Managing
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High-Tech Tooling Around

Entrepreneur wants to help those ignored by for-profit world

By Nicole Wallace

The smart bomb was what gave Jim Fruchterman his start in the nonprofit world. In an applied physics class at the California Institute of Technology, he learned that the bomb, with a photograph of its target, could use pattern-recognition technology to find that target and destroy it. Mr. Fruchterman reasoned that the same technology could be used to build a device that would read text for people who are blind.

It took 10 years and several high-technology start-ups before Mr. Fruchterman returned to the idea. But when he did, through a charity he started called Arkenstone, he hit on what proved to be a winning concept. From 1989 to 2000, Arkenstone provided more than 35,000 book-reading machines to people with visual and other disabilities and brought the price of those machines down significantly. In June 2000, a for-profit company bought Arkenstone's operations, and even its name, for approximately $5-million.

Now, Mr. Fruchterman is looking to repeat his success using the proceeds from that sale and the same formula: finding new uses for existing technology to benefit people and causes not currently being served by commercial markets.

Through his Benetech Initiative, Mr. Fruchterman runs an incubator for a diverse mix of technology projects: an online service that allows people with disabilities to share digital books, a secure database for international human-rights workers, and development of a handheld device that would make it easier for blind people to read signs and use automatic teller machines and other devices.

Challenging Times

The enterprise is proving more challenging than Mr. Fruchterman first anticipated. The technology landscape has changed significantly since the heady days when he first formulated his broad vision for the group. Benetech had expected to find most of its financial support from individuals at technology companies, but the industry's free fall in recent years has led the organization to seek money from foundations and wealthy people in a variety of fields.

Despite the changing economic climate, Mr. Fruchterman has remained optimistic about Benetech's future.

"Benetech has an opportunity to become one of the major philanthropic initiatives coming out of the tech community," says Mr. Fruchterman. "To make that happen, we have to go out there and perform."

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Mr. Fruchterman has had both hits and misses in his career as a technology entrepreneur. The first start-up he was involved with was an ill-fated rocket company whose product blew up on the launch pad, and another rocket company failed to secure venture capital. But on his third try, he hit the jackpot with Calera, a company that raised $25-million in venture capital and became one of the country's leading producers of optical character-recognition technology.

Five years after starting Calera, Mr. Fruchterman had one of his staff members build a prototype text-reader based on the idea he had at Caltech. The prototype cost $50,000, and an accompanying study estimated that at that time the market for reading machines — primarily people with vision impairments — was about $1-million a year.
"Our investors were not excited about a $1-million market, and I understood their point," says Mr. Fruchterman.

So with Calera's blessings — and a deep discount on its character-recognition technology — he left the company and founded the nonprofit Arkenstone. Rather than build a reading machine from scratch, the organization developed a system that combined a personal computer with one of Calera's optical character-recognition cards, a scanner, and a voice synthesizer. The system cost just under $10,000 in 1989. The price of both hardware and software fell in the 1990's, and when Arkenstone was sold in 2000, the system was available for less than $2,000.

Fee-Based Service

Although Arkenstone received in-kind donations from technology companies and a few cash gifts, the organization relied primarily on money from the sale of its reading machines to operate. Whenever possible, says Mr. Fruchterman, Benetech will also seek ways to charge fees or produce revenue to sustain projects after their start-up phase.

Benetech's first project — Bookshare.org, an online service that allows people who are blind or have other disabilities that make it hard for them to read printed text, such as dyslexia, to share digital books — is designed to be a break-even venture. Members pay a $25 set-up fee and a $50 annual fee to join the service.

The service went online last month with more than 7,500 digital books donated by volunteers, many of whom are former customers who scanned the books using the Arkenstone machines. Benetech expects that it will spend $1.3-million, mostly from proceeds of the sale of Arkenstone, to get Bookshare through its first year. The charity projects that Bookshare can be self-supporting by the end of next year if it attracts 12,000 to 16,000 members.

'A Piece of the Puzzle'

While Bookshare will probably never be so profitable as to attract a commercial buyer, Mr. Fruchterman says it's a good example of the kind of nonprofit technology project that can pay for its own operating costs after the start-up investment has been made.

"Jim is always thinking about sustainability, about revenue recovery, about how is this something we can do without going to get grants, without going to get donations," says Patrick Ball, who works on human-rights programs at the American Association for the Advancement of Science, in Washington. Benetech does look for grants, he says, "but for most nonprofits, that's where funding starts and ends." He adds: "With Jim, that's a piece of the puzzle."

Mr. Ball is working with Benetech on its other major project, a secure information-management system for human-rights organizations. Designed to look and feel like an e-mail program, Martus, which is the Greek word for witness, will encrypt the descriptions of human-rights violations that the organizations collect from victims and witnesses and save the information on multiple servers. To find out what human-rights workers needed most, Benetech met with charities in Cambodia, Guatemala, and Sri Lanka.

Starting this fall, Benetech will offer the finished product free, because it feared that any payment scheme would discourage human-rights groups from adopting the technology. Organizations in Guatemala, Russia, and Sri Lanka will begin to test the system this summer.

Mr. Ball says the Martus project is a good example of how Mr. Fruchterman's thinking differs from that of many in the nonprofit world. Instead of putting his ideas for new projects in front of foundations and other donors and letting them decide which should be developed, Mr. Fruchterman waits until he has a prototype before asking foundations and other donors to invest in it.

So far, the group's efforts have paid off, receiving a $250,000 grant from the Open Society Institute, in New York.

Jonathan Peizer, chief technology officer for the Open Society Institute, admires Mr. Fruchterman's passion for problem solving. "He's an engineer by profession, a gee-whiz kind of guy," says Mr. Peizer, who describes Mr. Fruchterman's approach as, "let's figure out a solution and make it work."

Tempered Goals

For Mr. Fruchterman, finding the right financial model for his charity has been a work in progress.

As the economy, particularly for technology, has weakened, Mr. Fruchterman has had to temper his fund-raising goals. In an organization plan written in September 2000, Benetech said that it hoped to raise $1-million in the second half of 2001 and at least $50-million in the following three years.

"We've adjusted our expectations," says Mr. Fruchterman. "I had dreams of raising enough money that we could be working on 20 projects in 2003."

Benetech raised about $500,000 in the second half of 2001, and its goal for this year is to raise a little more than $2-million. Keeping that fund-raising pace, the organization will be able to sustain its current roster of three projects and start another one. Among the challenges Benetech hopes to tackle soon: developing new tools to help clear land mines safely.

Mr. Fruchterman expects to spend at least half of his time this year on fund raising, compared with only 10 percent in 2001. He says the increase is due in part to the need to rely less on the money that the organization received from the sale of Arkenstone and because he has learned that it takes more time to raise less money in the current economic environment.

Engineers Available

Yet the downturn in Silicon Valley has had its silver linings for the organization.

Recruiting the highly skilled software engineers Benetech needs for its projects has become much easier. A few years ago, when the demand for technology talent was at its peak, a senior engineering position at Arkenstone remained vacant for over a year.

"We can never afford to go toe to toe in a bidding war with a for-profit and pay top dollar — although our wages are average or slightly below average for the high-tech sector — so the loosening of things meant that we didn't have to," says Mr. Fruchterman. Benetech's staff of 16 is equally split between technical and nontechnical employees, with several consultants also working on various projects.

And in January Benetech moved into office space in downtown Palo Alto that a dot-com had given up before it had even had a chance to move into the building. Benetech is leasing the space for approximately one-third of the price it was going for 18 months ago.

A less positive aftereffect of the tech boom of the 1990's, acknowledges Mr. Fruchterman, is a lingering resentment against the perceived arrogance of donors from the technology world who were going to use their business savvy to revolutionize the charity world through so-called venture philanthropy.

"At its most caricatured it's, Hi, I'm here from the tech sector. I know how to do things, and you don't. So do what I tell you to do and everything will work out great," explains Mr. Fruchterman.

He says that while Benetech also seeks to use business techniques to pursue social objectives, the organization's aim is to work with other nonprofit organizations.

"Our model has not been, We're going to use technology to fix the nonprofit sector," he says. Instead, his message is: "Hey, there are some barriers to technology use in the nonprofit sector, and if we treat the nonprofit sector or disadvantaged populations as customers, we can build tools for them."

Tom Parks, a program officer at the Asia Foundation, in San Francisco, which plans to award grants to cover training and other costs to help human-rights groups in Thailand start using Benetech's Martus system, believes that the willingness of Benetech employees to work alongside other nongovernmental organizations is the charity's primary strength.

"They're very aware of the nonprofit community, and they're not assuming that they know what an NGO might need," says Mr. Parks. "They've gone through tremendous efforts to engage human-rights NGOs around the world in trying to decide what Martus might look like."

In his student days at Caltech, Mr. Fruchterman says, before the reading-machine epiphany, he worried how he could ever be like the brilliant scientists who were his professors and come up with new ideas. Now, he says, he realizes that the challenge for Benetech is to winnow down the scores of ideas that come in to the organization and focus on the handful that can really make a difference in people's lives.

Benetech
TECHNOLOGY SERVING HUMANITY

The organization considers projects in the fields of disability, education, human rights, and literacy. Some ideas come from Benetech's employees and board members, while others come from outside the organization.

Mr. Fruchterman compares the way that Benetech chooses its projects to the way venture-capital companies select which ventures to invest in. After several rounds of narrowing the pool of potential projects, a Benetech employee is assigned to write a business plan for the projects still in the running and then presents the plan to Benetech's top executives. Among the elements they consider: whether another organization is already working on a similar project, the cost of the project, and whether Benetech has the technology expertise on its staff to make the project succeed.

The most important factor, though, says Mr. Fruchterman, is which project can do the most good for the most people. He says a number of ideas have come in for technology that could assist people who are both blind and deaf. But given Benetech's limited financial resources, he says, the organization has had to say no to projects that address the needs of such a small group of people.

"We're very conscious of the fact that you could splinter yourself into 50 million different projects and accomplish nothing," says G. Gervaise Davis III, an intellectual-property lawyer in Monterey, Calif., who has served on the board of directors since Arkenstone's founding.

Even though his organization selects its projects the way venture capitalists do, Mr. Fruchterman knows that with limited funds and a tight fund-raising environment he doesn't enjoy the same luxury as venture capitalists who need only find one big hit to balance out other so-so efforts.

Says Mr. Fruchterman: "I can't do 10 projects and have two really succeed and three sort of succeed. I mean, they're not all going to succeed, but I've got to have a better batting average."

THE BENETECH INITIATIVE

History: Benetech's predecessor organization, Arkenstone, was founded in 1989 by Jim Fruchterman, a technology entrepreneur, to build reading machines for people with limited vision. In June 2000, Freedom Scientific, in St. Petersburg, Fla., purchased Arkenstone for $3-million in cash and approximately $2-million in stock and future royalties.

Organizational structure: The Benetech Initiative comprises three legal entities. Benetech's projects for people with disabilities fall under the nonprofit group Beneficent. A second nonprofit organization, Beneficent Technology, is for projects outside the disability field. The third entity, Bengineering, is a for-profit subsidiary owned by Beneficent.

Purpose: To build products and provide services that harness technology for humanitarian purposes in the fields of disability, education, human rights, and literacy.

Finances and sources of funds: The operating budget for 2002 is about $3-million. The organization hopes to raise a little more than $2-million from individuals, foundations, and corporations. It will rely on proceeds from the sale of Arkenstone for the rest of its expenses.

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