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*** * DEN Update * ***

From its inception, the DEN has had the twin visions of being an educational resource and a support infrastructure for implementation of startup ventures. In both these areas, we're starting to see tangible developments in our early initiatives.

On the education front, (see page 2) the DEN, Tuck and Thayer announce the opening of an introductory course on starting new ventures to be offered for credit to Tuck and Thayer Masters of Engineering Management students. The course will also be available on a not-for-credit basis to anyone else in the Dartmouth community wanting to learn more about how to go about successfully starting a new business. More information can be found at the DEN website (<http://www.dartmouth.edu/~denet/courses.html>) or by contacting Sian Muir at the DEN. In addition, we are beginning to develop a series of practical workshops on areas of critical interest to startup entrepreneurs. The first workshop, to run sometime in the fall term, will focus on market research - defining customer needs with real profit potential and sufficient scope to justify starting a new business, and then doing the right kind of market analysis and research to substantiate the opportunity. We want to address the needs of the Dartmouth community so we are actively soliciting input and ideas for additional sessions. If you have any ideas or areas where you feel you would like to learn more, please contact us.

We have a number of formal and informal internships going on this summer, involving undergraduates and Tuck students. One of our undergrads is Ben Kasdon, recently part of a startup team that grew out of a Thayer Eng. 21 project. Ben begins a two-part series in this newsletter describing some of his experiences this past spring and summer, and different ways in which he is learning about what comprises "entrepreneurial." In our next newsletter we will also focus on two Tuck interns who are making real contributions to some of the Thayer and Med School startups in the DEN.

On the implementation front, some of the biggest news of the last weeks (by definition if nothing else) is the public exposure of the Dartmouth Regional Technology Center initiative we have been developing in the DEN since the Fall of 2000. In this newsletter and on the DEN website you can find recent press articles covering an emerging statewide initiative centering on a business technology innovation center at Dartmouth.

We have several interesting technology and medical companies developing in the DEN, some of which are highlighted here. As always, successful new ventures depend as much (if not more) on good execution as on good ideas, which means there's always a need for people with startup business experience and a willingness to put sweat equity into developing a new venture. If you or someone you know fits the bill, we're always looking!

**** Educational Opportunities ****

DEN, Tuck and Thayer offer collaborative course in E-Ship

The Tuck School of Business, the Thayer School of Engineering and the Dartmouth Entrepreneurial Network program are pleased to offer members of the Dartmouth community a new evening mini-course designed to provide basic education in entrepreneurship and the starting of new business ventures. The course will be open to anyone eligible for a dartmouth.edu or dartmouth.alum.org email address, thereby including any student, faculty or staff member of the College, the DHMC or the Mary Hitchcock Hospital, or any alumni of the schools. Tuck and Thayer students in the Masters of Engineering Management program will be eligible to earn credit for the course.

The dates and times for Starting New Ventures:

Introductory Class (newcomers only)

Thursday, Sept. 12, 7 - 10 PPM

Session 1 - Monday, Sept. 16

Session 2 - Monday, Sept. 23

Session 3 - Monday, Sept. 30

Session 4 - Monday, Oct. 7

Session 5 - Monday, Oct. 14

Wrap up and presentations - Thursday, Oct. 17

The course will address fundamentals in major areas of conceptualizing and launching a successful new business, including:

- Concept development
- Market and competitive assessment
- Business plan development
- Team building
- Financing and investor presentations
- Execution

Students will be exposed to the startup process in detail. The course will operate in a workshop environment, making use of lectures and discussion sessions, readings, case studies and a limited number of invited entrepreneurs. Throughout the term, students will work on an executive summary of a business idea, which they will present to a panel of potential investors at the conclusion of the course.

Tuck and Thayer students taking the course for credit will pay tuition at their normal rates. For others not taking the course for credit, the Tuck School will charge \$500 for the 6-session course. Class size will be limited.

Anyone interested in additional information should make the following contacts:

Tuck students: Michael Horvath or Corrie Martin (registrar)

Thayer students: John Collier

all others: Sian Muir, Dartmouth Entrepreneurial Network, 6-0295

The Valley News : Wednesday, July 3, 2002

Business 'Incubator' is Planned

College Donates Land For High-Tech Start-Ups by Jodie Tillman

Lebanon — Dartmouth College is helping start a \$4 million center that would be used to support fledgling high-tech companies, including ones that grow out of on-campus research, said college, county and state officials yesterday.

The Dartmouth Regional Technology Center, as it would be called, is part of a statewide initiative aimed at attracting high-tech companies, particularly those working in the biotechnology field.

The college has donated 5½ acres valued at \$700,000 in the Centerra Technology Park off Route 120 for the facility, according to a \$50,000 state-funded study released in May.

The center would be a "business incubator," offering start-up companies not only space, but also access to Dartmouth's resources, such as its research laboratories and professors who would act as mentors, said Steve Epstein, executive director of the Grafton County Economic Development Council, one of the partners in the project.

Incubators, which are run by boards of directors, offer young businesses shared office space, access to equipment and flexible leases, according to the National Business Incubation Association. The facilities can be geared toward technology, as the proposed Lebanon facility is, or toward such industries as manufacturing.

The idea for the Lebanon center, as well as one proposed later for the Seacoast region, springs from the study, which recommended the development of two autonomous high-technology business incubator facilities that can draw on expertise available at the state's colleges.

New high-technology companies are unstable and traditionally have a high failure rate, the study says. But the study also cites statistics showing that nearly 90 percent of companies that "graduate" from incubators remain in business. Incubators are growing at the rate of one per week in North America, according to that study.

The project's partners, who also include the University of New Hampshire among others, are now applying for federal money for the Lebanon facility, said Epstein, who expects construction of the proposed 40,000-square-foot facility to begin next year.

The center provides Dartmouth with an opportunity to move its research into the commercial arena, said Gregg Fairbrothers, director of the Dartmouth College Entrepreneurial Network, a 1½-year-old program created to support people in the college community as they try marketing their research.

In the early 1980s, Congress amended a law so that universities receiving federally funded research would retain the patent to research done by university employees and students, he said. Since then, universities have been moving toward finding ways to put the fruits of their research on the market, said Fairbrothers.

The proposed facility in Lebanon is one way to do that, he said. If a Dartmouth researcher were to think he could market a blood test to detect a particular disease, for example, he could ask the college to give him the license and help him get office space at the Lebanon facility, said Fairbrothers. In such a scenario, the researcher would have a place to expand his company and use of college facilities, and Dartmouth would still reap royalties from the patent, he said. Businesses usually stay in incubators about three years, said Epstein.

Once the companies grow and move out of the incubators, the hope is that they will also attract workers without four-year college degrees, said Epstein. He cited a biotechnology company on the Seacoast that worked with a nearby technical school to train students there on how to do certain lab procedures at the company.

"Those are the kinds of positions we need here," he said, "the ones that are not necessarily for four-year college graduates."

In a news release yesterday, Gov. Jeanne Shaheen touted the facility as a way to attract the biotechnology industry.

"The mapping of the human genome has made it possible for us to imagine cures for diseases from diabetes to cancer," she said. "It has also spurred the growth of the biotechnology industry."

Pamela Walsh, a spokeswoman for Shaheen, said that the presence of Dartmouth and Dartmouth-Hitchcock Medical Center makes a good case for attracting biotechnology companies. The state study said that it is premature to rely only on attracting only such biotech companies.

While some incubators with a strong university presence on their boards have rules saying that a certain percentage of the incubators' clients must be related to the university, Fairbrothers said, "The whole point of this program was to give the building away to the community. I don't foresee having any particular quota or preference" for Dartmouth-spawned companies. The board of directors, which will likely be staffed by members of the founding partners, will set an admission policy to the incubator that would include requiring the company have a viable business plan, said Fairbrothers.

Currently, 11 businesses with Dartmouth connections are in the early stages of development, the state study says. Fairbrothers said one major obstacle for those companies is finding a place to locate. The growth of young companies is "mercurial," he said, and sometimes they need more space after a few months. The proposed incubator in Lebanon would have month-to-month leases, so that businesses could get more space as they needed it, he said.

Dartmouth has been working with Lebanon city administrators, said Fairbrothers. The project would still need to go before the planning board for a site-plan review, said Dean Sorenson, the chairman of the planning board. Sorenson said he had not heard about the proposed center.

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****Market News****

The MoneyTree Survey from PricewaterhouseCooper/Venture Economics/National Venture Capital provides insights into 2002 venture capital investments. We provide you with the highlights....

- \$ VC's invested \$6.2 billion in entrepreneurial activities in the first ¼ of 2002
- \$ Continuing the 2 year downturn
- \$ Investing pace similar to '98 (the last pre-bubble year)
- \$ Software attracted \$1.1 billion and was the investment industry leader
- \$ Resilient sectors were:
 - Networking & Equipment
 - Medical Devices
 - Semi-conductors
- \$ Early stage ventures attracted 19% of total \$'s invested
- \$ Among all companies receiving venture capital for the first time, those in the early stage of development accounted for 60% of the total
- \$ New England was the second largest investment region
- \$ Silicon Valley, New England and LA/Orange County accounted for over ½ of the dollars invested and 46% of the deals reported

Source: www.pwcmoneytree.com

Entrepreneurship DEN style

by S. Ben Kasdon (Skidmore '03)

Ben Kasdon, formerly from the "Safety Blitz" team, has undertaken a summer internship in entrepreneurship at the DEN. In this edition he shares his "Safety Blitz" experiences and initial impressions of the summer internship.

When I decided to attend Skidmore College in Saratoga Springs three years ago, I was aware that engineering was a subject of interest to me. While I knew that Skidmore did not offer an engineering degree or program, I knew that the college had a dual degree program in conjunction with Dartmouth. Thus it wasn't a total shock when, at the end of my sophomore year at Skidmore, I packed up my room knowing I wouldn't return for a full year.

That full year has sped by, and I have had some incredible experiences during my first year here at Dartmouth. I've been fortunate enough to attend engaging classes with enthusiastic professors that made it all but difficult not to be curious and excited about the subject matter. One of the most rewarding experiences I've had during my time here, however, has not come out of the classroom, but out of working with the Dartmouth Entrepreneurship Network.

During my first quarter at Dartmouth, I enrolled in Engineering 21, a class where the students are split into groups and have the objective of inventing, designing, and building something in a certain category. This term, students were to build projects having to do with safety, security, and anti-terrorism. After innumerable hours of research and refinement, our final prototype was ready for demonstration. During the term, our group had designed a key-chain device that could signal Dartmouth Safety and Security. The device used the wireless network on campus to send a message to Safety and Security alerting them that a student was in need of help. Security would then know who needed help, and where they were, as well as any other pertinent information, so those students who could not wait by a blue light phone, or perhaps get to one in the first place, could still receive help.

After the course ended, the project was tucked away and given little thought. Then, early in spring term, Gregg Fairbrothers from the DEN contacted our group. He told us he liked the project and wanted to help us continue with it in an effort to bring it to market if we were interested. We quickly agreed and met with Mr. Fairbrothers. Soon we learned the market potential for our product was just as important as the product itself. Although during the course of the term we had obtained some good statistics on incidence of campus crime for Dartmouth and other colleges and universities, we had little information regarding the wireless network plans of these institutions. Our project relied on a wireless network being in place on campus, therefore our market was directly affected by the number of colleges with wireless networks. With the help of Mr. Fairbrothers, we quickly learned of other college plans, and the numbers looked promising.

Although we had a rough business plan, we had nothing concrete to document the steps we should take in the following months. Needless to say we were excited to learn that a group of students in Engineering 199, an entrepreneurship class in conjunction with Thayer and Tuck, had heard a presentation of DEN projects needing business plan work and had decided that they were going to do a business plan for our project. With our very rough business plan in hand, and the promise of something more concrete on the way, Mr. Fairbrothers met with a group of venture capitalists in Vermont. Our group was nothing short of stunned when we learned that he had obtained a verbal commitment for the funding we needed. The promise of funding led to more meetings, and we found the DEN putting us in contact with lawyers to help incorporate, as

well as several engineers available for hire. Everyone we were put in contact with was incredibly gracious, and our group has yet to be billed for some of the work that was done.

It was at the end of the term when our group started to run into trouble. Mr. Fairbrothers came across a company that tried something very similar to the project we proposed, but failed. This company, Microgistics, differed from ours in that it proposed to install an RF network on campuses where our project proposed a retrofit to existing technology. After talking to the CEO, however, we learned that the problems Microgistics encountered did not involve the installation of the network, but the fact that colleges and universities did not want students to perceive a problem with safety, and that students did not show an interest in buying or using the product. With this new information, it was difficult to continue to pursue our funding from the Vermont investor group, and it looked as if we would be forced to suspend work on the project. Things didn't end quite yet, however, and our group was given one last chance when Mr. Fairbrothers put us in contact with Mr. Tim Dreisbach.

Mr. Dreisbach was extremely experienced with wireless technology and had just returned from working as CEO of Metricom, a wireless company in California. Much like everyone the DEN put us in contact with, he was cordial enough to take the time to meet with our group, and even invited us to his house to learn more about the project. After learning more about our project, Mr. Dreisbach expressed his interest in the group, and he decided to attend a meeting we had scheduled later that week with Mr. Fairbrothers and Dean Larimore. The purpose of the meeting was to determine Dartmouth's willingness to use our design on campus for a trial period. Unfortunately, the meeting only reinforced the comments from Microgistics, and we learned the college was not willing to try out the design because it did not want students to perceive a problem with safety. It was this information that led us to suspend work on the project, leaving me with an apartment in Hanover and no project to work on.

It was at this time I returned to Mr. Fairbrothers and asked him if the DEN needed any help for the summer. I explained to him that because things had fallen apart so late in the term, an educational experience would be more rewarding than a job with monetary value. Mr. Fairbrothers was incredibly gracious and took me aboard without hesitation. He put me in contact with four start-up companies coming out of Tuck, Thayer, and the Medical Center.

I now find myself helping in market research and business plans for small companies that are just becoming incorporated and receiving funding. I have been fortunate enough to attend meetings and sit in on teleconferences with lawyers and CEO's. These opportunities provide invaluable education involving the business side of engineering. The experiences I have had this summer, as well as those to come, have allowed me to learn about product pricing, creating payroll, incorporating, and other assets that are important in entrepreneurship.

By working with the DEN this past month, I have learned some of the vital steps in creating a business, and while it was disappointing that our own project didn't make it as far as some of the companies I have had the opportunity to work with, I can't help but be thankful that it has led me here.

In our next issue Ben will conclude his two-part series by describing his summer internship.

****Entrepreneur Updates****

This edition we are bringing you the latest and greatest from our teams

ENERNOC

As we reported in our last newsletter, ENERNOC LLC (a team from the Tuck School of Business) won the business plan competition at Greener Ventures. In this edition we provide some background on this interesting energy-technology start-up.



The Winners: ENERNOC: Tim Healy & David Brewster at Greener Ventures

ENERNOC was founded in early 2001 when David Brewster, Ted Durbin, and Tim Healy (now Tuck MBA graduates) met to share a new business idea they formulated prior to enrolling at Tuck. With backgrounds in the energy, technology, and utility industries, the three became co-founders of the company they envisioned would provide a new means for delivering energy solutions through centralized network operations centers, or NOCs.

ENERNOC's market opportunity is in Distributed Generation (DG), which is defined as decentralized, on-site power generation and delivery, typically less than 30 megawatts. The power systems that make this possible include established technologies such as internal combustion engines as well as emerging technologies such as fuel cells and microturbines. These DG systems offer end-users of electricity a variety of benefits including: high power quality and reliability, useful heat, cost saving and revenue generating

opportunities, improved environmental performance, and the flexibility to tailor generation solutions to their own thermal and electrical needs.

According to Healy, "restructuring of the U.S. electric power industry, national energy security concerns, growing demand for high-quality and reliable power, environmental awareness, and other factors are creating tremendous market growth for on-site power systems and related software and services." ENERNOC has funding from friends and founders, a technology demo, a customer pipeline, strategic partners, and significant investor interest. Their suite of products and services includes: ENERNOC VSM™, a customer analysis and screening tool; ENERNOC GenOpt™, an optimization and control solution; and ENERNOC 24|7™, a distributed energy network control solution. The company has an extensive team of advisors, including industry veterans, experienced entrepreneurs, respected professors, and supportive investment professionals.

ENERNOC has benefited from the combined effort of several additional Tuck and Thayer students, advisors, faculty members, and overseers since the company's founding in January 2001. For example, ENERNOC received valuable assistance this winter from a group of first-year Tuck students who analyzed the company's market opportunity and strategy. "The support that we've received from Tuck and the overall Dartmouth community has been critical to our early success," says Brewster. "We recognize what an advantage it is to have these important Dartmouth connections." Brewster, the company's President and COO, has a passion for the DG industry, having worked in it nearly his entire career. Brewster also co-founded Tuck's Alternative Energy Club.

ENERNOC's CEO, Tim Healy, has worked at IFC Fuel Cells, the world's leading fuel cell manufacturer, and Northern Power Systems, a leading DG system integration firm. He also co-founded Student Advantage, the leading affinity marketing company focused on the college market.

AWARDS & ACHIEVEMENTS

- ☺ 2001, ENERNOC's original business plan was chosen as a finalist in a national MBA competition involving over 120 entries.
- ☺ 2002, ENERNOC received the top award at the Greener Ventures competition.
- ☺ ENERNOC's success has attracted the attention of leading DG distributors, integrators, investors, and large end-use customers.
- ☺ ENERNOC, with the technical and financial support of a leading embedded software design firm, has developed a software demonstration model of EnerNOC 24|7™, the company's Energy Network Operations Center™ platform software.

For more information visit: www.enernoc.com

Demand Metrix

Things have really been on the move for the Demand Metrix team - literally and figuratively! They have recently moved their offices from Hanover to Cambridge, Massachusetts and they have just managed to secure their first Beta customer in Ben & Jerry's. The company is positioned in the emerging demand analytics software space, a new breed of software that helps e-commerce firms improve the effectiveness of all their products, pricing, placement, and promotion decisions. Through advanced statistics and modeling, Demand Metrix can help marketers and merchandisers pinpoint real cause-and-effect areas.

Demand Metrix has adopted a service model for simplified customer acquisition in the near term. Meeting with several retail potential clients every week, the company

has achieved an extraordinary level of interest in its services offerings.

Challenges have ranged from how to articulate to non-web analytic savvy execs why analytics is useful to marketing, to how Demand Metrix is different and superior to the competition. The company is projecting the closing of 5 new customer deals by September 2002.

Recent additions have bolstered the company's sales and marketing experience. Helping adapt the company into sales mode, Bill Jastromb has now joined the founder Ricky Joshi (D01, TH02) and technical staff Adeel Meer (D02) and Rishi Joshi, who have been with the company since February. Jastromb, (HBS '67), has thirty years in sales and marketing, primarily in the software industry, under his belt. Another new addition to the sales and marketing staff is Phil Mone (D02). John Hann, who has accrued vast experience in e-business development, has recently joined the technical staff. Demand Metrix's board of director's has grown in size lately, adding Deborah Richman (TU84), former vice-president of marketing at Overstock.com, John Kirk (D87), former VP of sales at ProfitLogic, and Mike Gonnerman (D65), former CFO of ProfitLogic.

For more information visit: www.demandmetrix.com

Mi crowave Imaging Systems Technology (MIST)

Hot on the heels of their recent article in Business Week (6/10/02) where MIST was included in the 'Developments to Watch' section, we asked Paul Meaney (a research Associate Professor at Thayer) "what got them to this stage and what the future holds?"

In 1995 Paul (then a PhD candidate) and Keith Paulsen (a Professor at Thayer School of Engineering) had made some progress in developing the imaging technology and thought they had some significant

advantages over what people had developed to that point. So prior to Paul's graduation from Dartmouth, they looked into raising money via a Small Business Innovation Research (SBIR) grant. In order to apply, the team needed to incorporate - so they did, and MIST was born.

Initially, their work was aimed primarily at monitoring temperature change during hyperthermia and the original set-up took about 3 days to take a full set of data for a single image. With the first SBIR, they were able to substantially improve the microwave electronics so they reduced image time by over two orders of magnitude. By 1998 they were able to demonstrate that they could monitor temperature change with the system and were issued their first patent in November of that year.

MIST then became interested in trying to apply the system to breast cancer detection. Although Mammography is well entrenched in this area, the exam is painful and can miss approximately 25% of all cancers. MIST, with their Microwave Imaging Technology, believed they could introduce a viable alternative in terms of sensitivity and specificity which would not involve the discomfort of the mammography process. First patient exams started in May 1998. At this point they had only imaged simple small objects so they focused on the developing a system capable of imaging large, high-contrast scattered objects similar to the breast. This effort became part of an NIH Program Project grant, funded in the Fall of 1999. In May 1999, MIST applied for their second patent related primarily to breast imaging.

MIST's second generation system, will be ready in a few weeks. Data acquisition is considerably faster (a full exam now takes only 15 - 20 minutes, and the image reconstruction now takes around 2 - 5 minutes for a single image).

MIST will be receiving over \$740,000 of Phase II SBIR funding shortly from NIH. They have also only just heard that their second patent has been allowed and they have filed a third provisional patent.



Mist's Second Generation system

When asked about the company's strengths Paul cites his extensive knowledge of the hardware and Keith's talent with software as a "synergy" that results in their constant improvement of their product. Paul added that Ned Coletta (TU03), who is doing a summer internship for MIST, has been a "huge boost in terms of putting together a business strategy and researching funding options". They also have a good team of graduate students, and undergraduate summer interns along with a part time engineer who have done a lot of the 'legwork'. Meaney believes MIST's most significant success was to translate their laboratory scale experimental system into a clinical prototype within 6 months.

Their near future goals are trying to develop a business team and to working on their business strategy. They are also focusing on quantifying their ability to detect cancers and are currently recruiting women with abnormalities for imaging in conjunction with the Radiology department at DHMC. They intend to start a limited clinical trial of 150 patients this Fall.

Ask the experts...

Ask Mike



A trusted advisor to technology CEO's and investors, Finance expert Michael Gonnerman answers the tough start-up questions

www.gonnerman.com.

Mike, if I think I have a good idea for a new business, what are the three most important things I should be doing to get started?

First, talk to at least two or three prospective customers. Most start-ups develop product before gauging the size of the market, defining product functionality and even pricing. Ask questions about how they would use the product, what functionality they need, what would they pay, who makes the buying decisions at their company? You will be surprised at how much you can learn from the same people you hope to eventually turn into customers.

Second, find someone who can mentor you through the early stages. Your mentor should have significant business experience, and should have dealt with the business issues you will be facing with your various constituencies (vendors, customers, employees, directors, regulatory, family). Ultimately, you may want to add this person to your Board of Directors. And, do not worry about paying the mentor -- explain what you are planning and that when it

is appropriate, you will see that he/she gets options to purchase cheap stock. During the start-up stages, most mentors will settle for a lunch at a good restaurant.

Third, think through the operations for the next 12 months in both broad terms (market size, competition, significant goals, product release dates, revenue levels) and in detail (cost to develop product, people need to hire, money need to raise, etc.). And, recognize that what you are starting is a process of planning, and re-planning. You will find that you need a high tolerance for ambiguity as conditions and your cash requirements evolve -- in other words, you will have to continually re-plan your operations.

**** Classifieds ****

FINANCIAL TRADERS

Accentus, a new DEN venture, seeks financial traders and/or trading institutions to participate as subjects during research & development phase of market data sonification software product. Opportunity to shape product and gain 'early adopter' competitive benefit. (see <http://www.dartmouth.edu/~denet/teams/accentus.html>)
Contact James Perkins (603)746-6182

AVAILABLE - BUSINESS INCUBATOR SPACE

DEN has prime rental space available on a rotating basis.
For more information call Sian Muir at (603)646-0295

To place a classified ad, please email dartmouth_entrepreneurial_net@dartmouth.edu.
Please email Dartmouth_entrepreneurial_net@dartmouth.edu if you would like to be removed from our distribution list
