Commercializing new technologies

UNC physician gets an assist from the Carolina Entrepreneurial Initiative to market next-generation x-ray technology

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UNC PHYSICIAN GETS AN ASSIST FROM THE CAROLINA ENTREPRENEURIAL INITIATIVE TO MARKET NEXT-GENERATION X-RAY TECHNOLOGY

Dr. Etta Pisano spent 20 years developing and evaluating new devices for the detection and diagnosis of breast cancer. When her breakthrough medical-imaging technology began to progress rapidly in recent years, she wanted to create a company to produce it.

The result is NextRay, Inc., a new venture developed by Pisano and four co-founders with the help of student teams from several UNC entrepreneurship programs as well as alumni and partner organizations in the region.

“This is an important new technology—one that will improve medical imaging and safety to patients because it makes better pictures at a lower radiation dose,” says Pisano, president and chief scientific officer for NextRay, vice dean for academic affairs at UNC School of Medicine, and director of UNC’s new N.C. Translational and Clinical Sciences (TraCS) Institute. TraCS, a National Institutes of Health (NIH)-funded initiative, is part of a consortium of medical research institutions across the country working to speed the process of converting laboratory discoveries into treatments for patients.

 Students connect Pisano to resources

NextRay’s medical imaging technology produces much more detailed images than current x-rays with less than one percent of the radiation dosage. Its commercialization journey began when Pisano received a grant for her new venture from N.C. Idea, a North Carolina-based nonprofit that provides bridge funding to entrepreneurial companies through grants, loans, and venture capital, and the connection she made with UNC Kenan-Flagler Business School MBA student John Lerch.

Lerch was working as an intern with the N.C. Idea grant partner that funded Pisano’s venture. He was placed there by Carolina Venture Fellows, an internship program for Kenan-Flagler MBAs directed by the Kenan Institute’s Center for Entrepreneurial Studies. Lerch helped review Pisano’s grant, then helped her write a business plan and lay the foundation for raising capital. He also connected Pisano with other UNC resources, including the Carolina Challenge, a signature program of the Kenan Institute-led Carolina Entrepreneurial Initiative, Kenan-Flagler’s Student Teams Achieving Results (STAR) program, and a supportive entrepreneurial community.

“Etta knew the medical applications for the technology but there were other applications we wanted to consider,” says Lerch, “and we wanted help optimizing how we took the technology to market.”

Enter the STAR program, which places teams of top MBA and undergraduate students in corporations and not-for-profits to help them build effective business strategies. Lerch served as STAR team project leader. UNC alumni Tom Mercolino, vice president of business development for Global Vaccines, Inc., served as faculty advisor.

 Winning business plan evolves

As NextRay’s business plan evolved, Lerch suggested the team enter the 2009 Carolina Challenge. The competition provides workshops, coaching, and networks to help UNC students, faculty, and staff develop their ideas for new ventures while competing for $50,000 in prizes. The NextRay team won the $15,000 John Stedman Commercial Entrepreneurship Award in March.

“We learned something every time we presented the business plan,” says Pisano. “The Challenge also helped prepare the team for the Rice competition.”

Rice, the largest graduate-level business-plan competition in the world, selected NextRay from 339 entrants to compete against 41 other teams. NextRay turned for help to Ted Zoller, director of the Center for Entrepreneurial Studies and CEI’s Launching the Venture (LTV) program. Zoller put together a team of coaches to review NextRay’s pitch prior to the competition. NextRay won $142,000 in prizes at the Rice event in April.

“The help we received from the LTV coaches was fantastic,” says Lerch. “Our beginning presentation to them was night-and-day from the final presentation used at Rice.” NextRay took second-place at Rice and five other awards, including best medical device and best life science plan.

 NextRay moves forward

“The next step for NextRay is to secure funding,” says Pisano. She aims to raise $4.5 million through private investors and grants. “The competition prize money will help to finance patent and travel costs and allow me to hire more help.”

Pisano is now passing on the knowledge and connections in technology transfer she has gained to other entrepreneurial researchers at UNC as director of the new TraCS Institute. Among the institute’s first projects is a new center being created by the medical school, Kenan-Flagler, and the Office of Technology Development to help commercialize biomedical discoveries at UNC. She has tapped Mercolino to be one of three new entrepreneurs-in-residence to support that effort.

“CEI does a good job of educating people across campus about what commercialization involves and the role entrepreneurship plays in the process,” says Pisano. “TraCS is about building on that to help our community of scientists turn their ideas into tools that can improve health and impact more people.”

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N.C.legislature draws on institute’s expertise to restructure economic incentives

Tax credits used by North Carolina communities to promote business growth have had little or no effect in creating jobs or influencing company expansion or location decisions, according to a study by the Kenan Institute’s Carolina Center for Competitive Economies (C3E).

Conversely, discretionary incentives that target firms within the state’s existing industry clusters and are tailored to a company’s specific priorities are more likely to influence a company’s location or expansion decision, the study showed. C3E conducted the study for the N.C. General Assembly’s Select Committee on Economic Development Incentives.

Based on those results, C3E researchers in January recommended that North Carolina restructure its financial incentives program to eliminate tax credits, put more money into strategic inducements that are working, and use the savings to reduce the state’s corporate tax rate, one of the highest in the southeast, to a competitively neutral 6.5 percent.

A bill pending in the North Carolina Senate aims to do just that. N.C. Sen. David Hoyle, primary sponsor of Senate Bill 574, says, “From this report, it is clear that we are not getting a lot of bang for our buck with the current incentives that are in place. We need to look at every possible way to keep North Carolina globally competitive, and we need to change what doesn’t work so we can more effectively bring jobs to the citizens of North Carolina.”

- Research reveals facts about incentives use

A growing awareness of the need to examine the state’s economic development incentive programs led legislators in 2007 to contract with C3E to conduct an 18-month research program to address key questions related to incentives.

C3E helps regions and states address critical challenges of competitiveness and economic development and make strategic decisions for lasting investments.

“North Carolina’s use of incentives constituted a portfolio based on investment strategies from the 1990s,” says C3E Director E. Brent Lane. “Our role was to help legislators re-tune the state’s incentives strategy to maximize returns in the current economy.”

The center examined North Carolina’s first decade (1996-2006) of using financial incentives for economic development. The results showed that actual use of incentives varied from the public perception:

- The cost of incentives, though high, was typically overstated in publicized estimates.
- Tax credits comprised the majority of incentives, with high-profile discretionary incentives being atypical.
- Most incentives were awarded for investments in machinery and equipment, not job creation.
- Few incentives resulted in benefits for distressed areas.
- Tax credits represented 98 percent of North Carolina’s incentive portfolio allocation, with discretionary incentives comprising 2 percent. While more than $2 billion in incentives was awarded to companies during the study period, an estimated 35 percent of generated tax credits were not used, making the true cost approximately $632 million.

Company surveys showed that such factors as access to skilled labor, highway access, tax rates, and regulatory climate had more impact on business location decisions than incentives.

- Limitations on incentives lessen impact

The findings show that statutory tax credit programs have a limited effect on the state’s economy. The significant size of the state’s economy, which is ninth largest in the country, makes it challenging for an incentive program to greatly stimulate statewide economic growth. To generate even a 1 percent gain in employment would require the creation of 90,000 new jobs.

Analysts acknowledge that incented job creation in growing metropolitan areas must generate sufficiently large wages and investment levels to offset the public service costs incurred by the influx of new residents. Thus, a greater economic return results when incentives produce more jobs for existing residents, particularly in distressed areas, because they do not require additional public services.

The state is also limited to providing direct assistance to only a few thousand of North Carolina’s 500,000 companies per year through statutory tax credits and to only a few dozen firms annually through targeted discretionary incentives. However, discretionary programs do provide an opportunity for a transformative effect on the state’s most distressed regions by laying the groundwork for future growth and employment in areas struggling with economic adjustment and unemployment.

- Center makes recommendations for change

Based on C3E’s research findings, Senate Bill 574 aims to reallocate North Carolina’s economic incentives portfolio to make it more effective, targeted, and measurable by eliminating ineffective tax credits, reducing the corporate income tax rate, targeting distressed areas and strategic industries, and providing ongoing legislative assessment of the state’s economic incentive portfolio.

The Center is meeting with local economic developers throughout the state to obtain feedback on the study and will continue to advise the legislature on its findings.

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IBM’S DEEPAK ADVANI DISCUSSES DOING BUSINESS IN THIS DYNAMIC EMERGING MARKET

With a population exceeding one billion (second only to China), the largest number of English speakers outside the United States, an emerging middle class, and 70 percent of its people under age 35, India offers vast potential for business growth and development. Western business investments in the country exploded in the last decade, from $1 billion to $30 billion.

But India is not the United States and taking advantage of its market potential requires a clear understanding of its culture and its people.

Kenan Institute News talks about the opportunities and challenges with IBM’s Deepak Advani, who has led business development in India and China for both IBM and Lenovo for more than a decade.

Kenan Institute News: What do you feel is particularly important for Western companies to understand about India’s culture in order to conduct business there?

Advani: India is in a unique position right now. It is a large country experiencing rapid growth driven by a young consumer demographic. It is opening up, and change is occurring. But any business hoping to operate in India must understand that India’s civilization and history are centuries old, during which time there was not much change, until recently. The Indian people deeply value their history and are dealing with the rapid changes around them by blending tradition with modernity. To put it another way, India has one leg in the past and one leg in the future, and Western countries must respect this need to honor both aspects of the culture.

Another key understanding of the Indian market is that the people are cautious about spending and need to feel they are getting a good value for their money. They are not interested in frivolous products. Products and services need to be aspirational, loaded with good features at reasonable prices so they can feel good about having made the purchase.

Kenan Institute News: What are particular challenges international businesses might face while trying to set up or expand in India?

Advani: A common mistake made by multinational companies is trying to exert too much control from outside the country. In order to succeed in India, a company must have local knowledge and a competent local team and empower them to deal with the intricacies of Indian business laws and local customs.

Another challenge is that India is an enormous country where 16 languages and more than 3,000 dialects are spoken. It is not homogenous and can’t be approached as though it were. Translations and marketing around local themes are important. Of course, campaigns need to be executed with care so global consistency isn’t compromised for local relevance.

Kenan Institute News: What types of opportunities do you see opening up in India?

Advani: While many multinational companies are looking at doing business in India, there are also many companies coming out of India that are going global. These companies need employees with a global perspective, so there are good opportunities for talented people willing to live and work in India.

Kenan Institute News: What advice would you give to anyone hoping to pursue business opportunities in India?

Advani: While there is a global recession right now, companies still need to grow. Solid companies can make aggressive moves right now in India, taking advantage of the country’s immense purchasing potential. It is just very important to understand how the Indian consumer thinks and to understand what is important to the people. Obtaining local knowledge is critical for any business to be successful in India.

From an employer’s point of view, it is also important to make personal connections with local employees and take a true interest in their personal lives. Families are a primary focal point for most Indian people, and an employer’s interest in them is appreciated. People must believe in your cause and then they will make a commitment to you.

Kenan Institute News: Are there business opportunities in India for smaller, more-entrepreneurial firms?

Advani: It’s more difficult for smaller businesses to benefit from this trend. Unlike multi-national companies, they don’t have a local presence, which is critical to gain a deep understanding of the Indian customer wants and needs. They need to find a local partner who can help them understand and serve the local market.

That being said, there are ways for small companies to benefit from the growth in India through careful planning. For example, a friend of mine in Michigan started a small consulting company a few years ago providing engineering services to U.S. companies. As his business grew, he built a satellite office in India. While the initial focus of his India office was to deliver services remotely, he soon expanded its mission to offer engineering services to Indian companies.