

BUSP01

The Entrepreneurial Project

Master of Science in Entrepreneurship at Lund University

**THE INFLUENCE OF EDUCATION ON THE
ENTREPRENEURIAL MINDSET AND EXPERIENTIAL LEARNING IN
NEW VENTURE CREATION**

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ABSTRACT

The aim of this article is to provide an insight into how entrepreneurship education has influenced the entrepreneurial mindset and experience of an entrepreneurial student and how that increases her skills and abilities in the process of new venture creation. The paper discusses the various theories pertaining to entrepreneurship education and assumptions made by researchers in the field of entrepreneurial learning. The author utilizes the method of autoethnology in the analysis to compare, contrast and critique literature on entrepreneurial education, using examples of her own experiences in the program. These experiences in the Entrepreneurship program provide the data for analysis. The analysis suggests that given the literature presented, the entrepreneurship education that the author received, provided the necessary skills and competencies to be a successful entrepreneur who is fully capable of developing the business idea from concept to commercialization. It answers the question of whether entrepreneurship can be taught and that entrepreneurs are made not born.

KEYWORDS Education, entrepreneur, entrepreneurial education, entrepreneurial mindset, experiential learning, new venture creation.

INTRODUCTION

Words like innovation and creativity are the buzz words of today's rapidly changing environment and business climate. Closely associated with the concept of innovation are words like entrepreneur and entrepreneurship. Innovation in its basic definition means the act of creating or introducing something new. An entrepreneur by its many definitions can also mean someone who creates something new, one who is innovative and can create growth, value and wealth for society. The growth of a nation's economy is highly dependent on the creation of new business. Entrepreneurs therefore create new ventures that lead to job creation and that in turn enhances the wealth of the individuals and society. New ventures promote competition and revitalize the economy. The introduction of new ideas and innovative products and services help to stimulate the business environment. Venture creation can be described as the process that begins with the idea or concept for a business and the

culmination of that idea or concept is when the product or service is sold to customers who are willing and able to purchase them in the market.

New ventures just do not materialize out of thin air by themselves. It all starts with an individual who has an idea to create value or to solve a problem that could prove to be useful for the society at large. That individual is whom we call an entrepreneur. Who is this entrepreneur and why is he or she different from other individuals? Shane (2000) suggests that entrepreneurship research focus on why, when and how certain people can discover and exploit opportunities better than others. This paper will focus on whether the entrepreneur's experiences and efforts are influenced by education, in particular, formal education in an entrepreneurship program conducted by the University. Can Entrepreneurship and entrepreneurial expertise be taught? We will examine how education contributes to an entrepreneur's experiential learning experience within the context of the Master of Entrepreneurship Program at Lund University, taking into account the activities and projects within this program. The reader gets to travel with this entrepreneur on her journey along the entrepreneurial path, from the time she begins her first week in the Master of Entrepreneurship program at Lund University, the activities she participates in, the lectures and lessons she has learned, the business project she undertakes, to the launching of her first new enterprise, a high technology start up. The significant events involving entrepreneurial activities will also be outlined.

This paper is researched and written from the perspective of the entrepreneurial student (entrepreneur) and the material discussed, may be useful for the Universities, educators and researchers who can use this knowledge to design better entrepreneurship programs for the future. It may also benefit those who are interested in why entrepreneurs do what they do. The goal is to enhance the reader's understanding of the impact that formal entrepreneurial education has on the entrepreneurial mindset and the entrepreneur's intentions from the view point of someone who has gone through a Master Program in Entrepreneurship and who is immersed in the efforts to start a new venture within that program.

LITERATURE REVIEW

This paper is an academic exercise with an aim to contribute to the research in the study of entrepreneurship. As such, the literature review attempts to provide a brief but critical

assessment of the literature in the fields of entrepreneurial education, contrasting the views of different authors. This paper will examine the effects and influences that formal entrepreneurial education contributes to the entrepreneurial mindset in the ability to create new ventures. The education that the aspiring entrepreneur receives before embarking on new venture creation can shed light on whether such education helps to make the entrepreneur more successful and that it can help shape or mold an individual into becoming an entrepreneur that can better handle the demands and challenges that come with creating and growing new ventures.

Does entrepreneurial education help potential entrepreneurs achieve the goals in creating a business of their own? Can formal training in an entrepreneurial program actually help the potential entrepreneur to realize her dreams and equip her with skills that would help to weather the storm and chart the course for creating a viable business? Having a university education is an important factor in a person wanting to start a career of owning a business after graduation (Roudaki, 2009). Various researchers studied the effects of education on entrepreneurial activities (Henderson, 2000) argued that education and advisors are an important element in the formation of future entrepreneurs. However, Peterman (2003) indicated that entrepreneurs are “less well educated” but more recent studies underlined the fact that entrepreneurs have a solid educational background.

Kuratko (2005) talked about some of the challenges that are faced by entrepreneurship education. There is a lack of professors who can create programs in entrepreneurship that have new and innovative approaches. “Entrepreneurship educators must have the same innovative drive that is expected from entrepreneurship students”. There has to be the same passion to teach students to become entrepreneurs. Entrepreneurship is characterized by innovativeness and creativity. There is an imminent need to have a continuous process of acquiring new information, techniques and innovative ways of teaching in order to be on par with the development in the real business world. Henderson (2000) suggested that the unavailability of a model, a lack of qualified teachers and the unsupportive media were barriers that young entrepreneurs have to overcome. Kirby (2004) suggests that the educational system should respond to the needs of the future entrepreneurs and that it should have more practical aspects.

Rinne (2005:112) suggested that universities should “function in an entrepreneurial fashion, but in an academic sense, not in an economic sense”. Kuratko (2005) argued that the gap between the business world and the universities has been “bridged” as students wanting to get a deeper understanding of entrepreneurial practices need “the exposure to those entrepreneurs who have paid the price, faced the challenges, and endured the failures”. This highlights important aspects in that this is how the real world works. Both of these authors agree that there is a piece of the puzzle that is missing and that universities would have to find a way to incorporate what is lacking; the interaction between the real world and the academic one.

Entrepreneurship education has come a long way from what it used to be in the past. Bechard (2005) claimed that in many instances, entrepreneurial education remained closer to craft than science, based more on experiences than on academic approaches. He also claimed that entrepreneurship education lacked academic credibility and that there was no clear return on investment to society from the viewpoint of politicians and decision makers, those who have invested in resources in teaching such programs (Fayolle, 2008a: 325). Low (2001) and Katz (2008) said that this field was still very young. Fayolle, (2008a :325) called it the infancy or adolescent phase. Contrary to that, Gray (2006:36) said that entrepreneurship education is the fastest growing course of study in universities around the world. It seems that in the field of entrepreneurship education, there is no common framework regarding how to teach it and how to impart that knowledge (Fayolle (2008a). Opportunities to create future goods and services are discovered, evaluated and exploited. Those definitions reflect the words of previous researchers such as Schumpeter (1934), in attempting to define entrepreneurship. Kirzner (1992) and Gibb (1987), underline that those “old” concepts and definitions about entrepreneurship are still the basis for entrepreneurial research today.

Different goals in entrepreneurship education have been identified by researchers. Kirby (2007) saw education in entrepreneurship as being “concerned with raising awareness of Entrepreneurship. Education teaches students about their roles and functions in the economy and society. For others it is more about developing and enhancing the attributes of the successful entrepreneur in their students. A small minority puts more emphasis on education through enterprise and use the new venture creation process to help students acquire a range of business skills, that are transferable to real life scenarios (Fayolle, 2008b:575) Programs

in universities that are trying to teach entrepreneurship were seen as factors that would influence and contribute to “perceived desirability” of being self-employed (Peterman, 2003: 132) In the education of entrepreneurs, we cannot apply the notion of one-size-fits all. Not everyone can be taught the same way as skills and attitudes differ greatly among people, with different people having different needs. Entrepreneurial programs must be flexible in order to offer each individual a chance to develop his skills in new venture creation.

Universities try to form partnerships between entrepreneurship and business with academia. These educational institutions then try to create practical programs that would attract students who have entrepreneurial aspirations. In the last decade, there has been a rise in the number of programs focusing on entrepreneurship and the study of entrepreneurship as a concept has increasingly become more popular a. (Bygrave, 1994, Klofsten, 1996) As an academic discipline, entrepreneurship has also gained more acceptance than in the past (Klofsten, 2000).

There is an ongoing debate as to whether entrepreneurs are “born or made”, the age old nature versus nature question, discussed in the research of Henderson, (2000), Shefsky, (1996) Naffziger, (1994) and, Cunningham, (1991). According to Gibb (1987), entrepreneurship characteristics such as risk taking or the need for achievement are innate and unique to the individual. Shefsky(1996) illustrated with stories of entrepreneurs depicting the fact that these entrepreneurs have to overcome barriers and obstacles in order to realize their dreams. Failure comes before success and people become entrepreneurs using every experience they have.

Naffziger (1994) goes on to argue that the debate of nature versus nurture, born or made, requires further clarification and that certain types of genes that entrepreneurs are predisposed to possess have not been characterized. Thus, they cannot be differentiated from the other people who have become entrepreneurs through education or experience. Some researchers argue that entrepreneurship can be attributed to that of personality and psychological characteristics (Fayolle, 2008). Thomson (2004) claims that talent and temperament cannot be taught. This debate is still open and strong arguments exist on both sides.

Gibb (1982) suggested that an individual is influenced by the community, family, the interactions with the environment and education. This argument would seem to be in favor of

the debate related to whether entrepreneurs are born or made. It enhances the notion that experiential learning contributes to whether an entrepreneur will be likely to succeed or fail.

METHODOLOGY

The author uses the method of autoethnography to highlight the experiences she has garnered during the nine month duration of the Master of Science in Entrepreneurship program at Lund University. It will be a personal rendition of the various activities she has undertaken, her thoughts and feelings regarding the experience of being an entrepreneurial student and her subsequent efforts to work on a final project that resulted in the commercialization of a research project from the University's Engineering Faculty.

This paper also analyses whether her entrepreneurial education and what she has achieved from it corresponds with that of prevailing literature on entrepreneurial education or whether it contradicts existing viewpoints as propounded by researchers in the field of entrepreneurial research. The author would like to emphasize that her experiences are highly personal and therefore her analysis is purely subjective. Leon Anderson (2006) in his "Analytic Autoethnography" calls it "qualitative inquiry". The author hopes that in utilizing this method she can help the reader identify with her experiences and thus invite the reader to vicariously live through her experiences of being an entrepreneur. Perhaps those who harbor a desire to be an entrepreneur can also benefit in reading this paper since it provides a glimpse into the lifestyle of an aspiring entrepreneur, her trials and tribulations and how her education helps to develop her skills as an entrepreneur. Her experiences, thoughts and feelings are interwoven into the analysis which would serve as the vital data for understanding the world of entrepreneurship. In doing this, the author also can use this paper as a form of self reflection, reflecting upon the various tasks she has done, the people she has met and above all, the challenges in trying to create a new business while studying for a Master Degree at the same time.

Some of the data will come from her Learning Journals that were written during a time period from December to May. The rest will be drawn from her memory and the experiences that she distinctly remembers as being significant contributions to her learning. This autoethnographer hopes to promote the understanding of what it takes to be an entrepreneur

and more importantly make her small contribution to the entrepreneurial research that is fast gaining momentum in research circles and Universities in Sweden and around the world.

ANALYSIS

Since this section pertains to a personal reflection of what has transpired, it will be written in the first person. This analysis will be an attempt to identify different aspects and events of the Entrepreneurship program from my experience and viewpoint and then relate that to the literature that was depicted in the literature review section. It will identify whether I agree or disagree with the literature. I will also relate incidences whereby I can relate certain events to what I have learned from course literature in our program in order to emphasize that textbook knowledge taught in the classroom does help me in my entrepreneurial efforts in creating and starting a new business.

The Master Program in Entrepreneurship is an intensive program lasting nine months. Some of the program's highlights include various contests and events that allow the entrepreneurial students to learn and practice the skills that are crucial to being a successful entrepreneur. I distinctly remember in the first team related activity where we had to form a team and figure out a way to construct a device to protect an egg from breaking when it was to be dropped from the balcony of our building. All we had were straws, paper clips and sticky tape. We had to creatively formulate a construction plan and quickly build an effective contraption to support the egg. Our team failed miserably as our egg crashed and broke in its descent to the ground.

The first contest was appropriately called The Start up Challenge. We were given 100 SEK as start up monies, with the goal of maximizing that and to earn as much money as was legally possible in a matter of 5 days. My team of four decided on a division of labor in that we each pursued different ways of earning money. I was the leader and came up with our team name "Multiple Streams of Income". We sold hotdogs, taught salsa lessons, resold items we bought cheaply at the flea market, designed a web page and also moved furniture for others, using a friend's truck. I even sold our professor's thesis book for 50 SEK. We amassed the grand old sum of 5,600 SEK and were the proud winners.

Why did I mention these two events? Kuratko (2005) mentioned that there is a lack of professors who can create programs that have new and innovative approaches. The events I just mentioned, was a new and creative approach in allowing the students to learn from our experiences rather than learning classroom lectures. These are examples of experiential learning right from the start. We learned by doing. Fear of failure (the egg drop) and creativity (in coming up with a solution of how not to break the egg) were issues to be dealt in real life scenarios of starting a new venture. We learned how to be creative and overcome the fear of failure (seeing the egg drop in spite of all our efforts in designing a contraption to support the egg) In active participation, we increased our experiential learning by leaps and bounds. Teamwork in generating sales and revenue in a short amount of time, helped us to have a real glimpse into the life of an entrepreneur, where an entrepreneur often has to work with limited resources and time constraints in achieving her goals. Our team had members who came from diverse cultures and countries from Mexico, the US, Turkey and Peru. We had to have a high tolerance for working with people from different backgrounds and culture. The Start Up Challenge also gave us a first-hand experience of learning bootstrapping techniques in that we had to make use of what we had at hand(borrow a friend's truck to move furniture for pay, buy the cheapest hotdogs using discount coupons so that we can sell them for more profit) Much later in the second half of the program, in our course, Market Exploitation and Resource Acquisition we then learned about bootstrapping methods.(Winborg and Landström 2001).

Kirby (2007) said that education should have more practical aspects. I believe the Egg drop and Start Up Challenge were practical activities from which we got to use our creativity and innovativeness in coming up with solutions to existing problems and we also learned problem solving skills, teamwork and leadership.

One of the best parts about the program was the guest lectures given by successful entrepreneurs who come from different industries, They imparted their entrepreneurial experiences and the challenges they faced and how they dealt with their problems and what they did to make their ventures a success. We even had a guest lecture who told us about his numerous failures at new venture creation and the reasons why he failed. This would be in keeping with Kuratko's argument that the gap between the business world and the universities has been "bridged" as students wanting to get a deeper understanding of entrepreneurial

practices need “the exposure to those entrepreneurs who have paid the price, faced the challenges, and endured the failures” Our program provided us the opportunity to learn from real life entrepreneurs who have sweated for their successes and their failures and who lived to tell their tales to us later. (Kuratko, 2005:589) This highlights important aspects in that this is how real world really works. The authors agree that there is a piece of the puzzle that is missing and that universities would have to find a way to incorporate what is lacking; the interaction between the real world and the academic one.

In my opinion, our program did provide the missing piece of the puzzle between real life and the academic one, in that we also get the opportunity to work on a project, a business idea that we try to commercialize during the course of the remaining 8 months. I had the good fortune to work on a project that originated from the PhD dissertation of an Assistant Engineering Professor in the Lund University School of Engineering. It has to do with Intelligent Traffic Analysis through automated Video Processing a project I named Trafvid. I saw the business potential of this application from the beginning and the commercial viability in introducing it to the market. Through working with this as my final project, I learned how to write a business plan not only for the purposes of entering the Venture Cup contest, but also how to pitch to potential investors. We were also taught that a Business Plan can be used as a road map for the entrepreneur to be used as a gauge to measure her progress (Hisrich et al 2010 : 189) Besides being an academic exercise for a grade, the ability to write a good Business Plan is an example of bridging the gap between academia and real life. Working with the Lund Innovation System (LUIS) on the commercialization of Trafvid which originated from research, is a good example of show casing the partnership between research academia and business.

Bechard (2005) claimed that in many instances, entrepreneurial education remained closer to craft than science, based more on experiences than on academic approaches. I would agree and also disagree with his statement. While it is true that the program provided numerous opportunities for experiential learning, the academic approach to our program also teaches actual University advanced level courses such as Industry and Market Analysis, and Managing New Venture Growth, which builds the basis upon which we can obtain theoretical and book knowledge offered in traditional courses in Business Administration. Lund University’s Master in Entrepreneurship provides the framework and courses that

significantly contributes to my experiential learning. I can obtain a Master of Science degree and at the same time, I can also get to be CEO of a tech start up. As the Americans from back home in California would say, “ How cool is that! “

Bechard (2005) also claimed that entrepreneurship education lacked academic credibility and that there was no clear return on investment to society from the viewpoint of politicians and decision makers, those who have invested in resources in teaching such programs. I would like to disagree with Bechard in his assertion. Our Master program in Entrepreneurship has received substantial funding from the Swedish government and that shows that politicians and decision makers know the value of having such a program in developing entrepreneurial skills. There are many other Universities in Sweden and the world that teaches entrepreneurship within the Faculties of Business Administration, namely the MBA programs, or those who offer Entrepreneurship studies as a separate individual course within another program. Some offer Diplomas or Certificates in Entrepreneurship. However, Lund University is one of the few Universities in Sweden which offers a Master of Science Program in Entrepreneurship. We do have academic credibility since an international expert committee evaluated the program in Lund University as an excellent centre for higher education in entrepreneurship in Sweden.

I would agree with Grey (2006 : 36) who said that entrepreneurship is one of the fastest growing course of studies in universities. Just Google for the word” entrepreneurship” and you will get 38,100,000 hits, most of them to do with teaching you something about entrepreneurship. This is an era where it is ”trendy” to be an entrepreneur especially in an Internet related business. Many people have lost their corporate jobs due to downsizing due to the downturn of the economy in many countries. These people are striving to start their own businesses and be in control of their own destinies rather than be employed at a big corporation. The stories of Facebook owner Mark Zuckerberg, the world’s most famous social media entrepreneur of all time, has illuminated the minds of young people who aspire to be an billionaire entrepreneur just like Mark Z.

Hindle (2007) articulated that opportunities to create future goods and services are discovered, evaluated and exploited. Those definitions echo the words of previous researchers such as Schumpeter (1934), in attempts to define entrepreneurship. Kirzner (1992) and Gibb (1987),

underlining that those “old” concepts and definitions about entrepreneurship are still the basis for entrepreneurial research today. I believe the “opportunities to create future goods and services are discovered, evaluated and exploited” were taught as part of the Entrepreneurial Process in opportunity recognition. When choosing what to do for our final projects among the multitude of ideas generated by our fellow students, we learn how to evaluate and exploit opportunities. This was also accomplished by our Market Exploitation and Resource Acquisition course where we learned how to work with scarce resources and how to harness the various resources that are available to us in our environment and use them to our advantage.

Through working with Trafvid, I learned how to create future goods and services since Trafvid transforms the landscape of Traffic Analysis by introducing video analysis into the equation, a new method and practice that will bring tremendous value to our customers. Schumpeter if he were alive today, would be proud of our class of 2011 since many of us are still practicing his entrepreneurship concepts of innovation.

Programs in universities that are trying to teach entrepreneurship were seen as factors that would influence and contribute to “perceived desirability” of being self-employed (Peterman, 2003: 132) In the education of entrepreneurs, we cannot apply the notion of one-size-fits all. Not everyone can be taught the same way as skills and attitudes differ greatly among people, with different people having different needs. Entrepreneurial programs must be flexible in order to offer each individual a chance to develop his skills in new venture creation. I would agree with Peterman by saying that a high percentage of our classmates in the Entrepreneurship Master chose to be in this program for a specific purpose or a “perceived desirability” to be self employed and running their own business. Most of us and I can count myself in the mix, desire to be masters of our own destinies and be able to control the type of work we choose to do and to have a high autonomy in managing our day to day activities in running our own business. I like to dance to the beat of my own tune and that was one of the prime reasons I chose to be in this program. As for the notion of one size fits all and that not everyone can be taught the same way as skills and attitudes differ among people, I would say that looking at our class of 2011, the program may not be suited for some individuals. We all come from a variety of different backgrounds and those without any prior knowledge or education in the basic courses of marketing or business, may find it hard it tougher to

understand some of the business concepts taught.. However, since our program is within the context of a Master level education, I would think that every participant in the program would at least have a Bachelor's degree and so would be familiar with having to learn concepts and theories quickly and apply that to the tasks we have to do in the new venture creation process.

Of all the articles I have read in my research for writing this paper, Alain Fayolle's 2008 article "Teaching models and learning processes in entrepreneurship education" speaks to me loud and clear. He provides an excellent framework to discuss various types of entrepreneurship teaching programs. Fayolle's article is clear and concise in identifying the factors that would foster effective learning processes in entrepreneurship education. He suggested that entrepreneurial education should help students or participants to actually engage in venture creation projects (prospective entrepreneurs, nascent or experienced) by facilitating individual learning processes, putting individuals in touch with potential partners, gaining access to and acquiring key resources, and finally, providing coaching.

Speaking from my personal experiences in our program, I can definitely say that the above has been achieved . I have engaged in venture creation projects by working on Trafvid, which incidentally, is now incorporated as a Swedish AB with me as the CEO. Our program in conjunction with LU Innovation has put me in touch with potential partners such as the two Engineering Professors with whom I started Trafvid with. Through partnership with Lund University Innovation of which Trafvid is a spin off , I have gained access to and acquired key resources such as start up monies and being eligible to join an incubator such as The Ideon Innovation Incubator which provides networking capabilities and business advice to start up companies like ours. Our Entrepreneurship program also provides a mentor dedicated to helping me succeed. My Mentor Micke has been very helpful in providing a sounding board for my various ideas about how to manage Trafvid given the challenges that every new tech start up venture brings.

CONCLUSION

Fiet (2000a) stated that "There is an ongoing debate in the entrepreneurship academy about whether we can actually teach students to become entrepreneurs". Some people still argue that it is not possible to teach entrepreneurship. For them, entrepreneurship is a matter of personality and psychological characteristics. One of the arguments that has been advanced is

that talent and temperament cannot be taught (Thompson, 2004). But one could argue that this is true for many professions and professional situations. Nobody will dispute the fact that medicine, law, or engineering can be taught and yet there are doctors, lawyers and engineers who are talented and others who are not (Hindle, 2007). A similar argument can be made for entrepreneurship and entrepreneurs. This analysis is confirmed in Peter Drucker's words quoted by Kuratko (2005, p. 580):

“It is becoming clear that entrepreneurship, or certain facets of it, can be taught. Business educators and professionals have evolved beyond the myth that entrepreneurs are born not made”

From the above quotation and the research done by researchers in the field of entrepreneurship educator, I would say that I agree that entrepreneurs are made and can be taught. Through my own entrepreneurial studies under the tutelage of our dedicated professors and the participation in the various events and activities that they have organized, I feel very confident that the skills in becoming a successful entrepreneur can truly be taught. However, we have to apply that knowledge for it to be truly valuable. Trafvid AB is open for business and the time has come for me to apply the skills and knowledge that I have acquired during the last nine months. Entrepreneurs have to be constantly self motivated. My suggestion to educators who design and decide what to include in entrepreneurial studies is perhaps to include classes on self awareness and motivation. If entrepreneurs can learn how to manage stress and learn new ways of keeping motivated, that would help in keeping optimism alive in order to survive the process of new venture creation and managing the business. Perhaps more classes on sales and marketing from successful sales coaches and marketing professionals would be helpful in increasing the competencies of potential entrepreneurs.

One of the most important lessons I have learned from being in the program is that working with the right people in a team is crucial. The best business idea in the world would not go anywhere if the wrong people are in charge of developing the idea and turning it into the reality of a viable business. The entrepreneurial team is the most important asset a new venture can have. In the Trafvid team, I have found the right talent to complement my own skills and we also have the innovative technology that we can sell as our core competency.

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The road for many entrepreneurs can be a lonely one fraught with risks and stress. There is a great amount of risk involved in starting new ventures. Entrepreneurs have to explore uncharted territory and the pitfalls are many, but the potential for success is also great. The best is yet to be! I am optimistic that given the excellent education I have received, I am well equipped to handle the challenges of managing Trafvid in the days ahead. The best is yet to be!

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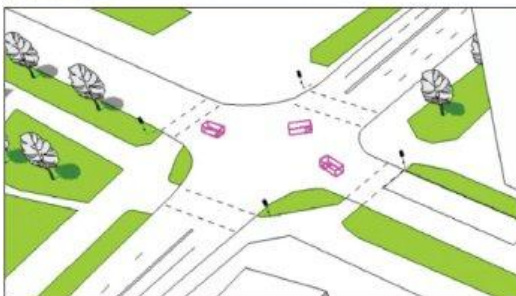
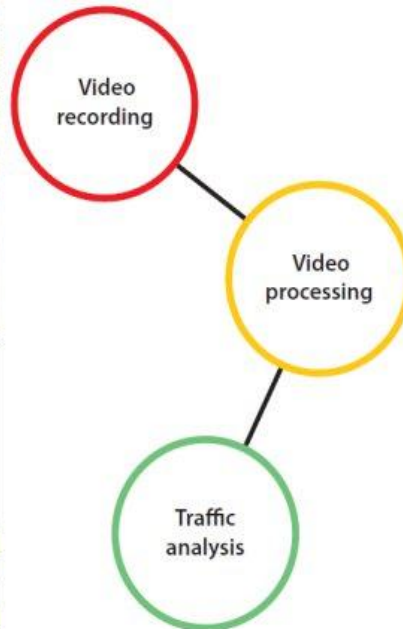
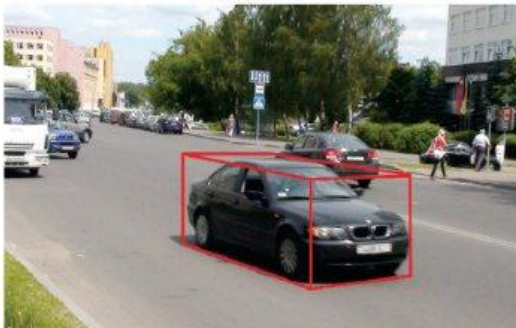
BUSINESS PLAN

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Janice Tan & Jeremiah Dorai



INTELLIGENT TRAFFIC ANALYSIS – Through Automated Video Processing



This business plan is submitted to Professor Tomas Karlsson, for BUSP01 Degree Project, Entrepreneurial Project-Master Level, School of Economics and Management, Lund University, Sweden.

BUSINESS PLAN

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Business Plan Objective

The aim of this business plan is purely for grading purposes and academic review. The other important objective is to allow the entrepreneurial team to have a road map of what to do, where to go and how to get there. (Hisrich et al 2010 pp 185) A business plan also provides legitimacy. According to Zimmerman et al. (2002), "legitimacy is a resource for a new venture – one that is at least important if not more than other resources like capital, technology, personnel, customer goodwill and networks".

Using Sarasvathy's theory of effectuation, which states that "an effectuation process starts with what one has,(who they are, what they know, and whom they know) and selects upon possible outcomes" (Hisrich et al, 2010, p. 10) We the entrepreneurs endeavor to succeed in our new venture, Trafvid, using our individual talents (who we are), our innovative technology (what we know) and our CTO and CIO's network of contacts (whom we know) to establish and leverage our industry contacts and to jumpstart our customer base. Hence we can then tailor our decision making processes by "selecting the different possible outcomes" of what projects to do for which customers in order to realize revenues and to grow our new venture.

Executive Summary

Trafvid provides a complete set of services related to the use of video in traffic studies, from experiment planning and camera installation to intelligent automated processing and analysis of the results. Trafvid is the name of our solution and is also our company name. We are a Lund University Innovation spin off company commercializing the results of at least two decades of research at Lund University, regarding the use of video in traffic analysis

Our core competence is to provide technical services using our special algorithm and state of the art software in analyzing the collection of detailed traffic data by utilizing automated video recordings and video analysis. What makes our solution different? Trafvid can detect and track vehicles, cyclists and pedestrians and measure their speed and acceleration with high accuracy. Our customers would be road and infrastructure planning, civil engineering companies, university traffic engineering faculties and municipality traffic planning departments.

We will provide analysis and consulting between 850 to 1000 SEK per hour depending on the complexity of the projects. We have our first customer, the _____ Municipality. There are also pending projects with _____ Municipality, X Company and Y Company in Sweden. See Letter of Intent (LOI) in the Appendix.




The value we bring to our customers is that of cost savings in terms of not having to hire people to observe and count traffic when monitoring intersections. Our Traffic consultants are experts in the field of Traffic Analysis. Our innovative solutions eliminate the problem of human error when people are hired to observe traffic behavior. Trafvid significantly improves the process and accuracy of traffic analysis. We provide accurate data which in turn can save lives when roads and intersections are made safer through improved road planning.



Organization (Team)

The product technology originates from the research collaboration of the Departments of Technology and Society and Centre of Mathematical Science at Lund University. Our technical team of consultants includes Aliaksei Laurelshyn, Assistant Professor and Thomas Jonsson, Associate Professor, at LTH School of Traffic and Roads. Janice Tan and Jeremiah Stephen Dorai are from Lund University's Master Program in Entrepreneurship. They form the Business Team and provide all essential activities related to business strategy and development, marketing and sales functions. David Svensson our Chairman of the Board also serves as mentor and business advisor. A mentor is instrumental in helping a new venture, "contributing important skills to the new venture's achievement of planning goals and who will show good judgement in business decision making" (Hisrich et al, 2010, p. 273).

Background & Description of Trafvid Team

Team Members	Background and description of role in TRAFVID
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	<p>Janice Tan is the CEO. She has experience in consultative software sales & technical consulting services of Enterprise Software Solutions for Fortune 500 companies such as Rational Software (now IBM) Mercury Interactive (now HP), as well as optimizing the sales performance of Swedish & American IT teams. As the CEO, Janice oversees strategic planning and execution of activities within TRAFVID. She is also responsible for the realization of sales, marketing and revenue objectives. She is currently enrolled in the Master program in Entrepreneurship at Lund University. In 2009, she was in the Master program in International Economics with a Focus on China, at Lund University.</p>
	<p>Jeremiah S Dorai is in the Business Development and Strategy role. His main focus is on financing/ accounting, marketing and promotional efforts. He is currently enrolled in the Lund University Master Program in Entrepreneurship. Jeremiah has studied in Singapore & the Netherlands prior to studying for his first Masters in Corporate & Financial Management at Lund University. His expertise is in accounting, finance, operations & logistics. He also has prior experience running his own start-up.</p>
	<p>Thomas Jonsson, PhD is the Chief Information Officer. He is an Associate Professor in the Department of Technology & Society, Faculty of Engineering, Lund University & also a Project Manager in Traffic Engineering at the consultancy company Ramböll Sweden AB. Thomas has a main research focus on traffic safety analysis & has applied video analysis as a tool in different studies of safety & traffic operations. His role in TRAFVID includes establishing the customer base through his extensive network and contacts in the Traffic Administration both in Scandinavia and abroad.</p>

	<p>Aliaksei Lareshyn, PhD is the Chief Technical Officer. He is currently an Assistant Professor at Lund University, Faculty of Engineering, LTH, Department for Technology & Society, Traffic & Roads. Aliaksei has been working with video analysis in traffic applications since 2004 & his doctoral thesis is the foundation for TRAFVID. He has extensive experience in the practical application of video analysis technology, from camera installations to video data management, processing & interpretation of the results. His main role in TRAFVID is to oversee and maintain all technical aspects of the software and service offerings.</p>
	<p>David Svensson, Chairman of the Board and Business Advisor/Mentor. He studied at Lund University LTH in Computer Engineering, Physics and Electronics. David has extensive experience in electronics design, application software and mobile communications at National Semiconductor, Ericsson & Sony Ericsson. He is also founder and CEO of Itinerary Systems, known later as Wayfinder Systems (IPO in 2005). David is an engineer and successful entrepreneur. In his capacity as Chairman of the Board, David plays an active role in contributing his technical expertise and business acumen to our new venture.</p>

Team Profile Matrix

Scale from 1 to 5 with 5 being the best	"Hard Factors"					"Soft" Factors			
Management Team members' skill profile	Technology	Finance	Project Management	Relationships/Networking	Sales & Marketing	Social Skills	Initiative	Communication	Negotiating Skills
Janice Tan	3	4	4	5	5	5	5	5	5
Jeremiah Stephen Dorai	3	5	4	4	3	4	5	5	4
Aliaksei Lareshyn	5	3	4	3	3	3	5	5	4
Thomas Jonsson	5	3	4	5	3	5	5	5	4

Learning Styles (Honey and Mumford's model derived from Kolb)

Type	Characteristic	Team Members
Activist	Prefers doing and experiencing things	Janice, Aliaksei
Reflector	Likes to observe and reflect	Aliaksei, Jeremiah
Theorist	Wants to understand underlying reasons, concepts, relationships	Jeremiah, Thomas
Pragmatist	Likes to have a go; to try things to see if they work out	Janice, Thomas

The Trafvid team’s education, skills and core competencies complement one another(see Learning Styles Table above) As a team, we not only have the necessary skills, the talent and the technology, we also have the passion, and the synergy that is vital for a new start technology venture such as Trafvid. Education is important in the upbringing of the entrepreneur in that it plays a major role in helping the entrepreneurs cope with the problems they confront. (Hisrich et al, 2010 ,p 38)

Company Mission and Goal

Trafvid’s mission is to provide intelligent traffic analysis via video processing, not only to enhance today’s less efficient methods, but also to improve infrastructure and traffic planning in order to significantly improve safety standards, reduce accidents, decrease traffic conflicts and thereby save more lives.

We aim to build a team of world class traffic analysts for automated video analysis. Our objective is to be the industry leader in providing advanced traffic analysis solutions. Via TRAFVID, we hope to provide a safer environment for road users by helping to improve the planning of traffic intersections, roundabouts and other infrastructure.

Trafvid is a spin- off company from Lund University Innovation. It is an example of the partnership between Academia and Industry, transforming innovative University research into viable and successful ventures.

Business Model

We will start by providing technical services for implementation of our Trafvid software and analysis. We will charge an hourly basis of 850 – 1000 SEK for our consulting fee. (See Market Analysis and Potential Revenue Table and Revenue Tables).

Business Idea

Our Intelligent Traffic Analysis solution is the result of 2 decades of research by our team of talented researchers specializing in Traffic studies at Lund University's Department of Technology and Society and Centre of Mathematical Science. We plan on commercializing this research into a viable business called Trafvid.

Uniqueness

Trafvid utilizes state of the art algorithms and techniques for automated video analysis, enabling us to record 3-4 months of video for the customer. By letting computers do most of the work, we reduce the amount of manual labor that is often a cost prohibitive factor in traffic studies. For a demo of our application, please see www.Trafvid.com/Demo.html.

We do not plan to patent our technology at this moment, since in doing that, we would have to disclose more proprietary information that might be taken advantage of by our competition. We have, however, published several research papers which the Traffic Industry and public can access. Our algorithm and cutting edge technology is inimitable, hence a patent is not necessary.

Customer Value and Benefit

"My dream has been for long that _____ City Planning Department would have a video analysis program for all kind of traffic studies."

_____ *from* _____ *Municipality*

At the moment, collection of detailed traffic data is done in a very limited scope. In most cases it has to be done manually. Often it is not done at all due to high costs involved. Reliable and sufficient amounts of data are crucial in order to determine the quality of the traffic modeling results. There is increasing interest and significant need among traffic consultants and researchers who work with traffic

modeling to have a tool that can collect more accurate data on a tighter budget. Trafvid bridges the gap and provides a cost effective solution. Though there is strong agreement between traffic researchers about the advantages of the safety forecasts based on rare events in traffic (e.g. serious conflicts), such methods have not become a routine in traffic analysis due to costly and time consuming method of hiring people to observe accidents at intersections for however long it takes. Our system is able to analyze long-time recordings and automatically detects traffic conflicts and that in turn reduces manual costs.

Advantages for the Customer

- Data collection made cheaper and requiring less manual labor (up to 90% reduction in manual labor in not having to hire people as observers and to manually count traffic). Our video recordings can provide more reliability, accuracy, consistency during longer periods of up to 3-4 months.
- Ability to follow the vehicle through the whole area of interest and analyze events in this area.
- Analysis of near crashes, rare events and traffic behavior.
- Our software housed in cameras recording from multiple angles increases measurement accuracy
- Dramatic reduction of manual labor in observing and analyzing traffic behavior, which in turn reduces human error
- Ability to analyze the behavior of cyclists and pedestrians, not only vehicles
- Can record up to four months of video footage in a session, thereby reducing costs of having to hire people as observers and to count traffic

Competition in Europe

_____ in Germany uses traffic simulation models to analyze traffic and the other, _____, in Belgium, uses a less advanced technique to analyze real traffic data. _____ solution can only analyze certain zones in the area they are monitoring. That method of using only one camera, can only detect if a vehicle passes the zone in question, they cannot follow the vehicle as it moves. These companies do not offer an exact solution to the extent we can with automated video processing (see our advantages) We also do not do simulation models so in essence ,we are not really competing in the same market segment as _____

Competition in Sweden

_____ in Sweden is the closest competitor in that they also do video analysis. Hence they are our top competitor in Sweden and at present the only company which does video analysis, so they have the entire market share of video analysis in Sweden. Their projects involve mainly traffic counts and they analyze the direction of the detected objects (cars), not only count passages over a stop line. Our solution is far superior to _____ in that we can analyze longer periods (weeks, even months) and detect events that are quite rare (such as cyclists going in the wrong direction) and we can produce the footprint of road users on the road – necessary.

Development Stage of Trafvid

The software that manages the output from the video processing program is 100 percent customer ready. The software has been utilized in real life scenarios in Sweden on two different occasions. One of the projects was to analyze the bicyclist's effect on traffic while going against one-way streets in Stockholm. The goal of the project was to analyze this effect and to make Stockholm a bicycle friendly city. Trafikkontoret in Stockholm was very satisfied with the results that our video analysis captured the conflicts between cars and cyclists, thereby allowing Trafikkontoret to design safer roads for pedestrians and cyclists. They have indicated that they would definitely use Trafvid in the near future when it is time for implementation of their plans. The other study was conducted in Lund, where we analyzed roundabouts and the traffic behavior of vehicles, bicyclists and pedestrians. The goal of this research was to improve the safety for cyclists and visually impaired in roundabouts. Lund Trafikverket which sponsored the PHD research project for this study was very satisfied with the results. The supervisor of the project, a collaboration between Lund University and Lund Trafikverket, had this to say:

"Automated video analysis is a new valuable tool in studies of traffic. The situation where we spent weeks watching and observing traffic is now history. Instead, you can record for months and let computers do the job for you."

Professor Emeritus Christer Hydén Technology and Society, Lund University

Marketing Plan

Target Market

We will target the Swedish and Scandinavian market first since this is the area where we have the most knowledge and experience. Thomas Jonsson, our CIO has contacts with various regional Traffic Administrations and we can utilize existing relationships and contacts for our initial customer base.

- Infrastructure planning departments of state, city & municipalities
- Civil and structural engineering firms
- Traffic consulting firms
- Collaboration with other leading traffic analysis software providers to enhance their product offering, by using real field data for simulations/model validation

Initial Customers

There are three big consultancy firms such as _____, _____ and _____ working with traffic analysis in Sweden, none of which have yet to use automated video analysis to the extent that Trafvid can provide. Most are using people to count traffic. We could collaborate with them in providing our traffic analysis system to their customers. This would be a good way to introduce our product to the market. We also recently attended Sweden's largest Traffic Forum the VTI TrafikForum in Linköping this January. We shared the booth with ____ and many people stopped by our TRAFVID booth. We talked to many potential customers who expressed an interest in our solution and we have now been working on several leads for potential business.

The _____ Municipality will be our first customer. They want us to conduct a "before and after" study of a roundabout that is being narrowed to reduce speed of vehicles and to make it safer for cyclists and pedestrians. We have a verbal agreement to do the project- We can use this as a customer reference and as a stepping stone into the _____ market. Ruokolainen (2008) tells us that "the next potential customer may appreciate the credibility gained from the first customer reference more than the innovativeness or low price of the new product. The importance of the first customer reference is undeniable and that the first customer reference is essential in attaining the necessary credibility to convey trustworthy market messages."

Market Analysis and Potential Revenue

(Based on the estimated budget allocation of the Swedish Trafikverket	Swedish Market (Total) MSEK	Growth %	Trafvid Market MSEK	Trend	Target Market and Segment
Research projects	200	10	1	↗	Video analysis is used as a tool in complex research project. Infrastructure planning departments of state, city, municipalities, Road Administration, . 2-4 projects per year, our share about 300-500k SEK per project
Evaluation studies	100	10	3.2	↗	Medium size projects. Financed by large municipalities, road administration. 200-400k SEK per project. 6-8 projects per year.
Validation of traffic models	50	5	2.9	↗	Traffic consulting firms. Small projects, 1-2 days filming. 50-80k SEK per project. 2-3 projects per month
General and Collaborative Projects	20	5	1	↗	All miscellaneous projects related to traffic analysis & Collaboration with other leading traffic analysis software providers to enhance their product offering
Total Market Potential			8.6		

Implementation

Activity	Months (Starting from April 2011) →	2011												2012											
		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1. Incorporation of TRAFVID AB		→																							
2. First Customer		→	→																						
3. Prospecting other customers																									
4. Software Optimization & Upgrades																									
5. Hiring & Training Personnel																									

We are also in the discussion with _____ - and other companies regarding the use of video analysis to monitor some of the intersections, roundabouts and roads that they are working on for their consulting projects.

As a result of these future projects, we plan on further software optimization and upgrades to accommodate customer requests. As we continue to have additional customers and projects, we need to hire more personnel. Recruitment can be from the pool of graduate students at LTH who are interested in video analysis as part of their traffic studies.

Risk Analysis

SWOT (Strengths, Weaknesses, Opportunities and Threats)

Strengths

- First in the market to introduce a video analysis system that can record up to 4 months of footage.
- 90% reduction in manual labor leading to estimated cost savings
- Video software is 100 percent ready and has been used in 2 successful trials in Stockholm and Lund
- _____ as first customer
- Established contacts within the Swedish Traffic Administration market
- Conducted 2 successful trials in Stockholm and Lund which shows that Video Analysis plays an integral and important part in getting accurate and reliable results in traffic studies

Opportunities

- Pending Sales with
 - X company
 - Z company
 - _____ Municipality

- Close ties to _____ and the opportunity to work with them as a subcontractor.

Weaknesses & Threats

- Lack legitimacy by being a new company with new entrepreneurs.

Action: Working with _____ provides legitimacy for Trafvid and Trafvid is currently working on an aggressive marketing plan to target new customers. Attended the VTI Transport Forum in Linköping on January 12-13th (see Appendix) to introduce Trafvid.

- Limited manpower so Trafvid can only accept projects that it has the capacity to handle.

Action: As the business grows, additional manpower will be hired from the pool of graduate students at LTH.

- Threat of New Entrants

Action: The race against time to market is crucial. We want to establish first mover advantage in implementing Trafvid. According to Liberman et al, (1998), the first mover advantage enables the first mover to gain customer loyalty by being the first in the market.

Economical Benefits & Sustainability

We believe that our traffic analysis system has more advantages than any other existing system. Our value added is that we have a team of traffic analysis experts to provide professional expertise in analyzing the data that can be collected by our automated system. By helping cities to be bicycle friendly, we can encourage more people to reduce their dependence on cars, thereby improving air quality. Video analysis can help to improve road planning and prevent serious conflicts from occurring, making it safer for all of us who use the roadways every day.

Exit Strategy

At the present moment, the owners of Trafvid want the majority of the company to be privately owned. In the future, depending on growth revenues, we might consider a trade sale.

Appendix

Letter of Intent (LOI)

Company	Consulting Project
_____ Municipality	Monitor intersections
X _____	Monitor roundabouts and intersections
Y _____	Monitor sections of two roads

Profitability and Financial Information

Table 1. Consolidated Profit and Loss Account

Proprietary info not to be made public

Cash Flow Analysis

VTI Transport Forum

At Linkoping, Sweden January 12-13, 2011



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