



# The SQUID

## Innovation in law enforcement

By Christina Estes

In the animal world, the giant squid preys on sperm whales. In engineer Martin Martinez's world, the squid preys on potential terrorists. Martinez's SQUID, an acronym for Safe Quick Undercarriage Immobilization Device, has attracted the attention of the U.S. Department of Homeland Security.

"They've been trying to find a way to stop cars," explains Martinez. "The spike strips don't always work."

Martinez thinks his idea will work. The SQUID involves launching a web that will stop a vehicle's rotating components. In the most simplistic terms, it's like getting string caught up in all the moving parts under your car.

Thanks to a \$100,000 grant from the federal Small Business Innovative Research (SBIR) program and a \$5,000 Arizona Federal and State Technology (AZ FAST) grant administered through the Arizona Department of Commerce, Martinez's company was able to conduct tests to demonstrate how the SQUID would work. His company, Engineering Science Analysis Corp., is now working on a Phase II SBIR proposal to secure a \$750,000 grant for more research and tests.

"At the end of Phase II, we should have a product ready to go," says Martinez.

If successful, the SQUID could find a huge market among the military, law enforcement and U.S. Border Patrol. And it's likely that even more products will spawn from the SQUID.



**Martin Martinez**  
President, Engineering  
Science Analysis Corp.

"Usually when you come up with an idea, there's always these other things that come up with it," he says. "Sure enough, there are a lot of other things we can do."

Those ideas are not completely patented so he's not sharing the details, but Martinez and his team have a proven record of turning what he calls "crazy ideas" into successful products. They used simulation and product-development techniques, tools and processes used in aerospace industries to design a better baseball bat—one that's less likely to break or cause painful vibrations. The Louisville Slugger Exogrid, which retails for more than \$300, is dubbed "the best Louisville Slugger bat produced to date, period."

By using sophisticated computer programs, Engineering Science Analysis Corp. was able to enlarge the "sweet spot" on a golf club and to design a club that makes a specific sound when it hits the ball just right.

The secret to success for Engineering Science Analysis Corp. is a combination of passion shared among its seven-employee work force and shorter product-development time that allows its customers to get the most bang for their buck.

And, if Martinez gets his way, you could soon be looking at squid in a whole new light—not as a 10-arm creature capable of swimming faster than any other invertebrate, but as an Arizona creation capable of stopping potential terrorists in their tracks all around the world. ■

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# iCrossing

## The best way to a consumer's heart is through their search

By Salvatore Caputo

“If you know how consumers search, you know how they think,” says Jeffrey Herzog, founder and CEO of Scottsdale-based iCrossing, an advertising and marketing agency that targets consumers online and via wireless devices.

Ask Herzog what his company is all about and he'll tell you, “We're an advertising agency for the future of advertising.”

That might sound like the booster talk you'd expect from a company's CEO, but iCrossing walks the talk. For instance, while other “new media” companies were dot-bombing in 2000, 3-year-old iCrossing achieved profitability.

Today, the Scottsdale-based company, founded in 1998, has 25 *Fortune* 500 clients, 230 employees, and offices in New York, Chicago, San Francisco and Dallas.

The Executive Council of New York honored Herzog for innovation and leadership with a New York Ten Award in 2005. He was also named to *BtoB Magazine's* Who's Who List, which honors top executives in business-to-business services.

Learning about potential customers through their search habits is the key to iCrossing's business. The interactive capability of the Internet turns the traditional advertising model on its head, he says.

“The business always sought the customer (in the traditional model),” Herzog says. In print and broadcast media, advertisers “would blast messages out, only to reach 1% to 2% of people who might be interested.”

By contrast, “The customer seeks the business in this new generation of media and advertising,” and iCrossing technology takes advantage of that through what Herzog calls “reverse direct marketing.”

“We deliver 100% prequalified, motivated, targeted customers, because they've identified themselves as being in the target audience by writing a search query.”

A consumer's Web searches create business leads, under the assumption that when a consumer searches for a particular product or service that person is interested in it.

So if a company's keywords match the keywords of the consumer's search, the company's message is getting to inherently interested consumers and reaching virtually no one who doesn't care.

“When someone does a search, they can either find one of our clients or find our clients' competitors,” he says. “We make sure the latter doesn't happen.”

iCrossing helps advertisers create messages (“Those messages have been built to meet the specific interests of the audience”), Web sites and online ads, and finds the keywords to hook up online searchers with the company's clients.

“The end result is making sure our clients have visibility in front of their target audience any time they search.”

The company's client list includes FedEx, General Motors, Symantec, Fairmont Hotels and Resorts and Dex Media among others.

In addition, iCrossing's Interest2Action technology can track searches, the results of the search, how much time a person spends on the site referred by the search, whether the person buys a product and whether the person returns one—providing a wealth of market research for advertisers seeking to use the reverse direct marketing approach.

The idea, he says, is to deliver the right message to the right audience at the right time, and to have the right metrics to track results.

“That is a whole lot better (than the traditional advertising model) because it's wholly quantifiable, while the old way is hardly quantifiable in any way.” ■

“The customer seeks the business in this new generation of media and advertising.”

—Jeffrey Herzog, founder and CEO of iCrossing.



The company has received kudos from AdAge.com and Adweek. In 2005, it was named best agency by *OMMA (Online Media, Marketing and Advertising)* magazine, which said, “iCrossing outclasses big agency rivals on performance and thought leadership.”

So what exactly is iCrossing doing that draws such results and praise?

The company has proprietary technology that tracks people's Internet searches, and, as Herzog asks rhetorically, “If I track your last 100 searches on Google, how much would I know about you?”

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# SMALL Science

## Building a Nano Future

By Christina Estes

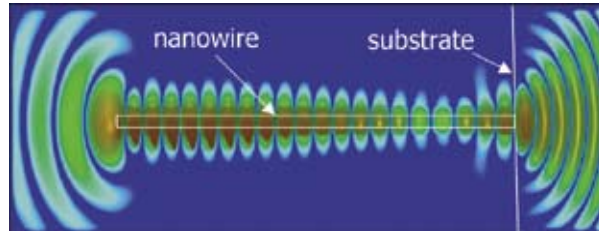
To think big, Matt Kim thinks small. “If you can imagine the thickness of a strand of your hair,” says Kim, “it’s like a million times smaller than that.”

“That” is nanotechnology. Generally speaking, it’s the science of the small. Ambitiously speaking, Kim calls it the science of Arizona’s future.

“In Arizona, I think nanotechnology and biotechnology combined can make us a leader in America,” says Kim. “Bio deals with drugs, and nano would be the delivery system. Sometimes the way you deliver the drug is just as important as the treatment itself.”

To successfully combine the two sciences requires a simple, yet challenging, skill—communication.

“What happens when you do science completely in a test tube [is that] you are isolated,” explains Kim.



The AZ Nanotech cluster is a non-profit organization dedicated to the promotion and advancement of Nanotechnology disciplines in Arizona.

“There’s a lot of good technology at universities that never goes commercial because no one has the drive or communication skills to do it.”

Kim understands the value of sharing information. That’s one reason he chairs the 200-member Arizona Nanotechnology Cluster.

“Small companies, especially in nanotechnology, need a methodology of leveraging each other’s skills and just talking to each other about what’s up and coming,” says Kim.

Lately, Kim’s been talking about his new project. His Scottsdale-based company, QuantTera, just landed a two-year deal with the U.S. Air Force.

“We’re going to make lasers for their satellite communication to enable high-speed communication between satellites,” explains Kim.

While the immediate focus will be on a tiny computer chip for the Air Force, Kim keeps thinking big.

“There are commercial applications for telecommunications,” he says. “We need more and more information all the time.”

Getting small-business information in Arizona has proved to be fairly easy for the company founder and president.

“In Arizona there’s a real hunger for technology,” says Kim. “So, we’ve been able to get a lot of help from the Department of Commerce and other local organizations and companies.

Kim doesn’t think his business would have fared nearly as well in other states with bigger programs.

“For small companies, Arizona is a great place to be because there’s more intimacy,” explains Kim. “When I was in Chicago, I went to people—and they were great people—but they are so busy, especially if you’re trying to do things a little differently.”

Kim likes to point out that the Arizona Nanotechnology Cluster does things a little differently.

“We don’t ever charge for our monthly seminars. A lot of the things we do are pro bono,” he says. “That’s what we want to do—share information.”

If Kim can convince enough technologists to think that way, his vision of Arizona as a nanotechnology leader could happen. It will certainly take longer than a few nanoseconds, but it can be done. ■

# NPower Arizona's Marsha Lamb...

## The "Softer" Side of IT

Many of us in this business got started as hard-driving, profit-oriented, 24/7, technocrats with visions of high earnings and luxurious lifestyles. That is why it's so refreshing to meet a successful CEO/systems engineer who actually got her start as a Montessori teacher, smiling broadly as she watched her preschool students play with the personal computer she brought into class one day.

"That was a long time ago," Marsha Lamb says cheerfully, "but I still think of it as a pivotal moment." Her arrival just about 100 days ago at the helm of NPower Arizona came at another pivotal moment, when the young nonprofit sought new leadership to take it beyond the original "seed" phase into a period of sustainable operations and productive service to its nonprofit clients in Arizona. In her quiet, deliberate way, Lamb set out to do just that, spending her early days assessing team strengths, recruiting new board members and developing grant opportunities that will help provide new programs and services for its more than 125 nonprofit members.




  
**Marsha Lamb**  
 CEO  
 NPower Arizona

“Ideally, we want to be a catalyst for social improvements in Arizona.”

Marsha Lamb, CEO of NPower Arizona

NPower Arizona, whose mission is helping nonprofits use technology to better serve their communities, began three years ago with support from several local funders, in addition to national funding from Microsoft Corp. "We serve nonprofits exclusively, and because we're a nonprofit ourselves, we're able to provide our clients rates not normally found on the open market," says Lamb. Part of that is made possible through funding from local and national foundations and corporate sponsors, with the remainder coming from yearly membership and consulting fees from its membership base.

The organization provides the usual "hard" side of IT services required by most organizations: desktop/server support, Web development, custom database creation and

technology planning. However, because so many NPower clients are in the business of providing social services, the company is also developing expertise on the "softer" side of IT: using measurement and analysis techniques to help track those social efforts, not only assessing the quality of services currently being provided, but actually predicting what new services will be needed in the future.

"I see us as a kind of transforming agent or technology translator for these groups," says Lamb. "We're not about technology for its own sake. Ideally, we want to be a catalyst for social improvements in Arizona. We're here to help our members achieve their missions." ■

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# You might qualify for a tax credit for up to 35%!

The Angel Investment Tax Credit, signed into law by Gov. Janet Napolitano, made \$20 million available in tax credits beginning July 1, 2006, through June 30, 2011. As recommended by the Governor's Council on Innovation and Technology and sponsored by Sen. Barbara Leff, this Arizona tax credit will assist early-stage small businesses in attracting the much-needed capital to expand operations and bring new ideas, products and services to market.

## What benefit does the Angel Investment Tax Credit program provide?

An Arizona income tax credit is made available to investors who invest in early-stage "qualified small businesses." The credit can be used to offset Arizona taxes over a 3-year period.

## Who can apply for the credit?

A "qualified investor," which is any individual or entity, excluding C- corporations.

## How much is the credit?

The income tax credit is equal to 30% of the investment amount, increasing to 35% for investments in "bioscience enterprises" and in companies located in rural Arizona.

## How much do I need to invest?

A "qualified investment" must be an equity investment in a minimum amount of \$25,000 per investment.

## Would my small business qualify for investment?

Early stage companies with total assets of less than \$2 million dollars might qualify. Generally, retail, professional services and banking-related services do not qualify.

## What are some of the requirements for my small business?

A "qualified small business" must have a portion of its operations in Arizona and at least two full-time equivalent nonadministrative employees in Arizona.

For complete guidelines and application forms contact the Arizona Department of Commerce.

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## Win for TECHNOLOGY



## In June, the legislature passed and Governor Janet Napolitano signed into law Arizona's budget for fiscal year 2007. It is a win for Arizona families, especially when it comes to jobs.

As you know, the Governor believes scientific research, technology and innovation are keys to the future of the Arizona economy. This budget includes the \$35 million 21st Century Fund, proposed by the Governor in her State of the State as Innovation Arizona. Its goal is to attract world-class researchers, accelerate the state's technology market and bring innovative products to market. The result will be more high-paying jobs for Arizonans, and that will expand industrial growth and increase Arizona's prosperity.

Review results of this past legislative session in the Arizona Technology Council's legislative report card, a supplement to this edition of *TechConnect*.

# Governor Janet Napolitano takes NGA Leadership Reins and becomes NGA's first Woman Chair.

United States economic growth in the 21st century will be driven by our nation's ability to generate ideas and translate them into innovations that make a positive difference in people's lives.

In today's economy, competition between nations is less relevant than competition between regions of innovation—groups of high wage, rapidly growing businesses that are closely linked through collaboration, research efforts, customers, products and services.

While the United States remains the world leader in innovation, formidable competitors have emerged and are emerging as technology breaks down barriers and accelerates change. As a result, we face serious competition from all corners of our increasingly interconnected world.


- **China overtook the U.S. in 2004** to become the leading exporter of information-technology products.
- **In 2005, only four American companies** ranked among the top 10 recipients of patents granted by the U.S. Patent and Trademark Office.
- **Finland, Israel, Japan, South Korea and Sweden** each spend more on research and development as a share of GDP than the U.S.

Both short and long-term strategies are necessary to ensure the U.S. maintains its competitive edge. To maximize our strengths as a nation, governors must partner with the business community to ensure state policies complement and reinforce private sector

innovation. States must ensure our students have the science, math and technology skills that support this new growth strategy—with an equal focus not just on what students are expected to learn but also on how knowledge is transferred in our classrooms and into local economies.

In Arizona, my Council on Innovation and Technology (GCIT), a representation of experienced and knowledgeable business and industry leaders, provides pivotal leadership in developing new strategies that propel Arizona's competitiveness in the 21st century. Arizona's business community is engaged; and together, we are transforming Arizona's economy to advance Arizonans intellectually and economically. Arizona's recent investments are showing great results and they are leading to advancements in innovation, discoveries and technology development.

As a Nation we must also adopt new growth strategies that maximize the rate of discoveries and innovation in order to remain viable in the international marketplace. The United States has the most flexible economy in the world, one of the best education systems and one of the most efficient private sectors.

We have much to build on, but the time to act is now. 

*Arizona Governor Janet Napolitano and National Governors Association Chair, 2006-2007*

**ABOUT NGA: THE NATIONAL GOVERNORS ASSOCIATION (NGA) IS THE COLLECTIVE VOICE OF THE NATION'S GOVERNORS. NGA PROVIDES GOVERNORS WITH SERVICES THAT RANGE FROM REPRESENTING STATES ON KEY FEDERAL ISSUES TO DEVELOPING POLICY REPORTS ON INNOVATIVE STATE PROGRAMS.**



Governor Janet Napolitano