business counseling, training and education.

Hawai'i SBDC Network Business Research Library – Business research and technical information services for firms at the MRTC.

Maui Economic Development Board (MEDB) – Provides leadership and vision in the Maui community for the responsible design and development of a strong and diversified economy. Strong proponent for the development of technology on the island of Maui.

University of Hawai'i Center, Maui Community College – Delivers higher education programs (Associate, Baccalaureate, and Graduate levels), customized training, and videoconferencing facilities.

MRTC Marketing

High Tech Maui Newsletter: With a quarterly distribution of approximately 10,000, the High Tech Maui newsletter is a highly effective business development tool. MEDB continues to distribute this business development tool at conferences, via mail and email, and provide it in marketing information packages. Six MRTC client companies were featured in the newsletter over the three issues published during the year.

INCUBATION FACILITIES – THE HAWAI'I INNOVATION CENTER AT HILO (HICH)

On December 1st, the Hawai'i Innovation Center at Hilo joined the HTDC Statewide Incubation Program. HICH is owned and operated by the University of Hawai'i at Hilo (UHH), in partnership with HTDC, to facilitate the growth of Hawai'i's unique technology niches, such as astronomy, plant science and animal science.

Strategically located in downtown Hilo, Hawai'i, this center will offer services similar to those available to start-up technology companies at the Mānoa Innovation Center and the Maui Research & Technology Center.

INCUBATION PROGRAMS & SERVICES

The following programs are available to companies located in our business incubator facilities, as well as other technology companies.

1. Professional Service Providers Program (PSP)

HTDC's Professional Service Providers Program is designed to provide HTDC's client companies with the business support and consulting resources needed to accelerate their transition from incubator companies into vibrant and successful businesses. PSP is based on public-private sector partnerships between HTDC and experienced business professionals who have agreed to provide value-added services to support the success of our client companies. HTDC's client companies are given access to these consultants and professionals, who provide assistance in such areas as law, finance, marketing, human resources, and business plan development. The PSP program also provides access to reduced cost business services, development seminars and networking opportunities for registered client companies.

2. Workshops and Seminars

HTDC sponsors workshops and seminars on timely and relevant business topics, such as intellectual property issues, tax strategies, and marketing. These seminars are open to HTDC Client Companies as well as the general business community.

Client companies and the general business community are also invited to participate in workshops offered by HTDC's federal and business development programs such as the SBIR/STTR biennial conference, FastTrac, and Innovative Solutions' manufacturing related programs.

3. Fast Trac Entrepreneurship Program

FastTrac Tech, FastTrac New Venture and FastTrac Manufacturing are comprehensive entrepreneurship development programs that provide entrepreneurs with business insights, leadership skills and professional networking connections so they are prepared to create a new business or expand an existing enterprise. The FastTrac programs include practical, hands-on business development programs and workshops for both existing and aspiring entrepreneurs. Considered one of America's leading entrepreneurial training resources, with programs that are written and taught by successful entrepreneurs, FastTrac has assisted more than 60,000 people across the country to start or grow a business. FastTrac programs are currently being provided in 150 cities in 38 states and graduates of these programs are eligible to become members of the national, resource-rich EntreWorld Network, sponsored by the Kauffman Foundation.



4. Innovative Solutions Manufacturing Extension Partnership (MEP) Program

In July 2003, HTDC became the new home for Hawai'i's Manufacturing Extension Partnership (MEP) program. MEP is a federal program of the Department of Commerce's National Institute of Standards and Technology. The MEP program spans the U.S. and Puerto Rico and is comprised of 400 nationwide not-for-profit centers with the sole purpose of providing small- and medium-sized manufacturers with the help they need to succeed. That makes it possible for even the smallest firms to tap into the expertise of knowledgeable manufacturing and business specialists all over the United States. Each center works directly with area manufacturers to provide expertise and services tailored to their most critical needs, which range from process improvements and worker training to business practices and applications of information technology. Solutions are offered through a combination of direct assistance from center staff and outside consultants. Centers often help small firms overcome barriers in locating and obtaining private-sector resources. Nationally MEP has assisted over 149,000 firms to date.

Since the program started in Hawai'i six years ago, the local MEP program was managed by several different organizations in Hawai'i and on the Mainland. The Hawai'i program currently does business as Innovative Solutions (IS). The IS staff delivers strong business consulting and brings in the resources of experienced business consultants within the MEP national network, adding great value to the HTDC suite of services for small-and medium-size technology firms. The Hawai'i program attracted \$437,066 in federal dollars to which HTDC is providing a two-to-one cash and in-kind match.

Innovative Solutions has three full-time project managers located on O'ahu, a project manager in Hilo, Hawai'i, and a program assistant.

MEP WORKSHOPS AND ACTIVITIES

Innovative Solutions staff consulted with over 50 companies on Lean manufacturing principles, overall business process improvement, and FDA regulations impacting the majority of food manufacturers in Hawai'i. Consulting contracts and workshop revenues totaled over \$90,000 in consulting and workshop revenues in five months.

5. Business Reviews

HTDC also arranges for internal, confidential reviews of its client companies to assess their growth and provide guidance in their continued business development.

HTDC Programs and Services

Business Development Services

HITECHHAWAII.COM PORTAL – THE GATEWAY TO HAWAII’S TECHNOLOGY INDUSTRY

www.HiTechHawaii.com is Hawaii’s high-tech portal web site for marketing and promoting high technology in the Islands. As the central access point for technology industries, www.HiTechHawaii.com brings information about tech-industry resources, news, events, businesses, and jobs under one virtual roof.

New enhancements added to HiTechHawaii.com during 2003 include:

- two new categories of Hawaii’s technology and business resources:
 - networking and professional organizations
 - business mentoring
- Tech TV & Radio – listings of television and radio programs featuring local technology companies or industry issues;
- HiTechHawaii.com e-Newsletters:
 - HiTechHawaii.com Monthly Newsletter – subscribers receive information on site updates, highlighting the latest Tech Spotlight feature articles.
 - HiTechHawaii.com: This Week in Tech – subscribers receive a Monday morning update for the upcoming week’s Hawaii’s technology industry related events.

With the implementation of these enhancements, HiTechHawaii.com’s utilization has more than doubled since January 2003, increasing from 7,000 page views per month to 15,000.

HAWAII TECHNOLOGY BUSINESS DIRECTORY

The Hawaii’s High Technology Business Directory is an on-line guide to Hawaii’s technology companies. HTDC publishes the directory to encourage networking among Hawaii’s high technology companies and to help them sell their products and services. You can find the directory at <http://www.htdc.org/directory.asp>.

TECH BUZZ HAWAII

HTDC continued its strategic marketing partnership with PacificNews.Net and KHON-TV to produce Tech Buzz, a monthly technology magazine and weekly morning show, and to be featured on Flavors of Technology on Time Warner Cable of Hawaii, Dot.Biz Talk radio, and in PacificNews.Net magazine.

HTDC participated in the bi-monthly TechBuzz TV magazine, featuring MIC and MRTC companies and HTDC programs. Company representatives explained what their firms offer, what sets them apart from the competition, about their clients, and what their plans are for the future. The following companies or programs were featured:

February 2003	Hawaii Planz Administrators
April 2003	Hawaii’s Electric Vehicle Demonstration Project
June 2003	Oceanic Imaging Consultants
August 2003	Loea Communications and Mosaic at MRTC
October 2003	HTDC’s HSBIR program featuring Oceanit and NovaSol as SBIR awardees
December 2003	FastTrac training, Holiday Tech Fair

The weekly Tech Buzz Hawaii Morning Show on the Fox-2 Morning News featured popular television anchorman, Kirk Matthews, conducting interviews of MIC’s Hawaii Planz Administrators and Safe Water Systems, on HTDC’s SBIR program and bi-annual conference in November, and on the December Holiday Tech Fair.

Flavors of Technology on Oceanic Time Warner Cable’s Channel 16 had a faster-paced, youth-oriented format. HTDC showcased MIC tenants Laser Barcode Solutions, Blue Lava Wireless and 21st Century Systems.

Dot.Biz Talk Radio on KHVH AM 830 featured topics on business and technology. Dr. Bossert spoke on the half-hour show and discussed topics such as HTDC’s Manufacturing Extension Program and Hawaii’s Small Business Innovation Research program, as well as technology versus tourism with Hawaii Tourism Authority Marketing Director Frank Haas.

TECH JOBS HAWAII

1. TechJobsHawaii Consortium

The Tech Jobs Hawaii Consortium was formed in 2000 in response to the private sector's desire to organize a workforce development initiative specifically targeting former Hawai'i residents in the technology sector living in the continental U.S. The Consortium utilizes a website, www.techjobshawaii.org, to attract technology workers both in the state and from out of state. This website, as well as the Tech Jobs Hawaii Consortium, is sponsored by HTDC in partnership with the private sector.

The Consortium also hosts an annual Holiday Tech Fair, community fun fairs, and partners with K-12 schools for career days and mentoring programs.

TECH JOBS HAWAII 2003 ACTIVITIES

January 24, 2003

Pearl City High School College and Career Fair stressed the connection between the courses students take in school and the skills they will use in the workplace. HTDC provided guest speakers and an exhibitor for this event. HTDC's MIC program manager, Ken Tomi, Henk Rogers of Blue Lava Wireless and Brian Ho of Hi-Point Software were guest speakers. Hoku Scientific Inc. exhibited at the fair as well.

May 3, 2003

Tech Fun Fair at Windward Mall. Ten technology companies participated in the fair, sponsored by HTDC in conjunction with educational organizations. This community awareness event included the University of Hawai'i Colleges of Engineering and Computer Science. Windward district schools – Castle High School, Kahuku Elementary and He'eia Elementary Schools – actively demonstrated their tech projects such as multimedia productions and networking projects. The Waiialua Robotics Team, always a draw for audiences, demonstrated their winning robot strategies.

December 29, 2003

4th Annual Holiday Tech Fair at the Hawai'i Convention Center. This annual event is sponsored by four private schools – Punahou, Iolani, Kamehameha and Mid-Pacific Institute – in conjunction with HTDC. The event continues to bring awareness of Hawai'i technology activities to recent graduates and expatriates coming home for the Christmas holidays. Technology companies showcased their products, research and development, and job opportunities.

2. TechJobsHawaii.org – Where Hawai'i's Technology Companies and Qualified Job Seekers Connect

Hawai'i's expanding technology industry is creating a demand for technologically skilled employees. Three years ago, the TechJobsHawaii consortium formed and created www.TechJobsHawaii.org to provide a free, direct connection between job seekers, interns and employers. HTDC developed, maintains and enhances the website.

Upcoming enhancements include island-specific TechJobs pages (i.e., TechJobsHawaii.org/kauai), where job seekers can search for jobs on specific islands. As Kaua'i begins building its own technology based economy with Department of Defense-related organizations like the Pacific Missile Range Facility, there is a growing need for a specifically skilled technology workforce.

“The TechJobsHawaii.org site is an excellent resource to save companies time and money when looking for qualified tech employees who are interested in working in Hawai'i.”

– RICK HOLASEK, NOVASOL

“TechJobsHawaii.org is the only employment site we use because it continues to bring us quality people.”

– SAM GRIDLEY, INTECH HAWAII

3. Global Pau Hana Partnership

In May 2003, HTDC partnered with Global Pau Hana, a worldwide, web-based grassroots program that connects over 2,000 people with an affinity to Hawai'i. GlobalPauHana.org provides members with information on upcoming social events in their area, listings of Hawai'i expatriates living in their city, and most importantly updated information on job opportunities in Hawai'i. As a Global Pau Hana partner, HTDC developed and maintains the main Global Pau Hana website, while regionally based volunteers work to produce a robust, content-managed community portal website.



The Tech Jobs Hawaii and Global Pau Hana websites provide qualified candidates in Hawai'i and around the world with timely, useful information on job opportunities in Hawai'i.

MEDIA AND PUBLIC RELATIONS

HTDC continued its public relations and media programs in 2003 to build public awareness of its services and programs and to promote Hawai'i's tech businesses. By working closely with local print, radio and television journalists, HTDC generated media coverage for several conferences and workshops, articles on its incubator tenants, companies that graduated, HTDC's programs and initiatives, and general stories about technology. In addition, Dr. Bossert was a featured guest on many television and radio talk shows during the year and participated in numerous speaking engagements and conferences.

HTDC is a primary source of technology information and news within the state of Hawai'i for local news and magazine publishers.

Pacific News Net – HTDC serves on the advisory board and provides input on content and magazine focus. Dr. Bossert writes a column on programs or issues of interest to the technology community.

Dailies, news periodicals – HTDC is recognized as a point of contact for quotes and contacts on the technology industry, and its executive director was quoted prominently in several newspaper articles in 2003.

HTDC Programs and Services

Federal Research & Development Programs

HAWAI'I SMALL BUSINESS INNOVATION RESEARCH (HSBIR) GRANT & ASSISTANCE PROGRAM

1. Hawai'i SBIR State Matching Grant Program (July 1, 2002 through June 30, 2003).

The Hawai'i SBIR matching grant program was created by the Hawai'i State Legislature in 1989 under Act 196. The program encourages local companies to participate in the federal SBIR program, which provides R&D grants and contracts to small businesses. The Hawai'i matching grant program provides up to \$25,000 to Hawai'i companies that have won a federal SBIR Phase I award, and have good potential to expand the project, create quality jobs, and increase R&D activities in Hawai'i.

HOW THE FEDERAL SBIR PROGRAM WORKS

SBIR is a three-phase program to help early-stage firms that are conducting R&D projects addressing critical national needs. In Phase I, the company explores the technical merit or feasibility of an idea or technology. Most SBIR agencies generally award up to \$100,000 for a six-month effort. In Phase II, the company expands upon Phase I results. Most agencies provide up to \$750,000 over a two-year period. The company performs R&D work and evaluates the project's commercial potential. In Phase III, the small business is responsible for securing funding from industry or other non-SBIR federal sources to further develop and commercialize the project. The likelihood of projects transforming into commercial applications is an important consideration in the process of deciding which companies are worthy of an award.

The ten U.S. agencies with the largest R&D budgets participate in SBIR. They are the Departments of Agriculture, Commerce, Defense, Education, Energy, Health and Human Services, and Transportation, the National Aeronautics and Space Administration (NASA), the National Science Foundation (NSF) and the Environmental Protection Agency (EPA). The agencies make over \$1.5 billion available to the SBIR program annually, periodically releasing solicitations and broad topic announcements for projects of interest to them.

HTDC awards Hawai'i SBIR matching grants to qualified applicants that are based in Hawai'i, plan to expand their R&D activities in Hawai'i, and are likely to create quality jobs as a result of their project work.

HTDC ably promotes the SBIR program and provides technical assistance to help Hawai'i's small R&D firms successfully compete for SBIR awards. In FY 2003, ten local companies won 16 Phase I awards worth more than \$1.6 million. Since 1989, 45 Hawai'i companies have won 204 SBIR awards worth over \$34 million from the federal SBIR program, nearly \$3.2 million from Hawai'i's SBIR Matching Grant Program, and attracted over \$12 million in Phase III (non-SBIR program) funds and sales revenue. For every State dollar invested in the program, Hawai'i companies have attracted roughly \$11 in federal funds.

The annual Hawai'i SBIR matching grant program budget for FY 2003 was \$260,000. However, \$50,000 was advanced from the FY 03 budget to cover HSBIR applications received at the end of the year. A budget of \$210,000 remained. All HSBIR grant applications that HTDC reviewed were deemed meritorious and deserving of full funding. However, because of budget constraints, each of the 16 applications received less than the maximum \$25,000 award.

2. SBIR Hawai'i Matching Grant Awardees July 2002 – June 2003

SBIR Project Summaries (companies that have won their first ever SBIR award are denoted with an asterisk).

Black Pearls, Inc. (Kailua-Kona, Hawai'i Island):

To identify nacre pigments in oysters for the purpose of improving the control of pearl colors for commercial farms.

Hawaii Agricultural Research, Inc.* (Aiea, O'ahu):

To determine when stevia plants produce the maximum amount of the economically important extract. HARI will test several newly developed lines of stevia to determine whether they are more suitable for year-round production in Hawai'i.

Hawaii Biotech, Inc. (Aiea, O'ahu): Two awards – to identify protease inhibitors that target anthrax lethal factor and are effective on both natural pathogens and intentionally modified pathogens; and to produce a safe and effective vaccine for West Nile virus infection in humans.

Hokupa'a Technologies* (Honolulu, O'ahu): To develop an advanced form of transparent network TCP proxies for both satellite and terrestrial broadband wireless communications resulting in an affordable, high-capacity wireless Internet.

InkiTiki Corporation (Kapa'a, Kaua'i): To develop a theory for modern games, bring relevant information and tools together into a single product, and explore the benefits of using innovative artificial intelligence techniques to enhance software protection measures.

Innovative Technical Solutions (Honolulu, O'ahu): Four awards – to develop an innovative data link that enables tele-operation of a Tactical Unmanned Ground Vehicle from a remote Operator Control Unit; to integrate two technologies (functional near-infrared imaging and real-time spatial-spectral target analysis and report system) that merge human and machine capabilities to improve target detection capabilities; to design and develop a wireless Functional Near Infrared imaging for cognitive event detection system (based on the existing fiber-optic wired system) for the commercial clinical market; and to provide a lightweight, low-power download or full-duplex link for broadband communication between manned and unmanned remote stations on land, sea and air.

Makai Ocean Engineering (Waimānalo, O'ahu): To develop an innovative system approach for optimally evaluating and developing economically feasible OTEC facilities that integrate ancillary technologies available for military and civilian communities.

Oceanit Laboratories Inc. (Honolulu, O'ahu): Three awards – to develop an improved computational fluid dynamic model to be used to manage harbors, where vessels are routinely at risk from other closely approaching vessels and harbor boundaries; to develop a compact, lightweight, eye-safe LIDAR (Light Detection And Ranging) system to monitor the atmospheric mixed layer (the zone where pollutants are dispersed), specifically for aerosol gradient detection; and to develop a new rapid karyotyping technique permitting rapid identification of altered chromosomes and diagnosis of cancer and other diseases.

OCEES* (Honolulu, O'ahu): To develop an accurate, functional computer modeling tool to assist in determining the economic and technical feasibility of implementing an integrated OTEC system as a viable option for tropical island bases.

Pacific Paradise Orchids* (Hilo, Hawai'i Island): To develop new forms of flowering orchid plants for the export market and to develop a coordinated production and marketing system for Hawai'i growers.

3. Federal R&D Funding Opportunities for Small Businesses: Outreach, Technical Assistance & Commercialization Training

Throughout 2002-2003, HTDC continued to provide technical assistance training to help companies become more competitive in participating in the SBIR program. The following activities were subsidized by Rural Outreach Program and FAST (Federal And State Technology partnership) grants awarded by the U.S. Small Business Administration, Office of Technology in 2001 and 2002.

October 15-16, 2002 –

SBIR Phase I Proposal Writing Workshop and "Train-the-Trainers" Proposal Writing Workshop.

Conducted by PBC, Inc. of Colorado, SBIR consultants Mr. Mark Henry and Mr. Randy Dipner conducted a train-the-trainers workshop for local business consultants from the Hawaii Small Business Development Center Network, University of Hawai'i, and private consultants on how to effectively consult with businesses that are proposing to SBIR. On the second day, PBC conducted a similar workshop targeted at small businesses. Thirty participants were trained on how to write a competitive Phase I proposal.

March 27, 2003 –

Intellectual Property for SBIR Workshop.

Mr. Robert Hunter, patent agent and SBIR consultant, conducted an IP workshop for 25 participants. Following the workshop, an SBIR mentoring session was held at Buca di Beppo restaurant. Six experienced SBIR awardees shared lessons learned on succeeding in SBIR with ten individuals that were planning to submit to SBIR for the first time.

May 19, 2003 –

Government Accounting Systems for SBIR Workshop.

Jeff Lubeck, of Strategic Business Solutions, conducted a workshop on SBIR budgeting and accounting for 21 participants. Immediately following the workshop, an SBIR mentoring session was held with three experienced SBIR awardees and eight individuals that planned to submit their first SBIR applications.

November 18-19, 2003 –

8th Biennial Hawai'i SBIR Conference.

HTDC conducted a SBIR and STTR conference on O'ahu. Eleven federal SBIR program managers and representatives from Department of Defense (Air Force, Army and Navy); Department of Commerce, National Oceanic and Atmospheric Administration (NOAA); Department of Energy; Department of Transportation, National Institutes of Health; National Science Foundation; NASA and the U.S. Small Business Administration Office of Technology spoke to 85 registrants representing business interests across the state. The federal managers provided information on how to apply to the SBIR and STTR programs, and provided specific information on funding opportunities from within their respective agencies. For the first time, the conference offered tracks to benefit the more experienced SBIR companies that have won Phase I awards and are preparing to compete for Phase II and commercialization. The training tracks included: Phase I and II Proposal Writing (Mark Henry, PBC, Inc.); "Creating an SBIR Budget" and "Basic Government Accounting" (Jeff Lubeck, Strategic Business Solutions); "Intellectual Property 101: How to Protect Your Invention" and "Maximizing the Value of Your Intellectual Property" (Robert Hunter); and two tracks on "Attracting Private Investment" (John Chock, Hawaii Strategic Development Corporation, Randy Havre, Hawaii Venture Group, LLC, Leigh-Ann Miyasato, HIBEAM). As a result of the conference, many of the companies in attendance indicated that they planned to submit applications to both the SBIR and STTR programs.

ONE-ON-ONE CONSULTING ON COMPETITIVE PROPOSAL PREPARATION

Federal grant applicants usually view proposal writing as the most arduous task in the process. Understanding how to develop a proposal strategy is the key towards writing successful proposals. In order to increase the success rates of Hawai'i companies competing for federal awards,

and to encourage greater local participation, HTDC has contracted with PBC Inc., a nationally renowned SBIR consulting firm. PBC has evolved a methodology that produces a win rate significantly above the national average. Starting with a white paper, HTDC, its proposal review partners and PBC work with company applicants to develop a compelling proposal. Companies agree to cost-share the consulting fees.

In addition, HTDC contracts with Robert Hunter to perform proposal reviews for those applicants that already have the majority of the proposal written and are looking for critiques relating to addressing proposal basics, such as clearly defining the problem, the proposed solution, describing the national impact if successful, etc.

HAWAI'I ELECTRIC VEHICLE DEMONSTRATION PROJECT (HEVDP)

HTDC established the Hawai'i Electric Vehicle Demonstration Project in 1993 to develop advanced technologies for cleaner, quieter, and more fuel-efficient vehicles. HEVDP represented the Hawai'i Consortium in the Defense Department's Electric and Hybrid Vehicle (EHV) Technology Program, sponsored by the Defense Advanced Research Projects Agency (DARPA). DARPA established the EHV Program with seven regional consortia to accelerate the development of dual use, clean fuel technologies for both the military and commercial transportation sectors. Success under the DARPA Program led to HEVDP's continuing collaboration with the other six consortia in the Department of Transportation Advanced Vehicle Technologies Program (AVP). More recently, HEVDP collaborated with the US Air Force to establish a National Demonstration Center at Hickam Air Force Base to evaluate advanced drive systems and supporting infrastructure for future military vehicle applications.

Ongoing Projects

Hyundai Santa Fe Electric SUV Demonstration and Evaluation

– Completed the initial performance evaluation of the first all-electric Hyundai Santa Fe sport utility vehicles (SUV) on June 30. Enova Systems, after conducting electric vehicle maintenance and service operations in Hawai'i for ten years, designed and

developed the 60kW drive system for the 15 electric SUVs. HEVDP managed the evaluation of these pilot vehicles in use by Hawai'i State government, City and County of Honolulu government, Hickam Air Force Base, and Hawaiian Electric Company. The SUVs made limited use of the rapid charging stations installed around the island of O'ahu under the EV Ready State Project. In partnership with HEVDP, the University of Hawai'i provided project support with data collection and analysis. HEVDP provided performance data to Hyundai Motor Company to assist them with future production decisions. Further evaluation with rapid charging will continue with three vehicles for two more years. Twelve vehicles were returned to Korea for similar demonstrations.

National Demonstration Center at Hickam Air Force Base

– In pursuit of dual use technologies, HEVDP collaborated with the U.S. Air Force Advance Power Technology Office (APTO) and created a National Demonstration Center to evaluate advanced transportation technologies at Hickam Air Force Base and other military installations on O'ahu. Initially the project evaluated light- and heavy-vehicle drive systems and battery-charging systems. Currently, HEVDP is developing the first fuel cell-powered vehicle to operate in Hawai'i. This is a fuel cell/battery hybrid electric drive bus that will be put in service at Hickam. The next major project for Hickam will be the installation of a hydrogen generation system to support the operation of the bus and future fuel cell vehicles. Other projects pending include a hybrid electric aircraft loader, a turbine-powered electric tow tractor, and light-duty fuel cell-powered vehicles.

Hydrogen-Powered Fuel Cell Electric Bus – HEVDP converted an El Dorado National hybrid electric bus to a battery/hydrogen-powered fuel cell bus with an Enova Panther 120 kW drive system, a Hydrogenics Corporation 20kW proton exchange membrane (PEM) fuel cell power system, and advanced batteries that are compatible with the rapid-charging stations installed around O'ahu under the EV Ready State Project. The bus will provide shuttle service on Hickam Air Force Base, as well as transport passengers to designated locations in Honolulu. This bus has triple the range capability of the earlier battery-only electric drive bus that HEVDP provided to the Air Force under the National Demonstration Center initiative.

Future Initiatives

Arizona Memorial Tour Boats – In partnership with the U.S. Department of Transportation, U.S. Navy and National Parks Service, HEVDP will develop a zero-emission vessel as an alternative to existing diesel-powered Arizona Memorial tour boats. The effort is based on a feasibility study completed by HEVDP under the AVP. The new vessel, built with composite materials, will incorporate the use of fuel cell technology to power electric motors. The goal is to produce four new boats that will greatly reduce noise and air pollution. Additionally, the boat's design and construction materials will significantly reduce life-cycle costs.

Development of Fuel Cell Transit Buses – HEVDP is participating in an International Fuel Cell Bus Working Group, sponsored by the U.S. Department of Transportation, with a future objective of developing fuel cell transit buses for demonstrations at various sites throughout the country. Honolulu is one of the preferred sites.

Hydrogen Economy Development – HEVDP is collaborating with the Hawai'i Natural Energy Institute at the University of Hawai'i to support the transition to a hydrogen-based economy in Hawai'i. Planned projects include stationary and transportation applications for fuel cells, and hydrogen generation, storage, and distribution.

ADVANCED TECHNOLOGY PROGRAM (ATP) & TIBBETTS AWARD

In April 2002, Kona Blue Water Farms became Hawai'i's first Hawai'i owned for-profit company to successfully compete for ATP federal funds, receiving a \$1.5 million grant. In October 2002, Hawaii Biotech Inc. became Hawai'i's first two-time recipient of the U.S. Small Business Administration's Tibbetts Award. Named for Roland Tibbetts, who is credited with the creation of the SBIR program, the Tibbetts Award is presented annually to small business firms, projects, organizations and individuals across the U.S. who exemplify the very best in SBIR achievement.

HTDC Programs and Services

Hawai'i Technology Industry Surveys

2002 STATE OF TECHNOLOGY IN HAWAI'I SURVEY REPORT

HTDC commissioned Dr. Michael Morris of PenteVision USA to conduct a survey of the technology industry and the key groups that influence, support, or interact with the high-tech community in Hawai'i (e.g., government leaders, service providers, and support agencies). The study assessed attitudes, perceptions and needs of the high-tech sector. HTDC was interested in learning about the needs of individual firms, their views about the current status of high-tech development in Hawai'i, and their overall priorities to advance high technology in general. The results provide insight for developing public policies, marketing plans, and creating support programs for high-tech entrepreneurs and inventors going forward. The study was conducted in collaboration with the Pacific Asian Center for Entrepreneurship at the University of Hawai'i (PACE). The report, "**High Technology in Hawai'i: Where We Are and Where We Need to Go – A Survey of Key Constituencies**," was part of a "State of Technology in Hawai'i" review that was presented to the Legislature in January 2003.

Financials

THE 2003 FINANCIAL SUMMARY

Statement of Funding, Expenditures and Encumbrances for fiscal year
July 1, 2002 through June 30, 2003

Sources of Funds

Federal Funds (Hawai'i Electric Vehicle Demonstration Project)	\$	748,425
General Funds	\$	1,246,354
Special Funds	\$	1,338,246
Total Funds	\$	3,333,025

Expenditures and Encumbrances

Hawai'i Small Business Innovation Research (SBIR) Grant Program	\$	260,000
Administration	\$	678,881
Federal Projects	\$	748,425
State Projects	\$	1,645,719
Total Expenditures & Encumbrances	\$	3,333,025

HTDC

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