
**INVESTIGATING THE INTERACTION OF ECO-ENTREPRENEURS AND SOCIAL
ENTREPRENEURS IN ALASKAN START-UPS
(WORKING PAPER- 13 OCTOBER, 2007)**

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ABSTRACT

Previous research has looked at the entrepreneur, technology, and knowledge and experience of the firm as three components of the opportunity recognition process of innovation. I am looking at a model that adds the additional role of social entrepreneur to these three components. In addition, this paper takes a more specific look at a category of entrepreneurs called ecological entrepreneurs or eco-entrepreneurs, entrepreneurs who seek a more successful business model than business-as-usual market players while simultaneously pursuing a business model that is more environmentally positive than that of current market players. Social entrepreneurs have been defined as pioneers of innovations that benefit humanity. How do Alaskan entrepreneurs and social entrepreneurs in rural parts of the state, areas that may be disproportionately affected by climate change, work together to innovate and to take advantage of opportunities related to the risks associated with rapid climate change? How do these two groups work together to innovate by applying new or emerging knowledge for profit? How well do these Alaskan entrepreneurs form and take advantage of knowledge and technology developments? How well do they form and utilize international networks? This paper includes data collected from online MBA student entrepreneurs who live, work and study in rural areas of Alaska.

Keywords

Eco-entrepreneur, social entrepreneur, innovation, Alaska, rural, MBA

BACKGROUND

The global movement for large companies toward more sustainable forms of business that seek to internalize business' impact on the environment has also opened opportunities for smaller start-up companies to compete and serve new needs and new customers.

There have been several motivations for the beginning of my research looking at the interaction of entrepreneurs and social entrepreneurs, both from others' research and from my own experience as an entrepreneur and social entrepreneur. A colleague and friend here in Alaska, also playing the role of social entrepreneur through his leadership of the advisory board at an Alaska non-governmental organization (NGO) that helps Alaska entrepreneurs, social entrepreneurs and angel investors noted that it was difficult (although not impossible) for the NGO to get credit from successful entrepreneurs because the entrepreneurs, once successful, tended to forget about the NGO's early mentoring role. This led to my interest in investigating whether cognitive biases such as over-claiming credit (on the part of the entrepreneur) might have hampered previous research, thus not giving enough credit to the role of social entrepreneur (Banaji *et al.*, 2003; Park, 2005).

Previous research has looked at the entrepreneur, technology, and knowledge and experience of the firm as three components of the opportunity recognition process of innovation at the interface of these three components (Park, 2005). I am looking at a model that adds the additional role of social entrepreneur to the three components that Park identified. From this four-pronged model, I then look at innovation by eco-entrepreneurs, entrepreneurs who seek to use a more successful business model than business-as-usual market players while simultaneously pursuing a business model that is more environmentally positive ('sustainable' and 'responsible') than that of current market players.

The Skoll Foundation defines a social entrepreneur as "society's change agent, pioneer of innovations that benefit humanity" (Skoll Foundation, 2007). How do Alaskan entrepreneurs and social entrepreneurs work together to innovate and to take advantage of the risks and opportunities associated with climate change (regulatory, supply chain, product & technology risk, litigation risk, reputation risk, and physical risk) (Lash *et al.*, 2007) if we use Park's definition of innovation as "the practical application of new or emerging knowledge for profit" (Park, 2005). How well do these Alaskan entrepreneurs form and take advantage of knowledge and technology developments? How well do they form and utilize international networks?

Alaska ranks near the bottom of the 50 U.S. states in the venture capital investment often necessary to help entrepreneurs grow their businesses (Library House, 2007). The State also has problems that eco-entrepreneurs with and without venture capital backing are well placed to fix, such as those faced by rural Alaskan communities like Angoon where the cost of electricity is 62 cents per kilowatt-hour; the town recently had its electricity turned off and water treatment plant shut down due to a past-due electric bill of \$17,000 (Skinner, 2007). Power in Angoon, which was later restored, is generated by diesel fuel. Economic development could be assisted by eco-entrepreneurs working with social entrepreneurs.

The situation in villages like Angoon, with high electricity and transportation costs (as well as high unemployment rates) is common in rural parts of Alaska not connected to the road system. New business ventures that offered alternative energy, waste reduction and more efficient processes could reduce the costs, improve the quality of life and reduce negative environmental impact in rural Alaska.

In addition to problems and opportunities associated with transportation and energy costs in rural Alaska, the State could also face \$3.6 to \$6.1 billion in additional infrastructure costs (i.e. roads, railroad tracks, airports, water and sewer systems, and health care facilities) due to damage caused by a warming Alaskan climate between now and 2030 (Larsen *et al.*, 2007). These 10-20% cost increases are in addition to an estimated \$32 billion to maintain and replace public infrastructure in Alaska over the same period (Larsen *et al.*, 2007). While these costs are significant, so are opportunities for eco-entrepreneurs; “in the past decade, private investment in [public infrastructure] has been increasing in the US, Europe and emerging markets, with private parties contributing capital and often operating expertise” (Wharton, 2007). “Strategic design adaptations have much more potential to reduce extra costs in the long run” (Larsen, *et al.*, p. 6).

“Alaska’s climate has gotten warmer in recent decades...[The] average annual temperatures around Alaska increased from 2 degrees to 5 degrees Fahrenheit from 1949 to 2005. Climate models project that both temperature and precipitation will continue increasing in Alaska. The recent climate change was more pronounced in the Arctic than it was elsewhere – and scientists also expect future change to be more substantial in the Arctic” (Larsen *et al.*, 2007, p. 2). According to data in the study from the Geophysical Institute at the University of Alaska Fairbanks, the average temperature increase from all reported locations in Alaska between 1949 and 2005 was 3.5 degrees Fahrenheit.

INTRODUCTION

The purpose of this paper is to introduce my research and planned research regarding small (according to the U.S. government’s Small Business Administration, in general up to 500 employees) ecological entrepreneurs (eco-entrepreneurs) in remote, rural areas of Alaska and how social entrepreneurs effect the innovations of these eco-entrepreneurs and the start-up businesses that these eco-entrepreneurs launch and run. For the purposes of this paper, ‘eco-entrepreneurial start-ups’ will refer to new business whose business plans call for more efficient use of natural capital than is currently being done by market incumbents. Natural capital (Hawken *et al.*, 2000; Lovins *et al.*, 2007) falls into four categories: 1) radical resource productivity, 2) biomimicry (“redesigning industrial systems on biological lines” in a closed loop process in order to eliminate waste), 3) redesigning business’ relationship with consumers into “service and flow” (as a replacement for a goods and purchases relationship) that utilizes closed-loop cycles of materials use as well as resource productivity and 4) investing in natural capital (Hawken *et al.*, 2000, pp. 10-11). This definition eco-entrepreneur is in accord with other definitions and discussions in the literature (Bryant and Bryant, 1998; Isaak, 2002; Linnamen, 2002; Pastakia, 1998; Vives, 2006).

While there are many definitions of the term *social entrepreneur*, for the purposes of this paper I will be using the definition from the Skoll Foundation, “society’s change

agent: a pioneer of innovations that benefits humanity” (Skoll Foundation, 2007); this definition is very similar to others in the literature (Dees, 2001) and allows that social entrepreneurs can operate in the for-profit and in the not-for-profit arenas. (See Dees for a thorough discussion of the meaning of *entrepreneur* and *entrepreneurship* (Dees, 2001, pp. 1-3). According to Dees, for social entrepreneurs the social mission super-cedes wealth creation in importance. To this end, I will incorporate some of the input of students from a recent MBA entrepreneurship class (when that input was specifically structured to help other MBA entrepreneurs in the class to innovate by developing business plans for start-up businesses) as a proxy for social entrepreneurship. For the MBA entrepreneurs themselves, their own central mission started out as wealth creation and later became a blend of wealth creation and concurrent environmental preservation, thus qualifying them as eco-entrepreneurs. It should be noted that there are more narrow definitions of social-entrepreneur (Martin, R. *et al.*, 2007)

For the purposes of this paper I will use a definition of *innovation* as “the practical application of new or emerging knowledge for profit” (Park, 2005). Park looked at innovation at the interface of the entrepreneur, technology and knowledge and experience of the firm. My research adds one more element to the interface and looks at innovation at the interface of eco-entrepreneurs, social entrepreneurs, technology and knowledge and experience of the firm; this initial paper specifically focuses on two elements, eco-entrepreneurs and social entrepreneurs, although knowledge and technology are intertwined as part of the findings.

Evidence of the importance of the interface of eco-entrepreneurs, social entrepreneurs, knowledge (of the firm) and technology can was recently illustrated among large firms in the Texas Pacific Group and KKR (Kohlberg Kravis Roberts & Co. is a private equity firm that specializes in buying and selling companies and thus is part of the entrepreneurial ecosystem) proposed buyout and restructuring of energy company TXU Corporation. In this instance, the Texas Pacific Group and KKR were interested in purchasing TXU, but would only go forward if they could recreate the company as a ‘green’ power generator. This \$45 billion deal was made possible by working with the Environmental Defense Fund and the Natural Resources Defense Council (U.S. NGO’s) in order to gain their endorsements (Inskeep, 2007).

Small businesses in Alaska represent approximately 97% of all businesses in the state (U.S. Small Business Administration, 2006) and their sustainability and growth is often linked to work that they do with medium and large firms. These larger firms often need to develop relationships with other firms, like these smaller firms in Alaska, in order to effectively solve environmental problems that cannot be managed by a single firm because of the larger firm’s lack of competencies (Azzone *et al.*, 1998). These smaller entrepreneurial start-ups are important because of their flexibility in addressing the “moving target that ‘greening’ has become. “What was green two years ago may not be green now and what is green now may not be green in the future” (Azzone *et al.*, 1998, p. 99); Alaskan entrepreneurs are capable of simultaneously improving quality of life and improving environmental impacts in rural Alaska.

It is not just the evolving inter-firm relationships that are important to the success of eco-entrepreneurial ventures but also the integrated relationship with other stakeholders, and I argue that such stakeholders include like-minded social entrepreneurs as it is impossible for a single firm to have direct control (or internally developing all the innovations necessary) to manage the whole ‘cradle to grave’ or

'cradle to cradle' product life cycle that the marketplace is now seeking (Azzone *et al.*, 1998).

I will use data from Alaska that comes from eco-entrepreneurs and from social entrepreneurs with whom I have worked; almost all of the data for this paper comes from Masters of Business Administration (MBA) students that I have taught in an online entrepreneurship class at University of Alaska Southeast (UAS). Alaska comprises approximately 660,000 people scattered across almost 600,000 square miles; I will be paying particular interest to eco-entrepreneurs who live in communities that are not accessible by road from the rest of the North American continent for it is in these areas that there is a pressing need and ripe opportunity for eco-entrepreneurs to solve problems associated with the dual dragons of high fossil fuel use (and high costs) and high transportation costs.

Using the MBA entrepreneurship student data is especially valuable in Alaska since the link between the Alaskan MBA entrepreneurs and successful Alaskan businesses is significant. There is only one Alaskan company on the Inc. 500 List of fast growth private companies from Alaska (Inc., 2006) that is located in the part of Alaska that I am researching; this company, Cape Fox, reported \$38.2 million in revenue for 2006 and grew significantly from a business plan developed in a similar Alaskan MBA entrepreneurship class. (The founder of the only other Alaskan company on the Inc. 500 List for 2006, though located in urban Anchorage, has given significant amounts of his and his staff's time to help another class of Alaskan MBA entrepreneurs fine-tune business plans and, through the donation of money for scholarships, to pay for tuition associated with an MBA entrepreneurship program.)

In addition, my research using MBA entrepreneur data will also help to continue the discussion of how well U.S. business schools are doing in preparing future sustainable business leaders (Desta, 2007).

RESEARCH METHOD

In this study, I include 2007 data from my work with five MBA students in an online MBA program at University of Alaska Southeast over a period of fourteen weeks. All students live in rural parts of Alaska that are not directly linked by the road system to the rest of North America.

During the fourteen week period, each student was in the process of writing a business plan for a start-up for-profit business that would be headquartered in Alaska and needed to grow to \$10 million in turnover per year by the fifth year of operations. While no student was told that they had to follow either an eco-entrepreneurial or a social entrepreneurial path, each of the five businesses represented noted positive economic and environmental outcomes as part of their business plans.

While none of the five students self identified as 'social entrepreneurs', they all played a significant role helping each other with business plans (this was part of their assignment equal to 10% of their overall grade for the course) and thus, I argue, qualified them as social entrepreneurs, helping entrepreneurs to develop innovative business plans. There were cash prizes from the Alaskan business community for the entrepreneurs themselves if their plan was selected but there was no cash incentive for the help that MBA social entrepreneurs offered MBA entrepreneurs. While the class credit was part of the motivation for the MBA social entrepreneurs, it can also be argued

that that the innovations that they shared with eco-entrepreneurs came from 'mission' interest related to the environment as well as to the needed economic development and job creation that is often associated with entrepreneurship (Porter et al., 2004; Psilos *et al.*, 2004)

The students worked on the business plans throughout the fourteen weeks of the semester and all had selected a specific business to start by the middle of the semester. In week ten of the semester, the students were introduced to an article that discussed the effects of climate change on business and, through that article, the concept that "even people skeptical about global warming's dangers are recognizing that, simply because so many others are concerned, the phenomenon has wide ranging implications" (Lash *et al.*, 2007, p. 95). Students were also introduced to six business risks that the authors identified: regulatory (policies such as new emissions standards), products and technology (the development and marketing of climate-friendly products and services), litigation (lawsuits alleging environmental harm), reputational (how a company's environmental policies affect its brand), supply chain (potentially higher raw material and energy costs), and physical (such as an increase in the incidence of hurricanes). The student entrepreneurs were also reminded through the article that reducing exposure to these risks could also create opportunities for profit by improving a business' "climate competitiveness" (Lash *et al.*, 2007, p. 99).

In week eleven of the course, the students were introduced to a lecture on eco-entrepreneurship (Wolk, 2007).

Business Plan Assignments

The following assignment was given to each MBA student as part of the syllabus; the business plan and its presentation comprised 50% of the students' grade as thus was a significant assignment:

Your final project will be to write and present a business plan for an entrepreneurial project that you are (hopefully) passionate about pursuing. 1) The business needs to be headquartered in Alaska; 2) it needs to rely in part on external equity investments to achieve rapid growth; 3) it needs to achieve revenue of \$10 million or more per year by year five of operations; 4) Needs to have an Advisory Board; and 5) your final plans will be submitted to the Alaska Business Plan Competition where finalists will have the chance to present their plans to judges from Alaska's financial community.

Students will make at least one post per week to the final business plan discussion forum about their ideas and progress regarding their own business plan. In addition, you will post at least two responses to other students' business plan posts, thus giving each other feedback and suggestions (3 posts per week).

At the end of the semester, each student is to also present their entire business plan either to the class online or live in front of a panel of judges from the Alaska business and financial community.

There is no limit as to the number of pages to be submitted; completeness of your business plan is what is important for your overall grade. (From the MBA entrepreneurship course syllabus)

Students were told that their plans would be judged based on the following criteria:

- Risk/reward
- Presentation
- Conviction
- Business plan
- Funding viability
- Target market knowledge
- Marketing plan
- Business model
- Advisory board
- Unique selling proposition
- Knowledge of customers
- Knowledge of competition
- Market need for product
- Return on investment
- Time to breakeven
- Management team
- Exit strategy
- Scalability
- Market size
- Market growth

RESULTS AND DISCUSSION/ DATA ANALYSIS

There were five MBA entrepreneurs from which data has been collected for this paper. Comments from MBA students regarding their own business plans are identified as from '*MBA entrepreneur 1-5*' (or '*MBA eco-entrepreneur 1-5*' if at that point they have chosen to launch a business that incorporates "natural capital" principles into the business model) and comments from MBA students regarding help for other MBA entrepreneurs are identified as '*MBA social entrepreneur 1-5*', thus separately identifying contributions from each of the five MBA student entrepreneurs.

Week One

All students are introduced to the term 'social entrepreneur' via the Skoll Foundation website and to a sixteen-minute Skoll Foundation podcast about social entrepreneurs that featured John Elkington (Founder and Chief Entrepreneur) and Sophia Tickell (Chair) from the Skoll Foundation (Skoll Foundation, 2006). Students were then asked to answer the following: 1) Are social entrepreneurs different from entrepreneurs? Why or why not? 2) Tell us about an Alaskan entrepreneur that you find especially interesting. 3) Tell us about a social entrepreneur (in the for-profit sector) that you find especially interesting.

Social entrepreneurs that were identified by the students included:

A mechanical engineer employed by a company located in California and who does a large amount of his research here in [Alaska]. His project is to design a machine that will inject ground fish fillets into perfectly intact salmon fillets, the goal being to make every fillet sold in restaurants to weigh exactly the same. This assures the customers that they are receiving just as much for their money as the person next to them. (MBA entrepreneur 1)

ABR Inc. an Environmental Research & Services in Fairbanks [Alaska]. The founder is Bob Ritchie and what impresses me the most is his approach to promoting his employees for being environmentally responsible. There are five ways Ritchie achieves this and those are: “reducing resource use...encourage reduction of and mitigate for CO2 and other green-house gas emissions...provides financial assistance for employees to purchase hybrid vehicles...retirement account...invested entirely in Socially Responsible Investment accounts...matches employee contributions and supports volunteer time to nonprofits”. Ritchie pays his employees a per day amount if they use alternative transportation, and utilize car pooling (Santi, 2005). (MBA entrepreneur 2)

Lee Zimmerman, Brian Anderluh, and Dan Braun [are] especially interesting. These three entrepreneurs started the Evergreen Lodge. This lodge is “a business that has achieved its dual mission of giving back to society and earning a profit.” The lodge includes 50 cabins, and serves as a normal vacation-type spot where customers rent cabins; however, the lodge operates by offering internships to needy 18-to-24 year olds. The interns receive training in skills such as cooking, housekeeping, maintenance, and carpentry. Once the internships are completed, many of the participants go on to receive full-time training elsewhere, with the skills they learned at Evergreen Lodge” (Field, 2006). (MBA entrepreneur 3)

Not a single for-profit social entrepreneur was identified by the students from within the rural area of Alaska where they lived or from outside of the United States.

Week two

MBA entrepreneurs are introduced to an article by Tony Martin, University of Alaska Auto Technology Department Head about diesel engine particulate matter emissions (Martin, T., 2006).

Students were then told when they were done reading to think about business opportunities that they as an entrepreneur in Alaska might be able to launch and then expand globally. They were asked to describe their idea for that business while imagining that the rest of us were potential angel investors looking for a new business to within which to invest.

The following businesses were suggested by MBA student entrepreneurs; at this point some students had more than one idea for a business.

My business plan is to start and grow a production company that produces films and broadcasts. The focus of the company is to distribute the product over the internet, at the same time releasing films and broadcasts the traditional way: over television and in movie houses. (MBA entrepreneur 5)

An automotive service company for women. (MBA entrepreneur 5)

A one-stop service station for fuel-cell vehicles. Separating ourselves from the old technology is setting a mindset of a new environmentally sound organization. The new service station will focus on new technology parts and repair as well as low emission and alternative energy fuels. (MBA entrepreneur 2)

A web-based retailer for Alaskan king crabs. (MBA entrepreneur 3)

Diesel engine repair and maintenance trainers that would provide the automotive service industry with the training required to repair and maintain diesel engines and those engines changing technologies. (MBA entrepreneur 4)

Alaskan fishing lodges. (MBA entrepreneur 1)

A business offering mechanical services to the users of new [diesel particulate filter] technology. (MBA entrepreneur 1)

The MBA entrepreneurs still had flexibility to change their minds for what would be the final topic for their business plans.

Three of the MBA entrepreneurs suggested ideas that were eco-entrepreneurial endeavors (out of a total of seven start-up business ideas). No MBA social-entrepreneurs (MBA entrepreneurs playing in the 'innovation assist' role for their classmates) moved any MBA entrepreneurs from a traditional entrepreneurial endeavor to one that was more eco-entrepreneurial.

This week, MBA social entrepreneurs began to offer improvement suggestions and encouragement to those MBA entrepreneurs who had already offered eco-entrepreneurial ideas as is evidenced by the following:

I like your [diesel engine repair and maintenance] trainer idea. You took a business idea from the article and were successful in not getting into the technical part of the subject matter. I found that my idea had some very obvious constraints in the fact that technology is not advanced enough to deliver a feasible plan. There are some unknowns in the industries surrounding cell fuels, and one is the worry of the non-regulated nano materials as they arise. I had a problem settling for control technologies as I think that is just a patch on the problem, where cleaner fuels and new vehicles design is a long range solution. Would you focus on emission control technology for diesel vehicles or would you include fuel cell vehicles? (MBA entrepreneur 2)

Week Three

The assignment on scaling (growing a business) was not related specifically to eco-entrepreneurs or social entrepreneurs.

Week Four

The assignment was on how to write a business plan and not related specifically to eco-entrepreneurship.

MBA social entrepreneurs were assigned again, as a reminder, to help MBA entrepreneurs in the class. Students were asked to use the brainstorming tool to try to help the student to solve his/her 'problems'. Students were asked to provide evidence to support why they believed that their solutions are valid; they were asked to not at this point try to criticize other student's solutions to the 'problems'.

New business ideas that were mentioned this week included:

To package dried or dehydrated high nutrient food products...The main staples of the packaged food will be Alaska Wild Berries, one of highest sources of antioxidants and Salmon, a great source of omega-3 fatty acids. The target markets will be the aging population and backpackers/hikers. (MBA entrepreneur 4)

Sell pre-fabricated kits that utilize shipping containers as the foundation for a house. The shipping containers will be shipped to the build site with all pre-fabricated materials included inside the containers. (MBA entrepreneur 3)

One MBA social entrepreneur offered an eco-entrepreneurial suggestion to a MBA entrepreneur to move that person more toward an eco-entrepreneurial business model.

Alaskans are concerned about the environment. I would definitely market that aspect of your project. You are saving trees and recycling eyesores (the containers)." (MBA social entrepreneur 5)

MBA social entrepreneurs helped to identify a social need that an entrepreneur had failed to mention, the need for 'affordable housing' in various specific rural Alaska communities. (MBA social entrepreneurs 2, 4, and 5)

Week Five

The assignment was not related specifically to eco-entrepreneurs (more work on business plans, case studies and 'elevator pitches' for investors).

No specific help came from MBA social entrepreneurs to those MBA entrepreneurs who had already developed eco-entrepreneurial business ideas.

Week Six

The assignment was not related specifically to eco-entrepreneurs (more work on business plans).

No specific help came from MBA social entrepreneurs to those MBA entrepreneurs who had already developed eco-entrepreneurial business ideas.

Week Seven

The assignment was not related specifically to eco-entrepreneurs (more work on business plans, including valuation discussions).

MBA eco-entrepreneur 2 (seafood processing & retail) revealed that business costs will include regulatory requirements related to "Environmental Conservation - Sanitation plan, Waste water management, and Quality and Safety - Hazard Analysis and Critical Control Points (HACCP)." This eco-entrepreneur had also identified the desire to reduce waste from fisheries by-catch as a key part of the business plan.

One specific suggestion from a MBA social entrepreneur (4) to a MBA eco-entrepreneur (3) was about how the entrepreneur's business might be valuable to aging adults; this included a specific introduction to the International Association of Homes and Services for the Aging, an NGO.

Another suggestion came from MBA social entrepreneur 2 to MBA entrepreneur 5 about the entertainment company that was being developed. The social entrepreneur introduced an NGO (ECOLOGIA and their Virtual Foundation) that helped to produce an "educational film about nomadic women's health and lifestyle...documenting a way of life that is disappearing as terrain is threatened by long-term drought, and people and animals endangered by disease" (Virtual Foundation, 2007).

MBA social entrepreneur 5 suggested resources available to help MBA eco-entrepreneur 2 develop the local rural economy through job training funding from the State of Alaska. This was an important contribution since human resource constraints in rural communities present a real challenge to entrepreneurs trying to start and grow a business. MBA eco-entrepreneur 2 responded with the following, thus self-identifying as an eco-entrepreneur who was also a social entrepreneur:

Labor is definitely going to be a challenge as in my interview with the local cold storage they have a problem getting employees due to the new tourist attraction that employs many of the local talent... We have had some pretty interesting arrests at the bunk house with workers that have been in knife fights or have outstanding warrants. This is not what I want for the community nor my business. I am leaning on social responsibility as a selling feature. I think a longevity plan is in place to promote workers to the business.
(MBA entrepreneur 2)

MBA social entrepreneur 2 suggests that MBA entrepreneur 4 (retail baking) consider eliminating trans-fats from ingredient list and adding organic ingredients.

MBA entrepreneur 2 responded that "Trans fat free is something I had already thought to strive for - taste testing will determine the final call on that issue."

Week Eight

The assignment was not related specifically to eco-entrepreneurs (work on business plans, interviewing other entrepreneurs with similar businesses, primary market research and 'bootstrap' financing plans).

There was, however, a case study presented by MBA entrepreneur 4 about Aventine Renewable Energy Holdings, Inc., an eco-entrepreneurial venture in the alternative energy sector (ethanol) that had an initial public offering (IPO) on the New York Stock Exchange (NYSE) one year prior at \$43 per share. By the time of this student's presentation the stock had lost almost two-thirds of its value. It is important to note that case presentations were not selected by business sector; companies were chosen from a list of best and worst performing IPO's in the U.S. over the twelve months prior to the start of the class in January 2007; Aventine was a case from the 'worst' list.

Coincidentally, an IPO case presentation this week by MBA eco-entrepreneur 2 (from the 'best' IPO list) was about the successful American depository receipts listing for the Chinese company, New Oriental Education and Technology, one of the first private education companies to be listed on the NYSE. In this case, shares rose from an IPO of \$15 to over \$40 at the time of the student's presentation in March 2007.

Week Nine

The assignment was not related specifically to eco-entrepreneurship, however MBA students in their role as social entrepreneurs were instructed to review other MBA entrepreneurs' previous business plan discussions as well as entrepreneurial strategy as it relates to the generation and exploitation of new entry opportunities (Hisrich *et al*, 2008) and then to make three recommendations for *new* businesses expansion ideas for each MBA entrepreneur that these fellow entrepreneurs and eco-entrepreneurs had not yet embraced as part of their own current business plans.

MBA social entrepreneurs' suggestions that moved fellow entrepreneurs to be more eco-entrepreneurial included:

Suggestions for utilization of waste products within the baking process.

(MBA social entrepreneur 2)

Suggestion for utilization of waste products from seafood processing.

(MBA social entrepreneurs 3 and 4)

Suggestion to use housing product to serve as shelter for homeless.

(MBA social entrepreneur 5)

This suggestion below was also from MBA social entrepreneur 5:

You could take your knowledge, the knowledge of your team and approach existing seafood companies or fishermen within Alaska and contract with them to make sure that the services they offer are environmentally friendly. Although a touchy subject, maybe you could contract with the government to help work with the fishermen and the companies to better support their lifestyle and the Alaskan environment. You could become a consultant.

In addition, a student also presented a case this week was on a company (from the list of worst performing U.S. IPO's) that designs and builds treatment systems for contaminated water. Basin Water, Inc. went public in May 2006 at \$12 per share. At the time of the student's presentation the stock had fallen below \$7 per share.

Week Ten

During week ten, all five MBA student entrepreneurs were writing business plans for start-up businesses that were designed to be simultaneously more economically profitable and more environmentally positive or 'sustainable' than marketplace incumbents. The MBA entrepreneurs also identified specific risks that they needed to overcome in order for their businesses to succeed.

The start-up businesses fell into the following five categories: business services (MBA entrepreneur 1), seafood processing (MBA entrepreneur 2), housing (MBA entrepreneur 3), retail bakery (MBA entrepreneur 4), and entertainment (MBA entrepreneur 5).

In addition to discussions about marketing strategies, the following areas of eco-entrepreneurial business opportunity and operations were identified by the entrepreneurs themselves: improve greenhouse gas emission controls, minimize waste byproducts, re-use of waste material, reduction of raw material inputs, use of alternative (clean) energy, more selective choices of suppliers of packaging and equipment, reduce use of physical infrastructure, and reduction in travel and the emissions associated with transportation.

Problems that the entrepreneurs identified, in addition to the specific risks that the students were introduced to (Lash, 2007) were as follows: lack of availability of information about new technological processes and new materials, and limited cash during the start-up period for investments related to eco-promotional activities. MBA entrepreneur 3 wrote, "...it all comes back to the mighty dollar. Like I said, I think going green is an important concept, but you are in business of making money, not losing it. Which means you can't be giving away your revenues-at least not during your initial years of start-up."

No students mentioned *per se* that they were working with social entrepreneurs, although students were able to access sector-specific information that helped them to identify ways to be more eco-entrepreneurial.

One student identified first mover advantages (Hisrich et al., pp. 469-71) as well as the opportunity to establish a 'green' certification process for others in the industry to follow.

As I mentioned, students were assigned to help other entrepreneurs in the class. This social entrepreneurial input helped the original entrepreneurs improve on their business plans and there were numerous instances of the MBA entrepreneur thanking the MBA social entrepreneur for these suggestions for improvements. One recommendation was for an entrepreneur in the class to develop a profit sharing relationship with a NGO that also shared similar ecological interests with the entrepreneur. Other inputs included new recycling ideas to save money and be more environmentally positive as well as suggestions for contingency plans. All of these

suggestions increased the chances of the eco-entrepreneur succeeding by making the eco-entrepreneurial business plans more robust.

Week eleven

In week eleven, the entrepreneurs were told to review a presentation on eco-entrepreneurship (Wolk, 2007) and then were specifically asked, “How might your business and your fellow learners’ businesses be perceived as eco-entrepreneurial?” and also “How (if at all) you are being assisted by a ‘social entrepreneur’?”

All five MBA students in the entrepreneurship class identified themselves as eco-entrepreneurs, entrepreneurs who were planning to start enterprises that had business models that were potentially more economically viable and more environmentally positive than what generally existed in the marketplace. This included using ‘greener’ distribution methods (MBA eco-entrepreneur 4).

Two examples of the use of international networks were references to research from an international conference in Australia regarding how the seafood industry could economically and environmentally improve by selling waste product as an ingredient for use in other industries (MBA eco-entrepreneur 2) and the use of a U.K. NGO (the Carbon Disclosure Project) as an aid to help identify ‘green’ packaging suppliers (MBA eco-entrepreneur 2).

No MBA eco-entrepreneur in the class identified any other student in the MBA entrepreneurship class as being a social entrepreneur from whom they were receiving assistance; however, four of the five MBA students provided valuable insights that week to help the original entrepreneur’s business become more economically successful and more environmentally positive. (The fifth student-entrepreneur provided feedback the following week.) Examples included how a particular business could reduce landfill waste; this is a significant unresolved problem in rural Alaska as noted by a Juneau city Assembly member who recently complained that the Juneau garbage dump is currently located on Class A wetlands (Wanamaker, 2007).

One MBA student identified the course instructor as a social entrepreneur (MBA eco-entrepreneur 2).

One student who stated that “at this point in my business planning I am not being assisted by a social entrepreneur” went on to state that the business “would benefit greatly from the use of a social entrepreneur.” This series of statements by the student-entrepreneur is interesting since the person also stated that their business was trying to “provide people with a low-cost housing alternative” (MBA entrepreneur 3).

Week Twelve

The assignments this week were not related specifically to eco-entrepreneurship; students continued to work on business plans with drafts due this week. Students were asked to make acquisition suggestions for MBA eco-entrepreneurs in the class; no suggestions drove the planned businesses to be more eco-entrepreneurial than what had already been planned.

Week Thirteen

The assignment was not related specifically to eco-entrepreneurship; students continued to work on business plans. Students were asked to propose exit strategy for investors. Business plan finalists were selected to compete in an online Alaska business plan competition.

Week Fourteen

The assignment was not related specifically to eco-entrepreneurship; three finalists presented business plans online in a business plan competition to members of Alaska's financial industry. \$1000 in prize money was divided between the three finalists.

CONCLUSIONS AND RECOMMENDATIONS

While data collection and analysis for my research will be continuing, there are some preliminary findings of note. I will break these finding down along the lines of knowledge (and learning), technology and international networks.

Knowledge (and Learning)

Despite some findings that U.S. business schools were not devoting enough of their curricula toward sustainable business practices (Desta, 2007) it appears that one MBA class may be enough to at least begin to get entrepreneurs to seriously consider incorporating eco-entrepreneurial practices into business plans for strategic environmental and economic advantage. While Desta's work looked at the titles of classes in course catalogues, the researcher's methodology would not have noted that a class called 'Entrepreneurship' might be able to inspire future eco-entrepreneurial business leaders.

Of the five MBA students in the online University of Alaska Southeast class, all five incorporated marketing and operational practices into their businesses (without being specifically assigned by the instructor to do so) that were more economically and more environmentally positive than the 'business as usual' (Stern, 2007) practices that we need to supplant.

In addition, knowledge from social entrepreneurs played a significant role in helping the eco-entrepreneurs to identify innovations (Park, 2005) that might lead to more profitable and more environmentally positive business models.

Technology

There were at least three findings of interest when it came to the issues of technology. First, since this was an online class, it allowed access for working entrepreneurs in rural parts of Alaska who would not have been able to attend a traditional class while still being able to keep some of the local connections necessary to plan an eco-entrepreneurial new venture. Second, as would be expected, the student entrepreneurs' use of the Internet allowed access to technological processes that were in use outside of rural Alaskan locations and outside of the United States.

Finally, because this was a MBA class that was conducted online with extensive use of online discussion (chat) tools and the archives associated with online chat, I was

able to review fourteen weeks of discussion in a more robust way than is usually associated with traditional classroom environment and the technologies used therein.

International Networks

The area of international networks, in the context of this case study, is an important component that did not get as much participation from the student entrepreneurs as might be optimal and in this finding perhaps reflects a weakness for other rural eco-entrepreneurs in developed countries; this also suggests an opportunity for social entrepreneurs to further provide assistance in 'mentoring' such eco-entrepreneurs by introducing foreign eco-entrepreneurs to good practices of 'home country' eco-entrepreneurs and other companies. This identification of social entrepreneurs and good practices in the U.K. will be an area that I will continue to research as it might be useful for Alaskan eco-entrepreneurs. While some of the Alaskan eco-entrepreneurs found international organizations in related eco-business sectors, no Alaskan mentioned that they had contacted a specific individual outside the U.S. at these organizations; such individuals could have been a valuable source of assistance as a social entrepreneur.

LIMITATIONS

One of the limitations in my research is that the entrepreneur-students were not limited to any particular definition of what a social entrepreneur was or was not. One student noted that "when it comes to if I am being assisted by a social entrepreneur" "...this would depend on the interpretation of social entrepreneur, and there are many out there" (MBA eco-entrepreneur 2).

A further limitation was that the entrepreneurs in this case study were only at the pre-launch stage of their businesses and had not yet launched their eco-entrepreneurial start-ups. Also, the research in this paper excluded data from eco-entrepreneurial firms in rural Alaska that have already launched businesses and that are not affiliated with the online MBA entrepreneurship class. These limitations will be addressed further in my future research.

FURTHER RESEARCH

Further research needs to be done to investigate whether the student-entrepreneurs in this case study are significantly different than other entrepreneurs at the same pre-launch stage in business. Additional research also needs to examine the success rate, both economically and environmentally, that start-up businesses have over time that are assisted by and/or run by social entrepreneurs. Also, further research still need to discover how successful over time did the entrepreneur/social entrepreneur teams work together to navigate the "mythical fixed pie" and other cognitive biases (Hoffman *et al.*, 2006) that have lead in part to significant impasses in rural Alaska when for-profit companies and environmental NGO's have clashed (Hurst, 2007). Further research will also need to be completed to see how successful the eco-entrepreneur/ social entrepreneur teams are at overcoming some of the obstacles that entrepreneurs have faced in scaling their businesses (Hamm, 2002).

Research in all these areas will need to be sensitive to the effect of potentially underreporting or over-reporting the role of both the eco-entrepreneur and the social entrepreneur due to either team members' possible biases of over-valuing within a group (in-group bias) and over-claiming credit (Banaji *et al*, 2002) if we are to be able to more accurately examine the interface of eco- entrepreneurs, social entrepreneurs, knowledge of the firm, and technology and learn how to maximize the effectiveness of this interface in the idea generation, selection and diffusion that is part of rural Alaska's eco-entrepreneurial innovation value chain (Hansen *et al.*, 2007).

ACKNOWLEDGEMENTS

I wish to first thank all of the MBA entrepreneurship students that I have had the pleasure to work with in Alaska and in Europe over the last four years. I also thank Dr. Graham Orange, my advisor at Leeds Metropolitan University's Innovation North, for his utter patience with me. Finally, I thank my colleagues at University of Alaska Southeast for their support, including the funding that I have received from the Evelyn Rhoads Wilson Endowment Fund for Professional Development.

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