

Power Shopping

Kwa-Sur Tam has discovered that some ideas can be better developed in the commercial world than in academic research laboratories.

A noted expert in power systems, Tam has worked with the electric power industry for more than 15 years. Although the current process of opening up the electricity market for competition was not one of Tam's primary research areas, he was intrigued with the possibilities and challenges involved. In particular, he was certain there had to be an efficient way to aggregate residential and small commercial customers to form buying blocks in the newly developed competitive market.

"Usually in an open market, the small customer does not have as much leverage as big customers," Tam explained. "The customer who doesn't have as much volume usually pays a higher price." After wrestling with the concept at home in his off-hours, Tam developed a system that enables small customers to aggregate their electric loads over the Internet. "Not only would the system help groups of customers negotiate better terms, but it would allow other businesses to have access to these customers to provide additional services."

Tam is convinced that his system will help small power customers and wants to see it implemented. After exploring several avenues and meeting with research funders, investors, and venture capitalists, he realized that his technology is best suited to a commercial venture. "The financial support I found was from investors who want a return on their money, rather than grant money," Tam said.

Stephen Spry of NewGotham VC introduced Tam to Anand Katragadda, an information technology consultant who had developed a residential gateway system that would work synergistically with Tam's system. Last fall, Tam and Katragadda formalized a partnership and later incorporated PowerA to commercialize their joint product.

The new Internet company has lined up investors and clients. "We are still in the early startup phase," Tam said. "Unlike many Internet startup models, we plan to be profitable, or at least self-sustaining, within a year," he said, "and in about three years we plan to grow to the point that we either tender an IPO or merge with another company."

Even though Tam's contribution to PowerA was developed without university resources, he is hoping

Virginia Tech can benefit from this venture. "We would like the university or its foundation to invest in PowerA as a part owner," he said.

The university's benefit would not be just investment return. Tam said that if Virginia Tech were a partner, the company could become part of a program to help attract top U.S. students for graduate studies. "The students could work for the company with a salary and stock options while going to school for their advanced degree," he said. "Right now we are losing students to the dot coms. However, the country needs greater numbers of technological ex-

'We are serving consumers who otherwise do not have the volume to negotiate for better terms for their electricity.'

— Kwa-Sur Tam

perts." If students can earn their Ph.D. without losing financial opportunity, Virginia Tech would be able to continue to contribute to the country's technological expertise, he said.

Tam's full-time position on the faculty has restricted his time commitment to the company. State law specifies that a faculty member can spend up to one day per week on consulting. "As the company develops further, it will obviously require more of my time," Tam acknowledged.

The issue of faculty-owned businesses is very complex and filled with issues of conflict of commitment and conflict of interest, he said. "In this beginning stage when a comprehensive university policy is still being developed, a faculty member has to walk a very narrow line with very good balance," he said. "The safest way may be to take unpaid leave."

He said he is hoping that a framework within the university can be developed in which PowerA could buy out his time in a way similar to that of a sponsored research project. "Otherwise," he said, "I may have to take a leave of absence."

Tam is interested in PowerA not only for its business opportunities, but also because the technology he developed can serve the public. "It's not just the monetary profit," he said, "but we are serving consumers who otherwise do not have the volume



Kwa Sur Tam developed a system to aggregate residential and small commercial power customers to form buying blocks to negotiate better terms.

to negotiate for better terms for their electricity.”

Tam also said that his involvement in PowerA is a way to open his research to more practical opportunities. “After you get in the real world, you can better see what is needed by society and can develop the technology to meet those needs. Often things may look good academically, but when we

apply them, they are too expensive or not practical to be effective solutions. I’m hoping my experience with PowerA will provide me with more practical perspective.

“We became engineers to solve society’s problems,” he said. “It’s very exciting when our work can directly benefit the public.”