

Business Incubators: Critical Links to Innovation

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As trade and technology become increasingly global, Connecticut is pinning some of its economic dreams on its ability to become a leading commercial innovation center that can compete and win in world markets. And every day, that technology marketplace is getting more crowded. As Matthew Nemerson, president and CEO of the Connecticut Technology Council puts it, “Every other state and country is chasing the same rainbow and some are throwing hundreds of millions of dollars into the effort.”

What Connecticut has in its favor, according to Nemerson, is a long history of innovation and productivity, a size that lets it move quickly and a technology community that’s finally on the same wavelength.

One mechanism that is helping Connecticut’s innovation culture gain traction is the business incubator. Incubators are entrepreneurial support systems that nurture fledgling companies until they can survive and “fly” on their own. Typically, incubators provide some form of office and laboratory space, business services and intensive mentoring at low cost to the company. What start-up companies are looking for, in addition to facilities, said Elaine Pullen, Chair of Connecticut Innovations and the Technology Council, is a “creative environment with like-minded people.” It lets them gather around the “classic coffee machine,” said Pullen, and “discuss technical road-blocks or whatever else is on their mind.”

Nemerson sees this “social networking” as a critical piece of what incubators have to offer. “Especially in the world of biotechnology, people want more than space in an office park. They want to be part of a world-class community of innovation and experimentation. Yet they also want to work around peers who can help them with intellectual property and business development issues ... and can share in the mechanics of innovation, like lab equipment and databases.” In 1983, Nemerson helped start Connecticut’s first incubator, Science Park, in New Haven. “In its heyday,” he said, it offered “more services than anyone.” There were weekly networking lunches with Yale faculty, a venture seed fund as well as administrative services that “seem almost quaint today,” like mailroom, central phone service and printed stationery. Although the Park didn’t end up paying for itself, said Nemerson, New Haven today has one of the “most vibrant entrepreneurial communities in the state, an incubator of sorts, right downtown.” The 120 Science Park companies, he added, “probably spawned over \$4 billion in new firms throughout the northeast.”

In Connecticut, there are currently six business incubators, of which, two are technology only, and four are mixed use. They come in various models, each with its own approach to raising a high-growth newborn and its own way of fostering those critical linkages. We will look briefly at three.

Technology Incubation Program (TIP)

The University of Connecticut’s (UConn’s) Technology Incubation Program (TIP) was founded in 2002 as part of the Office of Technology Commercialization. Its Advanced Technology Laboratory is located in the impressive high-tech BioScience Complex, with additional space on UConn’s Farmington and Avery Point campuses. Because UConn is a public research university, TIP is able to provide unique access to research faculty and specialized facilities. Facilities like fully equipped wet labs, hazardous materials training and an environmental room help attract companies to UConn, said Executive Director Rita Zangari. “Space is flexible and resources are often shared,” she explained. For example, a plant sciences company can be provided space in the GMP greenhouse with faculty and students. Or, two early stage companies might be sharing the same lab space, as is the case with Catalectic and Impact World, since both are collaborating with UConn chemistry professor, Dr. Steven Suib. “At UConn,” said Zangari, “there are so many people with expertise who are willing to help – faculty who are excited to have industry partners, business consultants who provide low cost or no cost services, technology organizations like CTC, Connecticut Innovations and CURE that offer networking support.”

Institute of Technology and Business Development (ITBD)

At Central Connecticut State (CCSU) in New Britain, there's the Institute of Technology and Business Development (ITBD), founded in 1993, where 18 incubator companies — of which seven are technology-related — occupy 25,000 of the available 35,000 square feet. Managing Director Richard Mullins was instrumental in introducing the highly structured collaboration process called Lifecycle. It includes mandatory monthly and quarterly mentoring meetings where participating companies report on progress, network with local chambers of commerce and listen to speakers on specialty topics like Internet marketing and branding. "Through informal communications," said Mullins, "companies are exposed to resources they didn't even know existed." He believes the diversity of his mixed-use incubator companies helps his companies think out-of-the-box. It's also common for one company to take advantage of the services offered by another, as when Precision Engineering was asked by VRSim, a virtual reality company, to fabricate special weldments for their simulation mockup.

Innovation Center – Connecticut Center for Advanced Technology (CCAT)

"Think Route 128 or Silicon Valley," said Executive Director Guy Hatch about CCAT's Innovation Center, a relatively new incubator in neatly renovated labs and office space, bordering the part of Rentschler Field in East Hartford designated as a campus for science and technology that adjoins Pratt & Whitney and the United Technologies Research Center (UTRC). The vision is to gather companies around key technologies and create a hothouse atmosphere that will foster growth. After a capabilities study, CCAT identified lasers, photonics, nanotechnology, fuel cells, medical devices and next generation manufacturing as likely growth industries. "The high cost of doing business in Connecticut," said Hatch, "requires us to add value higher up the supply chain, to move toward integrated and sophisticated industries." The Center works with small technology companies, like Bolton Works, Aerogel Composite and Arcor Laser Services, but also with industrial research spinoffs. They often help more established companies make contact with smaller companies when there is mutual benefit and synergy.

A Network of Incubators

"Although there may be some overlap between incubators," said Hatch, "we collaborate more than compete. Growing our economy and technology job sector requires that we all work together." That happens monthly during meetings of the Connecticut Business Incubator Network (CBIN) where the incubators just mentioned and a few others "share best practices." We even refer companies to another incubator, said Hatch, if it would be a better fit. "What's important," said Mullins, "is that we do right by our clients. It's part of being the trusted advisor."

CBIN came out of a Connecticut Technology Council project, called the Growth Network, which got Connecticut incubator directors together for a breakfast meeting. "Before you knew it," said Nemerson, "they had taken the ball and run with it – and the informal breakfast meeting became a statewide organization."

Criteria for Selection

Because the goals are ambitious, incubators are selective about the companies they admit and insistent on sound business practices. "Companies must have a business plan," said Hatch. "We aren't turnaround artists." He said they look for a great idea and motivated leadership with enough money to cover basic obligations. "They don't have to be already bankable," he added, "but they do have to look like they're going to grow into something decent." Nemerson agrees. "We need to do more than house would-be technology companies, we need to turn out a steady stream of successful, high-growth firms." In addition to a business plan, ITBD also requires an applicant to provide proof of liability insurance, a balance sheet and a willingness to sign a one-year lease. "We want to see who's serious," said Mullins.

At UConn's TIP, companies have two years to come up with a full business plan, but they must first demonstrate their commercial potential in order to be accepted into the program. TIP firms are encouraged to seek assistance from in-house business specialists. Victor Stancovski, president and chief technical officer of Catelectic, a

company that develops clean energy products, says he's already used two UConn business consultants "to help his tiny little company run in the real world."

"But not all companies need that kind of help," said Zangari. For example, MAKScientific has a seasoned CEO who has already started many successful companies. They're here, she explained, because their technology is UConn intellectual property, developed in a UConn laboratory. It made sense for them to commercialize that technology from a location that could support them with both human and technical resources.

In fact, for a company to be admitted to the TIP, there must be a UConn connection, and while homegrown UConn technology is a common denominator, it's not a requirement. But "there needs to be a reason they're on campus," said Zangari. "The arrangement has to be mutually beneficial. Our companies have access to state-of-the-art research and resources and we have access to student internships and collaboration opportunities for faculty." Real world experience, she explained, is incredibly helpful in attracting top-notch faculty and students. "TIP offers a return on the billion dollars the state has put into UConn," added Zangari, "by supporting new technology companies and jobs that will help keep Connecticut's educated workers here."

Mullins sees it the same way. ITBD provides "an economic engine for the state and a good educational environment for its students to learn skills that will make them productive members of society."

Financial Arrangements

Because CCSU is not a research institution, ITBD is not part of the university's general fund nor does it deal with intellectual property or take equity in any of its companies. Said Mullins, "we only take the monthly rent." ITBD manages to be self-supporting by charging fees for additional services like the Conference Center or Business Resource Center. Also helpful is New Britain's three-year tax exemption program for incubators. "It's the only city in the state that has it," said Mullins.

TIP is supported by both UConn and by the monthly fees paid by the companies. Companies are not required to share equity or profits as with some incubator models. Hopefully, said Zangari, "if a company has a big win, they'll have a fond place in their heart for UConn." When UConn intellectual property becomes the basis of a new company, there's a licensing and revenue sharing arrangement between the company, UConn and the inventor. That's how it works with Evergen, said Zangari, "a company that develops cloned cow embryos that they export to China to improve that country's dairy stock." Evergen uses UConn intellectual property founded by Jerry Yang, a UConn professor and global expert on cloning, who works in the Center for Regenerative Biology. All will share in the profits.

At CCAT's Innovation Center, tenants pay the lease. They are all independent entities, said Hatch, and CCAT claims no rights to anything produced. "From a landlord's point of view," he said, "it's the absolute worst value proposition. We bring in tenants who can't pay their bills and as soon as they get successful, we kick them out."

Graduation and Beyond

The right time to kick them out depends on the incubator. ITBD, which has had the most graduates, has settled on a five-year time timeframe. "It works for us," said Mullins, "because we're mixed use," and have multiple kinds of businesses growing at very different rates. "We don't want to throw them out prematurely" and besides, he added, "it's very difficult to separate when they're successful." Both UConn and CCAT have opted for a three-year plan. Said Hatch, "In three years a technology start-up should have either outgrown the incubator space or conversely become stagnant or gone into a decline." Either way, he added, three years should be right. Said Zangari about TIP, "Of course, the ideal is after three years they don't need us, but the reality is there may be something that happens in their industry, technology, patenting, or funding, where they need to renew." She added, "If there's a good reason, we'll let them."

After graduation, said Nemerson, it's important to have the right atmosphere so the good companies don't leave the state. A lot will depend on the nature of the business and whether it makes sense for them to stay. Does the company have venture capital, are there supporting technologies in the area, is there the right workforce? "Most

of the companies that graduate will have global mindsets about their customer base,” he said, “but we hope their employees will be homegrown and their business supply chain local.”

Parting Thoughts

In the last couple of years, there has been a lot of attention paid to technology-based economic development in the state. Everyone agrees that significant progress has been made. “But,” said Zangari, “we also have to keep an eye on the competition coming up behind us.” Other states, she said, like the Carolinas, Maryland, Ohio, New York, and Pennsylvania, have put a lot of effort and money into attracting new business activity. Even in Maryland (also a small state), they have many more incubators associated with their universities and economic development agencies than we do, she added, and “many are state funded through TEDCO, the state-supported technology development corporation.”

Part of the lag in Connecticut, she explained, is because “historically, commercialization came from federal funds supplied to the aerospace industry like UTRC.” It did not come from Yale or UConn until later and “although they’re moving in the right direction, change is slow.” Funding incentives are needed to support new university research, she added, because corporations are rapidly reducing R&D spending and the kind of technology that used to come out of industry isn’t happening anymore.

What we need, according to Nemerson, is more participation by government in getting businesses going and better access to capital. Ideally, he’d like to see an official state program with funding for individual incubators, almost like a franchise system. He also thinks we need to work on attracting a culture of wealthy entrepreneurs (angel-funders) who will write big checks to encourage and enable others to make it like they have. “It’s a long way from the good idea to a company with real customers.” Nemerson added that the regions that master the process of converting intellectual property to jobs will be the ones with growing economies.

Hatch would like Connecticut to “have a seed fund, like other states, that would help a small company get through the GAP,” from a quarter of a million (usually what friends and family can come up with) to about three million, when venture capitalists are willing to invest in it. “The banks,” he added, “want assets and a track record of two to three years.”

In the meantime, government has taken some positive steps. In the last session, the General Assembly passed legislation creating a new opportunities fund [Public Act 05-129}, essentially a financial resource that will provide investment opportunities in seed stage and emerging growth technology-based companies. In addition, new legislation [Public Act 05-165} requires the state’s economic agencies to submit a plan by January 2006 for supporting technology transfer efforts. “It would create additional services and programs,” said Zangari, “for academics and businesses to support commercialization.”

Mullins suggests that Connecticut needs “more marketing as a state that grows businesses” but is convinced the state’s incubation process “is healthy and on the rise.” — ***Barbara Standke is a freelance writer based in Chester, CT.***

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