

Technology Transfer Tactics™



The monthly advisor on best practices in technology transfer

Universities tapping military resources to enhance commercialization efforts

It's still a relatively untapped area, but two creative universities have found a way to join forces with the military in an effort to expand their commercialization opportunities. One university is linking up with military researchers and pursuing broader, "dual-use" applications for their IP, while another has obtained gap funding through a federal program by identifying the U.S. Army as "first buyer" for its innovations.

At Ball State University in Muncie, IN, the Military 2 Market (M2M) initiative -- launched last year -- enables students to develop commercial products and start-ups centered on military patents. "We're a university without an engineering program, a medical school or a veterinarian school; we don't have the 'cool' toys a lot of schools have," notes **Michael Goldsby**, PhD, executive director of Ball State's Entrepreneurship Center. "We wanted to bring more innovation to the program, so we looked for an outside partner to provide those opportunities."

Goldsby was aware of the nearby Naval Surface Warfare Center, Crane Division (NSWC Crane), and talked with some friends who worked there. "They put me in contact with **John Dement** (the NSWC Crane technology transfer program manager), and he said he wanted do more commercial activity, but that his scientists were committing so much time to war applications. He felt he could use more help on commercialization processes, and I said I could use more help on technologies, so this was a real win-win."

The patents being utilized in the M2M program "kind of sit on the shelf to a certain degree," Goldsby continues. "They're already being used for military purposes, but at a minimum we can help them identify commercial applications, and in a best-case scenario businesses could be started. It

also offers incredible hands-on education for our students."

Meanwhile, the University of Maryland system is also finding a willing partner in the military. The Maryland Proof of Concept Alliance, which teams the Army Research Laboratory (ARL) and the UM system, offers small, targeted grants for demonstration projects that can help prove to potential investors that a successful laboratory concept is commercially feasible. Recently the Mid-Atlantic Federal Laboratory Consortium for Technology Transfer made the Alliance the first recipient of its Partnership Award honoring successful collaborations between educational institutions and federal labs.

Brian Darmody, associate VP for research and economic development at the University of Maryland and co-principal investigator for the Alliance, conceived of the program as a way to obtain some of the benefits of a proof of concept center without the endowment funding that often is needed to build one. POCs are "great if you have a wealthy benefactor, but it occurred to me that the concept could be used in different ways," says Darmody. "We have an Army lab a couple of miles from here. We have technologies and funding needs, so I started talking with them about approaching our congressional delegation to obtain support for a concept to supply seed funding to address the 'Valley of Death' and make the transition from research to application."

In addition, he continues, in a separate program called Maryland Industrial Partnerships (MIPS), "we have a structure to evaluate technologies and RFPs -- we have a whole cadre of subject matter experts under this state-funded program and they might be able to do things ARL could not do themselves." The idea, he explains, was to use the

MIPS infrastructure to evaluate the technologies and then bring in the ARL as potential users, so they would evaluate the technology from their perspective. To lend expertise and high-level connections to the program, Darmody recruited **Jacques S. Gansler**, PhD, who directs UM's Center for Public Policy and Private Enterprise, and who formerly served as U.S. Under Secretary of Defense for Acquisition, Technology and Logistics, to be the principal investigator.

U.S. Senator Barbara Mikulski (D-MD) secured funding through the Department of Defense to launch the Alliance, with assistance from Congressman Steny Hoyer and the Maryland congressional delegation.

How the programs work

In the Military 2 Market program at Ball State, Goldsby has both a technology board and an entrepreneurship advisory board -- business people, engineers, manufacturers and faculty. "We get the group together to select what would be very good technologies for our students to work with," he says. The group analyzes the commercial value of the IP as well as the potential markets it could be useful in. "Also, we want to make sure the engineer/scientist will be available to work with the students. I've worked with other universities, and when you do this type of program it's critical that the technological people take time out of their day to work with the students," notes Goldsby.

Finally, he says, the group assesses each tech-

nology's "cool" factor, which can help energize the students as well as create marketing opportunities. "Those [cool] inventions are more fun to work with and make nice headlines," Goldsby observes. "A lot of cool things come out of the military; they have labs and budgets that would make some Fortune 500 companies jealous."

NSWC Crane's Dement, he notes, helps identify the IP developed for military applications that also presents commercial opportunities. "With their IP and some of their patents used for military purposes, we soon discovered there were some possible applications in the commercial realm, and they offered licenses for some of this IP," recalls Goldsby. "They allow you to look at the technology, and if it makes sense it's licensed; there's a little bit of funding for the Navy, but the real benefit is in getting the technology out there."

Once the technologies are identified, they are doled out to students who did not already enter the program with a business idea in mind. "We take them to the Crane military base, they meet up with the engineer and scientist, form a relationship, and are expected to go out and build a network to help develop the idea," says Goldsby. "We have some pretty high expectations -- we set benchmarks, there are a lot of presentations, and they have to defend their ideas. We video record every presentation."

The Maryland POC Alliance puts out RFPs to all TTOs in the Maryland university system, as well as the start-ups the system has created, and to PIs in the specific technology space. "We get proposals from across the system; we try to encourage them to

Incubator becomes additional partner in Military 2 Market program

The year-old Military 2 Market (M2M) initiative at Ball State University has taken a significant step forward with the formalization of a partnership intermediary agreement (PIA) that involves Ball State's Entrepreneurship Center, Naval Surface Warfare Center, Crane Division (NSWC Crane), and the Muncie-based Innovation Connector. The addition of the incubator into the partnership is expected to streamline the process of M2M students and other entrepreneurs creating new businesses based upon dual use IP licensed from the military.

Ted Baker, executive director of the Innovation Connector, also serves as president of the Entrepreneurship Advisory Board at Ball State, and has been working closely with the M2M program. "One thing we noticed that was lacking was a next step for [students

in the program]," he says. "They graduate, and what they did is sometimes viewed as an academic exercise -- although there are some ideas and technologies that have a real chance to be businesses. So after they leave college what they do, and where do they go?"

The Connector, he continues, has aligned itself with NSWC Crane and Ball State "to allow us to be that hosting place for start-up businesses that result from their partnership; we hope to be landing some of our first students within the next six months."

The incubator, Baker emphasizes, is not a Ball State organization. "We're a not-for-profit, embedded into our community," he says. "We can also bridge a gap for the community; technology from Crane can also be available to other manufacturing companies in the community, and we can be a liaison for that." ►

work with the appropriate technical expert in the Army," says Gansler, who runs the Alliance program. "The Army comes up with someone who might be working in this particular niche," who may or may not be with the ARL, he adds. "They may be at Fort Detrick if it's a medical application," he explains.

"Then, we encourage those two to work with someone in the industry," Gansler continues. "In some cases it may be a company the professor has set up, but in most cases it's a small business in the area. The concept is to try to commercialize technology from the university, but in order to do that you need industry involvement." The Army, he adds, "gets a little off the top for management -- it's only fair."

The primary consideration for funding -- and for the program -- is potential for commercialization, he continues. "The university professors have really good ideas, but that does not mean they are commercializable," Gansler comments. "The Army may see applications and have researchers in this area; if so we look and see if it also has dual use applications for commercial markets." Currently, he notes, total funding available is about \$3 million, which comes out of the Defense Department budget.

"Like MIPS, we're looking for commercial viability -- is there a customer? We're not talking only basic research anymore," adds Darmody, who says the individual grants are up to \$140,000. "Number two, is the Army interested as a potential customer?"

"We have a group here in the engineering school that helps us technologically review all of the proposals," adds Gansler, "and the Army does as well. Typically we might get 40 proposals and we pursue about seven a year; we're now in our third batch."

The money, he explains, flows through the Army research lab to the University of Maryland to his program, which then allocates it out to different professors linked up with the Army -- and hopefully with a small business in the area.

Clear benefits seen

While the programs represent two distinct approaches, the leaders of both see significant benefits for their universities.

"When the [Ball State] Entrepreneurship Center first started, we used to see lot of coffee shops and re-consignment shops; that was pretty typical in the past," notes **Ted Baker**, executive director of the

Muncie-based Innovation Connector. "Now we see technology as a major building block for employment." (*Editor's note: Baker's organization recently inked an agreement to work with the Entrepreneurship Center and NSWC Crane to help new companies coming out of the program. See the sidebar below.*)

The Military 2 Market program has also helped enhance national awareness of Ball State, Goldsby adds. "This year *U.S. News & World Report* ranked M2M as first among '10 College Classes That Impact the Outside World,'" he tells *TTT*. The program was also featured in the August issue of the National Defense Industry Association's business and technology periodical, *National Defense Magazine*.

While the program provides its military partners with a direct outlet to the community and helps license its patents, NSWC Crane's emerging network of venture capital partners also enhances the opportunity to move early-stage technology into the market.

Likewise, Darmody sees several benefits for the University of Maryland system from its military partnership. "We have a number of technologies that are on our shelves but do not have the funding to move to the next stage, as well as some start-ups that are not yet mature enough," he says. "This provides some gap funding to move them further down the commercialization pipeline. Second, it's a validator that the Department of Defense is interested in the technology and could be a customer." That early interest, he notes, also makes it easier to obtain VC funding.

"The Army is good validation for VC or angel funding," says Darmody, "just like having an incubator on campus with a university address. And because they are close by, it helps build an overall ecosystem of federal labs; they have lots of barriers and get criticized if they do not get involved in local economic development, and this is one way to do it."

Working with the military

Leaders at both programs maintain that what they have done is replicable at other universities, but add that anyone considering such a program should be aware of the challenges inherent in working with the military. "You have to build trust capital; every institution has a different culture," says Darmody. "Private industry gets frustrated with the

pace of universities, but the military may take more time than *we* are used to. They also have a procurement group, and they are very methodical, so you have to be patient -- but that's the nature of the beast. They don't just waltz in like VCs or angels, who are used to negotiating deals very quickly. It just does not happen when you're talking about a government entity using taxpayer funds."

"When managing these projects, you have to manage them almost like a company," adds Goldsby. "We take these partnerships with the military very seriously; if a student does not take it seriously, or if they exhibit bad behavior, we'll fire them -- and we've done that. We will not jeopardize our relationship, or the program."

What's more, he continues, "If the scientist engineer is not going to devote the necessary time, it's best not to take that project -- even if they're

brilliant. They have to be willing to take students' phone calls and e-mails and meet periodically."

Another issue to expect is "a high level of secrecy -- a very high level of security because Crane is a technology base for the military," says Baker. "We're only allowed to see what we're allowed to see. The whole idea is that we have to follow their procedures, which are very clearly spelled out." Still, he says, the limitations are well worth the benefits. "Everyone talks about how bad it is to work with the military, but here's a group trying to make a difference, and we applaud that," he concludes.

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