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1 Introduction

The society has gone through massive changes the last 25years. From the development of modern computers to enhancement on many technological fields have brought us the possibility to do to a large extent what we want. Many of these changes have led to new possibilities and new markets penetrations.

In this restructuring of world business and trade, the global industries became more and more expanding having production in China, customer services in India, but primary market in North America and Europe. In Sweden over the last 15 years there has been a huge expansion in entrepreneurial activity and many new and innovative ventures has prospered. As Landström & Benner describe in “Entrepreneurship research a history of scholarly migration” state the importance of political incentive by politicians such as Ronald Reagan and Margret Thatcher to enroll entrepreneurship into scholars within management studies.¹ The field of entrepreneurship has developed into management and economic factor supported by governing bodies and additionally made it possible to bring innovation to the marketplace.

These business opportunities are according to Ardchvili, Cardozo and Ray in “A theory of entrepreneurial opportunity identification and development” made and not found.² All new markets for entrepreneurs have to be carefully investigated and a important step is to see how creational or sensitive the market is before a entrepreneurial opportunity begins. The new school of entrepreneurship according to Ardchvili et al. needs to focus on “opportunity development” rather than “opportunity recognition”.³ This principal is what I will be wanting to investigate in my paper. In this paper it would be interesting to investigate how I tried to develop an opportunity rather than recognize one. The main reason for this point of view is that I have been developing already existing products from Region Skåne and Airglass. Airglass AB developed a product that we are about to bring to the market. This entrepreneurial perspective will be the main guidance in this thesis.

¹ Landström, Hans & Benner Mats (2010), Entrepreneurship research: a history of scholarly migration, p.29

² Ardichvili, Alexander & Cardozo, Richard & Ray Sourav (2003), A theory of entrepreneurial opportunity, identification and development, p. 106

³ Ardchvili et al. (2003), p. 106

1.1 Problem formulation

The entrepreneurial processes have evolved during the last decade and in the modern way of satisfying the customer are to offer more than just functionality. The near contact with potential customers and seeing the need becomes important in constructing an offer and in particular to understand and know the market. For my own sake I have during the last year learnt many powerful and crucial things.

The entrepreneurial “way” of conducting business has become more and more common and through my experiences I feel that Saraswathys theory on causation and effectuation, where effectuation in combination with entrepreneurial opportunity identification by Ardchvili et al. has brought upon a different approach towards running a venture and expanding it. The economical diversification in the modern era and the entrance of the entrepreneur has shifted the notion on how to conduct business and in particularly when and where. The product, customer service and trust from potential customers has become very important and in this thesis my aim is to clarify the different processes and eventually forge the notion of the three theoretical approaches in the analysis into a package that will show how they interact and how they present themselves in real life.

For this thesis the projects I will look upon and compare through the mentioned theoretical approach are “The dental health tray” which was a collaboration with my college Marcus Fütö and Innovator at Region Skåne and Greenglass with that I am currently driving towards a real market. Greenglass is an energy insulator developed by Leif Gullberg and my colleague in this project is Blaz Mateljic. The projects have some similarities but they differ in many ways. One of the crucial differences and the reason I chose this topic is the difference of bringing a product to the market if the product is owned by a big buerocratical organization such as Region Skåne, or is it is a result of years of research by a scientist.

In any case the problem area will be described further later in the text. I will in the next segment describe the purpose, highlight the questions and restrictions so that it is clear what areas I aim to investigate and what areas I will not be entering.

1.2 Purpose

The purpose of this thesis is to highlight and increase the knowledge about entrepreneurial activity in practice and see how the theoretical framework combined has helped my own personal growth both as an entrepreneur and a communicator of the product in mind. The thesis rests on three pillars where the effectuation is slightly more highlighted than entrepreneurial opportunity recognition and the different trust processes.

1.3 Question

- What are the comparative differences between Dental health tray and Greenglass?

1.4 Restrictions

The restrictions concerning this thesis are primarily that I will not compare any other projects than the mentioned ones. Since time is of an essence and Greenglass making it to regional finals in Venture cup south the time will not be enough to widen my research field. I will primarily base my research on current literature from the program which I feel is adequate and particularly because the literature is peer viewed.

2. Theory

The theoretical approaches that are seen through this thesis are effectuation, legitimacy and entrepreneurial opportunity recognition. These theoretical approaches will be helpful in the analysis of the thesis since their importance to the entrepreneurial process in working with the different projects is crucial in this study. In this chapter I will highlight the theories in order to connect them for a clearer picture of their role and part in the development of these projects.

2.1 Effectuation

Causation and effectuation: Toward a theoretical Shift from economic inevitability to Entrepreneurial contingency by Saras Sarasvathy is an influential theoretical approach that explains the difference between a “A-Ö” causational approach and the more entrepreneurial effectuation approach. For this thesis the causational approach will not be used since the effectuative approach is more in line with entrepreneurial activity. Entrepreneurs starting their own business usually have their own idea or agenda. For what the reason of starting a company might be, the entrepreneur can be guided by their own desire, such as making a lot of money or running a successful firm and so on.

Saraswathy stresses the importance that a decision has to be taken in consideration is if the firm is going to be started at market that does not yet exist. This usually is connected with the way an individual person relates to his or her surroundings and not necessarily the persons values. The secret of starting up a business of that sort is that the knowledge of how markets come to be.⁴ The two processes can be explained as following. The causation way to apply something is to follow a recipe from A to B. The effectual on the other hand is to see what is available and start from there.

For the Projects of dental health tray and GreenGlass the effectuation process has been more highlighted in the GreenGlass project but the most important thing is to realize that effectuation is a process. This process is deeper and more conceptualized in GreenGlass but non-the less it is shown in both projects. I aim to show how effectuation and how it is portrayed in both projects. The effectuation process of business and firms are not likely to be

⁴ Sarasvathy, Saras, (2001), Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency, Academy of maagment review, s, 244

as static as the causation firms.⁵ The four principles of the effectuation decision making in contrast to causation decision making are;

- Affordable loss, rather than expected returns.
- Strategic alliances, rather than competitive analyses.
- Exploitation of contingencies, rather than preexisting knowledge
- Control of an unpredictable future, rather than prediction that could be used as a basis for future empirical work.

The goal of effectuation can be seen from many different angles. We will apply effectuation on GreenGlass from a few perspectives. One is that GreenGlass is versatile and the potential is big, then an entrepreneur can chose to enter an existing market, or create a market for the product. An effectuate way of working means more flexibility when it comes to strategic decisions, but not only that. One of the main points behind effectuation is that the marketplace is ever-changing and that flexibility is of highest essence if the entrepreneur will have a chance to develop his venture. The flexible way of reaching a goal has become more common and entrepreneurs are working effectuate because they can move in-between hindrances and still reach the goal without using tools that were decided in advance.

2.2 Entrepreneurial opportunity identification

There has to be a successful opportunity and a development process. The development stage is likely to be cyclical though the entrepreneur will conduct evaluations during the build up. According to this article the selecting of right opportunities for new businesses are among the most important actions if the aim is to be a good entrepreneur. This article has its theoretical structure in existing theoretical and empirical studies in the area of entrepreneurial opportunity identification process. Dubin's theory building is the prime theoretical structure in this article and his theoretical framework consists of eight phases.⁶ The key word opportunity is mentioned many times but one of the most interesting interpretations of the word is;

⁵ Sarasvathy (2001), s. 259

⁶ Ardichvili, Alexander & Cardozo, Richard & Ray, Sorav (2000), A theory of entrepreneurial opportunity identification and development, s. 107

- *“In its most elementary form, what may be called an ‘‘opportunity’’ may appear as an imprecisely- defined market need”⁷*

During the start-up of GreenGlass the opportunity was an undefined market need and in this theoretical approach I will disclose how we went about to precisely determine the market. Opportunity though perception, discovery and evaluation of a opportunity are the framework that the article rests on. The theories are a bit complicated but they are easier to understand and reflect upon when the theory is visualized as in the case of Value, creation, capability.⁸

2.3 Legitimacy

Legitimacy is important big firms as well as the smaller ones. Zimmerman&Zeitz cover legitimacy and how legitimacy is risen and improved. The central aspects are;

1. Legitimacy is a resource important for acquiring other resources, such as top managers, quality employees, financial resources, technology and government support.
2. Such resources are crucial for new venture growth.
3. Legitimacy can be enhanced strategic actions taken by the new venture.
4. Such strategic action is particularly important for new ventures, since this is precisely what they usually lack.⁹

This article raises the question about legitimacy. How can it be raised? Why is it important? Legitimacy is not as easy to measure as financial reports. This theoretical approach was extremely important in our work with the farmers. And because of that it is important to know that legitimacy isn't observable. It lays within the psyches of the social actors around us and who maybe aren't aware that legitimacy has a role on their direct and indirect decision making. The greenhouse farmers needed to feel trust for me in order to open up and share, and additionally when the product gets produced then they want us to install it. There are many ways to acquiring legitimacy if the venture is newly started. The newly started firms

⁷ Ardichvili&Cardozo&Ray (2000), s. 108

⁸ Ardichvili & Cardozo & Rayv (2000), s. 117

⁹ Zimmerman, A. Monica & Zeitz, J. Gerald (2002), Beyond survival: achieving new venture growth by building legitimacy, s. 414

need legitimacy when applying for resources from the private investors and so on. One of the ways to acquire legitimacy can be to reinforce the management team so that the competences can be improved and thus having the effect of a strong and feasible business.¹⁰ In this essay the importance of legitimacy and trust will be one of the forefronts and the decisive part of our success.

3 Method

For this thesis the methodological approach that I will be conducting is auto ethnography. The structure of the thesis is built upon auto-ethnography and in particular my own reflections on the differences between Green Glass and Dental health tray. I have chosen to study the difference between these two projects through the perspectives of effectuation, entrepreneurial opportunity recognition and legitimacy. I chose these three approaches because they would be essential in explaining the difference between the two projects, and even maybe more important why the projects had different outcomes.

3.2 Auto ethnography

To conduct a scientific report or some form of research is to reconstruct a certain social reality and through interpretations create an image of how experiences and relations can be understood. The methodological approach in this thesis offers the possibility for first-person accounts, beginning from the personal experience of the author.

Auto ethnography does on a intimate and categorical level relate the research process to both the surrounding world and the author himself. It draws on personal stories and narratives and takes the researcher as subject and him from a troublesome aspect.¹¹ In this thesis my goal is to portray the difference of working in those two projects and on which level the difference is portrayed. As the

3.2 Hermeneutics

In this essay i will also be using the methodological approach of hermeneutics. Hermeneutics is the teaching of interpreting and understanding of certain discourses. In this essay the

¹⁰ Zimmerman, A. Monica & Zeitz, J. Gerald (2002), s. 421-422

¹¹ Atkinson, Paul & Coffey, Amanda & Delamont Sara (2003), Key themes in qualitative research – continuities and changes, Alta Mira press, Walnut Creek California, p.65

hermeneutic approach is meant to be complementary with auto ethnography since my own understanding of the two projects need to be relevant and not bias I feel that hermeneutics will help me think about and try to relate to why the projects were different and why the results were conclusive in one project and why they were not conclusive in the other rather than just concluding that one of the projects was better than the other one. Human beings often have a pre-understanding of certain situations which helps us to interpret different situations in our everyday life. The essential part of hermeneutics is the meaning that one part only can be understood if it's put in a context with the full unity and the other way around.¹² This circle, from part to whole and the other way around, is called the hermeneutic spiral. I have read the business plans, the weekly journals I wrote and all other material that I have been working on concerning the two projects which was done in order to get a broader understanding and a more objective approach in comparing them. The sociology professor Heine Andersen describes the different methods of hermeneutics as they are based on the writings of a subject and that the researcher then reconstructs the subjective images of the subject into an objective point of seeing.¹³ The aim for this thesis is to see how the different projects were coming along and where they differed and how. The probability for a subjective view is very high, and by pointing out that the interpretation is inevitable I can on a more ethical level keep my objectivity. By using auto ethnography in combination with hermeneutics the character of the thesis is qualitative analysis. The gathered material has been read through, involving formal documents, my own notes and school literature. The gathered information has been put in a context through a precise and cautious review of the material, where the goal is to highlight the different processes from my theoretical approach to see the projects from that point of view.

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¹² Alvesson & Sköldberg (1994), s. 114

¹³ Andersen Heine (1994), Vetenskapsteori och metodlära – En introduktion, s. 187

4 Dental health-tray & GreenGlass

In this chapter I will describe the two cases that will be compared to each other through a chronological order. The first case will be Dental health tray where I developed a tray that would be used to clean semi- or completely paralyzed patients at hospitals. The other case is GreenGlass and I am still working with that venture that also possesses a bright future.

4.2 Dental health tray

The first project that I was involved in was the dental health-tray. Originally we were three students involved but with time one dropped off and the project was run by me and Marcus Fütö. The dental health-tray project was originally derived from a nurse at the regional hospital in Helsingborg. She had real issues with the structure of dental equipment while nursing the mouth hygiene on semi or totally paralyzed patients. The work for this project was lined out at the beginning and we had to design the tray and then market it accordingly to the principals that were available to us. This meant that Region Skåne would have the rights for the product and we would license it from them. This meant that we would invest our own capital for the production and distribution of the trays and Region Skåne would take a percentage from our turnover as a license-fee.

The work was cut out for us already from the beginning when there was not a product to start with. We went to work by interviewing hospital personnel at the intensive care unit and retirement homes across Lund to identify the potential need. It was clear very early on that the product only was sought after in the hospital area where the patients are semi- or completely paralyzed. We went to work and designed a tray that Region Skåne would produce at their technical department in Helsingborg, while we were looking for potential customers. We additionally knew we would need to make some kind of product introduction where we would invite key personnel at hospitals and let the nurses talk about the product. We wanted to get going with planning of this event, while simultaneously we were preparing a meeting with

Region Skåne where we would discuss the next step. We had great communication with our contact person at Innovation Skåne, but we could not agree upon the future distribution of the product. Since it was becoming very difficult to correctly analyze the market, partly due to Innovation Skåne that said there was interest for up to 50 trays in Helsingborg, and the research in Lund was contradicting because nobody would be interested in the product. These events made us rule out investing our own capital due to the uncertainty of the product potential. We wanted a letter of intent but Region Skåne was not interested to sign anything, not even a declaration of interest. This was the harsh reality of the product. We from then on knew that we will have a hard time launching a product since we could not invest that amount needed to bring down the price for a single tray to acceptable price levels.

Region Skåne got the most out of us when it comes to designing the product and getting information on where the product is most likely to be used. For me and Marcus this was a problematic time and when I mentioned that the only way that I see myself going on with the product was to put it in the product catalogue of medical companies. I knew and so did Innovation Skåne that would not become the case since we would be the middle man and eventually we would not be able to make any money. The deal with the inventor meant that we would get a certain percentage and then the medical companies would want their share which meant that the profit margin would be too low for all parties.

4.2 Greenglass

GreenGlass is an aerogel application that was invented approximately 30 years ago. During that time the researcher and founder of the aerogel worked with different compositions in order to maintain the insulation capabilities and to get the product as transparent as possible. I and my colleague Blaz Mateljić got in contact with one of the owners of AirGlass AB and we were free to choose what market we wanted to pursue with AirGlass. After numerous of discussions about different markets and their potential we chose the glass-house market due to the possibilities for the product.

The glass-house market needs to change due to the higher taxation on carbon emissions including the increasing energy prices. We saw a possibility to enter this market with our product because of the insulation capabilities it possessed. In short, this means that the heat would not leave the greenhouse due to the insulating capability of the product, and simultaneously the greenhouse farmer would not need to spend any money on heating the

greenhouse. We saw a great opportunity, but we needed to be wary of any pitfalls, especially in the beginning when the price was so high and our knowledge of the market so low. We started by interviewing consultancy firms within the greenhouse market to gather information and specifically to get to know the market better before we made any contacts with real greenhouse farmers. This was a good way to go about it since we would know what the farmers saw as a problem, and we could direct the product to fit their needs.

At the same time we were writing our business plan for venture cup and were very focused on making deadlines for the competition.

The first contact we had with a greenhouse farmer was very productive and gave us much needed input, but we could also introduce GreenGlass application areas that would cut down on the heating costs. We knew due to our extended research and interviews with both Alnarp University and private consultancy firms that the side winds was a big problem for greenhouse farmers since the glass could not isolate the plants and majority of the greenhouse farmers covered up the sides of the greenhouse with non transparent isolating cloth. When we told them that GreenGlass would not let any wind through and that the greenhouse did not need any isolation cloth they were happy and content as if a big problem could be solved with GreenGlass. I could see, right then and there standing and talking to a greenhouse farmer that I was building his trust and that he saw the product as a future investment.

The structure after which we worked was that Blaz would handle the Dutch potential clients since he is Dutch and I would do the opposite in Sweden. This was a good arrangement because the farmer then felt closer and more relaxed when we spoke on the telephone.

The contact with the Swedish market and the people we met was priceless for our project. This was also shown in the venture cup and as the success there gave us more incentive to continue working hard, and at the same time trying our hardest to find economical ways to bring the product to market. We considered economies of scale with a business-model that was a performance based model. This model was based on the fact that we would install GreenGlass into their greenhouses and they would pay us 80% of their current energy cost and we would care for their energy expenses. This model was based on that every year we would decrease the price by 10% and eventually after eight years the farmers would get the GreenGlass for free and the next 22 years they would not think about ever-changing energy costs. For us this model meant that we would lock out competition for at least 8 years which

would be plenty enough to secure the future business for GreenGlass. When we laid down our business plan to two GreenGlass farmers, they liked it but expressed the wish to have a shorter time span, such as 5 years because that's standard.

During this phase of our project running March-April we feel that we were very close to the market. We also had an investor that would build the factory. This investment was worth about 60million Swedish crowns. At first it seemed very much, but we had some good talks with four greenhouse farmers and if they would have invested in the product then we would have had a turnover of 80 000 square meters, in monetary translation, the deals would have been worth about 80 million Swedish crowns. I know that the Greenhouse farmers are not content with the energy costs today. I looked through their annual reports and went through the energy pricing the last decade inclusive the short term predictions over the next 5-10 years and the result is stunning. The energy costs have risen and they will continue to rise, something that the Greenhouse farmers do not appreciate, especially with their constantly decreasing profit margin. An investment in GreenGlass would be quite expensive but the long-term effect would only be positive and the greenhouse farmers felt that GreenGlass was an actual and concrete solution for them.

During our work with GreenGlass we were in frequent contact with the greenhouse farmers and this increased their trust in our work, and they were glad to offer any new information that we would request. Additionally they were more open for discussion concerning Greenglass.

This project took my own beliefs and shattered them fairly early on. I thought that the idea was good but the price was too high. Today I feel that the price will be put in a context of pay-of time and ROI. I no longer feel that the price is to step but opposite. The product has a great potential and as our venture cup success indicates, we are not the only ones to think so.

5 Result

In this section I will compare the two projects through my theoretical approaches. I will start with the effectuation processes and show how the process differed in the two projects. Thereafter I will do a comparison on the theoretical approach of entrepreneurial opportunity recognition which is very important for this thesis as well as for my own personal growth. And to conclude the comparison between Dental health-tray and Greenglass I will compare the legitimacy issues we had and how they inflicted on the project itself.

To start with the effectuation processes the journey began with Dental health-tray. The difference between the two projects concerning effectuation way of approaching a project was substantial. Dental health-tray already existed earlier and the owner of the design wanted us to re-design it and market the product to the hospitals of Region Skåne while Greenglass allowed us to search for other markets that we could find interesting. As the project of designing the Dental health-tray took off in physical work, the first step of GreenGlass was to narrow down potential markets stringing from Greenhouses to oven hatchets.

When it comes to Dental health tray I found it very hard to work creatively as the organization of Region Skåne and the desires of the owner of Dental health tray already had decided that the tray would be marketed the way that they felt was right. On the other hand with GreenGlass we had much more flexibility concerning different projects and we got free hands from our mother company Airglass AB. This meant that we could mold our own venture in a manner that we wanted it. This created some challenges because we wanted to do the best job possible and even get the product to the market. We read up on the industry and the actors within the industry, the role of legislations and so much more to gain a perspective. We knew that we needed to be prepared and full of knowledge when we spoke to the greenhouse

farmers. Luckily Blaz is Dutch and had gathered information from Holland which was positively remarked from the greenhouse farmers since Holland is famous for their greenhouses and the technology they use.

Comparing Dental health tray and Greenglass one more thing was very decisive for me. With Dental health tray my only market was intensive care units at hospitals, and that market was pretty precisely two hospitals in Skåne that could find the product interesting. With GreenGlass on the other hand there are possibilities everywhere there is a greenhouse. With GreenGlass the farmers could choose what attributes they preferred more and where they wanted those attributes to be applied. As an example it was very clear that Greenglass could be used both on the ceiling and as the walls of a greenhouse. This meant that the farmer could use Greenglass insulation properties in the walls and have thicker panels there or he could adjust the transparency by buying thinner Greenglass panels.

When it comes to the entrepreneurial opportunity recognition the project Dental health tray was the first project and we couldn't really calculate back then if it would/could be a prosperous one. I went to work with Dental health tray thinking that I had a big corporation supporting me which would make it easier but this turned out not to be the case. The bureaucratic system at Region Skåne would make it virtually impossible to succeed with the product without investing 5 000Euro of our own money. On the other hand with GreenGlass we recognized the potential of the product while looking for future markets to apply this product on. We went through the needed development process and we quickly saw an opening because the market was unstable with big possibilities for expansion. The rising energy prices, the increasing taxation from EU and Swedish government in combination of an uncertain future, our product was well accepted if it would fulfill what it promised to fulfill. The investment would be somewhat expensive with a pay-off time of four years, but on the other hand Greenglass has a proven life expectancy length of 30 years. We could have chosen other applications for the product but on the other hand greenhouse industry was the most favorable one from both financial and growth perspective.

The legitimacy factor was quite different between the two products. With Dental health tray we got legitimacy because we were working with a big institution and their brand is strong. Region Skåne has both the financial power and a team that would develop the Dental health tray which meant that when we spoke to our potential clients they were at least assured that

we would deliver the product. On the other hand the need for Dental health tray was very low and there was a problem in really defining potential market.

Concerning GreenGlass we had some issues in the beginning to establish a trust towards potential customers since the smallest investment they would have done is about 20 million SEK. This meant that we had to be careful when discussing the product with greenhouse farmers since we knew that if we don't get their trust we probably wouldn't have succeeded as good as we have. At first it was clear that we didn't sell the product but we introduced it to the farmers. After the initial meetings we always kept the farmers up to date on any new changes which meant that they called us when we didn't get in touch for 2-3weeks. They wanted to know how it was going and if there was more interest in the product. We succeeded to gain their trust and their cooperation. This was due to hard work with a task to improve our legitimacy and gain trust.

From the start-up phase we had legitimacy with Region Skåne and this helped Dental health tray to determine the market potential within Region Skåne at first. But like I mentioned before the unsure market potential and the feeling that the market for the product was too small made the legitimacy unimportant. With GreenGlass it was somewhat different. To gain legitimacy with the greenhouse farmers was much harder but working in a strategic way where we would deliver new information, calculate on the investment and ROI for the farmers meant that when legitimacy was acquired it was one of the biggest assets because we also got trust from the farmers. This trust has no price because we were informed of details only known by greenhouse farmers concerning expenditures, their bargaining power with electrical companies and much more. The actions taken to increase the legitimacy actually became a solid trust from the farmers.

6 Method criticism

Auto ethnography has as well as any other methodological approach received some criticism. The criticism is based on the importance and reliance on memory, reliability and validity and to an extent generalization.¹⁴ The method in its core can make the author romanticize the self. The big argument in this case is the balance. How should an author keep the right balance without straying of from the neutrality of the theme towards a form of self indulgence?¹⁵ For this thesis I believe that auto ethnography can be a source of insight and a full analysis can be done based on myself and the reflections I have.

¹⁴ Atkinson et al. (2003), p. 66

¹⁵ Atkinson et al. (2003), p. 66-67

7 Analysis

The conclusion in the essay is that both projects were very giving and my own growth is shown through both of them. From an opportunity recognition perspective Greenglass was the best product with the strongest market possibilities. The theory approach of entrepreneurial opportunity recognition was for much more in line with Greenglass than it was with Dental health tray.

The possibilities for Dental health tray were extremely small all ready from the start as the processes of legitimacy, opportunity recognition and effectuation are pieces of a bigger picture. From the investment point of view, if Dental health tray was looked upon as a potential investment opportunity for a venture capitalist it would never have been picked up.

With Greenhouse farmers we worked on acquiring legitimacy in the beginning in order to connect on a personal and then professional level. The result was that we managed with that

accomplishment since the farmers were always willing to provide new information and at the same time be informed of any new changes. We even got an offer to install GreenGlass in one of their small Greenhouses as a pilot project. These were great news to us. Although we fought hard to gain trust and legitimacy the most important thing was the approach and the communication that was established. In the literature we have read that legitimacy can be acquired in several different ways and that the trust bonding process is important when it comes to concluding business. I always had that in mind when speaking with the farmers. Since I am aware that networking is important and that business actually happens if every party has trust in the ongoing processes I tried very hard to keep the process of communication and sharing of information active because I knew that the product at the end of the pilot testing phase would attract the Greenhouse farmers even more.

I would like to go back and discuss the perspective of Business opportunity recognition. Looking back on the projects and the outcomes it is very clear to me that I overestimated the Dental health tray because it does not matter how good the product is to me if the surroundings don't find it attractive to the market. The potential investors are not necessarily in the medicine market meaning that they may not realize the real potential of the product since they don't see the need. I felt that it was just opposite when it comes to Greenglass. The need was there automatically, and the Greenhouse farmers, consultancy firms and VC:s we interviewed immediately recognized that the potential is real. I think that it was down to the quality of the product and the need for it due to legislation changes in Sweden and EU. I felt that I was beginning to know when to try to convene the necessity of GreenGlass and when to actually steer the conversation to the need of the farmer.

Even if trust and legitimacy were very important due to the personal contact that I had with potential customers, I used the effectuate process very much in the beginning when we discussed the potential markets for the product. Later on effectuation was used primarily when discussing where we could apply Greenglass in a greenhouse and why. This was important because it gave width to our product and at the same time we could constructively discuss both business and the benefits Greenglass could offer.

The three approaches on effectuation, legitimacy and opportunity recognition were present in both Dental health tray and Greenglass, although there was a big difference between the projects from a potential business point of view. It is very clear to me that if region Skåne

would have wanted to invest in dental health tray I would maybe have stayed put on that project. Now the aftermath of GreenGlass is that Airglass AB still wants me to be active in taking GreenGlass to the market. The last weeks have been very interesting and when we finished the project we thought it was time to go on with our careers. Nocturnal vision crew want to take the project one more step and they want me to be involved. This was very affirming and it was pleasing to know that expert entrepreneurs saw the work I have done and they needed my competence.

Lately I can't help myself of thinking how I evolved during this year and what roles the project had in my personal growth. Dental health tray was an extremely valuable experience because it is there I first realized what it takes to bring a product to market, and what processes are important. As an example early on in the project we found out that there would be little chance for a VC to invest in Dental health tray because the owner of the product was a nurse at the hospital in Helsingborg. We would license the product from her, Region Skåne would want a piece of the cake, then me and Marcus and eventually the VC. A VC does not fund projects that are that unclear. This is due to the rate of investment being too small. I took this with me in to the GreenGlass project and when the structure appeared I felt that a VC could potentially invest in GreenGlass because it has a realistic approach and a big market need to fill.

Entrepreneurship is very important for the society today and I realize that much more clearly today than I did just half a year ago. Since I was approached by the Nocturnal vision crew for a continuance with GreenGlass I began understanding the true development of my potential. Just ten months ago I was just another student to them, now in late May I am a potential partner. My growth is off course to a big extent thanks to GreenGlass because I had the opportunity to get to know a market and knowing that market tried to penetrate it. Great satisfaction is what I feel because I used as much as I could from both my prior education combined with entrepreneurship to be able to sit down today and look back at the reward. I feel much stronger, much more important and much better equipped for the future challenges. The other day I received a call from a potential investor, the owners of Airglass AB and sat down to discuss important details with Ben Page and Michael Hoy from Nocturnal vision.

Out of all I have written above I can make one crucial analysis about my own growth from Dental health tray to GreenGlass. I have become much more stable in consequently working

toward a solution, no matter what the actual outcome might be. When I worked with Dental health tray I thought that it was a bad project with no market. When I took GreenGlass I thought it was too expensive, but I didn't think about who it was too expensive for. Today I would probably think on how to make it available and how it would be priced to match the need. My inner process has become more fluent and I don't think about making too rash movements or predictions, but rather taking the necessary steps toward succeeding with the project/product/work I am currently doing.

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GREEN | GLASS

The Glasshouse Insulator



- Business Plan -

Blaz Mateljic - Jesenko Capra

May 2011



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1.Executive summary

Greenglass© is a company that will produce and distribute high insulating window panels for walls of glasshouses. The effect of these window panels is that they will decrease energy costs because their insulating ability is much greater than that of ordinary glass. The farmers will not need nearly as much energy as they need today to keep the glasshouse at desired temperature. We can calculate a saving coefficient of at least 10times compared to ordinary glass which will drastically cut down the costs and from the sustainability perspective the usage of fossil fuels can be abolished, since electricity and gas can be used as the primary heating source. Our primary market to start with is The Netherlands since it is the metropolis of glasshouse companies and from a marketing perspective very lucrative since we can become known in the industry much faster than anywhere else. The forecast for growth and expansion is taken account for in our value chain – The Netherlands, Sweden and rest of Europe are primary markets during the startup, later expansions will involve Northern America and other parts of the world -. The expansion is possible since our product can be applied in building new greenhouses and converting already existing glasshouses into glasshouses with our product. The positive attributes of the product and the constantly rising prices on energy the response has been very positive and we are carefully optimistic of the future potential.

After the second year in 2012 the cash-flow is expected to be 1,4 million Euros. The year after, in 2013 the cash-flow will be 5 million Euros and at the end of 2015 the cash-flow has increased to 15 million Euros.

The strategic plan for stabilization and expansion of the company is a four step process where we will target the beneficiary markets and try to maximize the efficiency concerning customers, delivery & supply chains. Since we can produce Greenglass© ourselves we will construct appealing business companionships in order to decrease our costs and make efficient processes concerning customer support, delivery, installation, product development and so on. The way to do so is by incorporating four steps that become the main pillars in our value chain. We will try to use our cross functional capabilities, broad functional capabilities, activity based capabilities and special capabilities to construct a efficient integrated system that will help us cut price on our product, and increase sense of quality by putting the customer first.

With Greenglass© we can contribute in making this world a cleaner place.

2.The business

2.1 Introduction:

Nowadays it is possible to eat tomato's and other vegetables during seasons that seemed to be unsuited for the growth of these products. This is made possible by the so called greenhouses, these houses protect crops from too much heat or cold, from storms and they keep out pests and other harmful crops-diseases. Thus: creating the ideal environment for the plants to grow. The idea of growing these plants in environmental controlled areas started during the Roman times and has developed itself during time and spread to northern countries like Holland and England. The greenhouses evolved technologically and the greenhouses as we know then nowadays are high tech environments where temperature and ideal climates for growth can be created. The Netherlands for instance has some of the largest greenhouses of the world and 0,25% of the country's total land is occupied by greenhouses.

Creating these ideal climates (i.e. circumstances) is a costly process where fossil fuels are burnt in order to keep the greenhouses at the desired temperature levels. Currently one-sided glass is used mostly in greenhouses and it is preferred above the better insulating double glass because the double glass is less light transparent. And transparency is crucial as transparency is directly linked to production – 1% less transparency equals 1% less production and visa versa - .Our product is as transparent as normal glass and insulates better than mineral wool, it is called:“Greenglass©” and it let's 85% of solar light through and 87% of solar energy, ordinary double sided glass is 75, respectively 81%. Our greenhouse glass not only gets more light through the material also insulates 7 times better than any other insulation material available. This technological breakthrough enables us to create non-fuel consuming glasshouses that don't produce CO2 but, but can consume industrial CO2-emissions.

2.2 The Idea:

The Greenglass© is an product that is transparent and one could say that it looks like ordinary glass. Other important characteristics are that it insulates better than mineral wool and is more heat resistant than aluminum. The idea is to create GreenGlass© to be the market leading glass component that is used in for the construction of glasshouses. The material itself can be vacuumed or coated, and because the material can be fabricated in a manner that it weighs only 4 times air which makes the product even safer than the safety glass that is currently used for constructing greenhouses. The material itself can also be used as stand alone panels that can manually, based on the weather conditions, type of corps or season be applied in the greenhouse which creates flexibility for the glasshouse companies to switch to different types of corps during different seasons. Because of the insulating capabilities of the material it also could allow extend the growing season enabling the greenhouse farmers to start sooner and have longer production season than greenhouse farmers who don't use our material. But the biggest value that GreenGlass© adds to the glasshouse farmers is that it reduces the energy consumption of the glasshouses to an level where there is almost no need for burning any kind of fossil fuel to keep the glasshouse at the desired temperature. Considering the fact that 30% of the costs of one kilogram tomato's is determine by the quantity of used energy, one could say that the production costs can also say that GreenGlass can cut production costs by 30%. GreenGlass© can moreover be applied to build glasshouses in countries like Sweden to cultivate tropical fruits in the category of banana's and kiwi's. This would create an complete new way of cultivating corps and could lead to a completely new industry in for instance Sweden.

2.3 History and ownership

Greenglass AB is going to be managed and controlled by the owners Jesenko Capra and Blaz Mateljic. The company will be a joint-venture with Airglass AB. The technology behind Greenglass finds his roots at Airglass AB. The product compounds are known to the market, but the mixture and the production-process is secret and will not be shared outside of the joint-venture. Production of the product will be licensed out to an external producer in the Netherlanders.

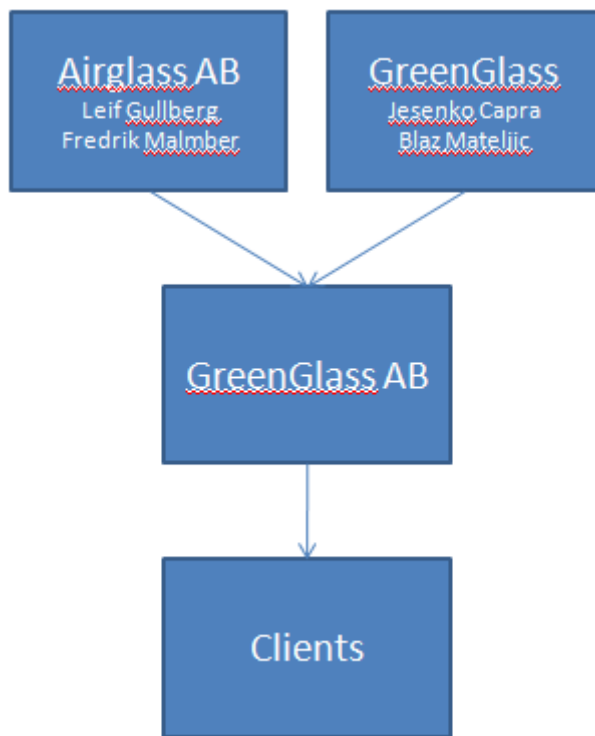


Figure 1: Company structure.

The management team of GreenGlass AB will be a very strong team as all necessary competences for the startup phase are presented. The team members from Airglass AB are: Leif Gullberg, Fredrik Malmberg, Jesenko Capra and Blaz Mateljić. The technological knowledge will come from the founder and owner of Airglass AB “Leif Gullberg” who is considered to be the leading researcher in the field of transparent silica-gels. Fredrik Malmberg has a background in civil engineering and business development which both are extremely useful. Jesenko has a background in business management and has an entrepreneurial drive and well developed communication skills. Blaz has a background in business consultancy, finance and marketing research which are very useful skills in the startup phase but also for the expansion plans and future growth.

Not all necessary skills are covered and external knowledge and expertise shall be needed after establishment of the joint-venture. Expertise with respect to the glasshouse market, production & logistics, Sales and administration are not yet fully covered and need to be added to Greenglass AB in the future.

Figure one gives an visual representation of the competences present or needed for GreenGlass AB.

		Competences									
		Entrepreneurship	Market Research Knowledge	Legal/ patent and licensing	business Network	Production and Logistics	Administration	product development	Sales	General management	Project managemet
Name:	Expertise										
Leif Gullberg	R&D	fully covered	fully covered	Needs attention	fully covered	Partly covered	fully covered	fully covered	fully covered	fully covered	fully covered
Fredrik Malmber	Business Consulting	fully covered	fully covered	Partly covered	fully covered	Needs attention	fully covered	Needs attention	Partly covered	fully covered	fully covered
Jesenko Capra	Business Development	fully covered	fully covered	Needs attention	fully covered	Partly covered	fully covered	Needs attention	Partly covered	fully covered	fully covered
Blaz Mateljic	Business Development	fully covered	fully covered	Needs attention	fully covered	Partly covered	fully covered	Needs attention	Partly covered	fully covered	fully covered
Future Employment :											
fte Netherlands	Sales						fully covered		fully covered		fully covered
fte Sweden	Sales						fully covered		fully covered		fully covered
fte Europe	Sales						fully covered		fully covered		fully covered
Fte Netherlands	Logistics						fully covered		fully covered		fully covered

Figure 2: competences at Greenglass AB

GreenGlass shall be registered in Sweden and it's main office will also be located in Sweden during the first two years. The reason for keeping the headoffice in Sweden is because the technical and knowledge is provided from the R&D department of Airglass AB. During the launch of the company this is R&D is going to be crucial as the product has to be piloted and monitored in an glasshouse. After this stage there is an possibility to reallocate in the headoffice in The Netherlands due to tax regulation which are, according to the Dutch Chamber of commerce, beneficial for an SME like GreenGlass AB.

2.4 The Greenglass Product

GreenGlass© is a result of research and development, the product is a breakthrough innovation when it comes to insulation characteristics combined with the light transparency characteristics. GreenGlass© is an Aerogel application and consists out of 98% air, it has a solid but porous structure which is determined by the silica. When the first generation of aerogels had where introduced to mass media they were foggy and the product got also known as “blue smoke, solid smoke, blue smoke or frozen smoke”. These nicknames were given to the product because it looked and was as light as trapped bluish smoke. The reason why we called the product GreenGlass© is because intensive research and development in the last decade has improved the product to such an extent that it is as transparent as Glass but still has its unique insulating capabilities – the product can now be applied in glasshouses and save enormous amounts of energy and significantly decrease the corresponding carbon dioxide emission and in some cases the glasshouse can even become a carbon dioxide consumer.

2.4.1 Product protection

The uniqueness of this product can be derived from the mix that has made the product transparent. Aerogels themselves are not patentable, but the formula that is used to produce GreenGlass© is unique and superior to the mix of all other aerogels on the market. The formula is a company secret and this secret can also be seen as a patent because the time that it would take for a competitor to develop a similar formula would take high R&D efforts and approximately 5 years of research. Nevertheless there is a patent pending on certain parts of the mixture.

2.4.2 Production process

The production process is characterized where a unique silica mix goes through the following three stages:

- 1) The liquid silica together with alcohol is poured into molds that determine the shape of the product it is going to have at the end of the process.
- 2) The second process is the drying process.
- 3) The third and last process is where the last spores of water and alcohol are removed.

After this process the final product arises and consists, as mentioned before, of air and silica.

2.4.3 The product

Figure three gives an visual representation of Greenglass© within an Glasshouse. GreenGlass© lets sunlight through in a same manner as light get through normal glass (92% of the beams gets through), whereby the UV-beams that are responsible for warming up the greenhouse also get through. The heat or cold from the outside atmosphere (air temperature) is blocked from going through the Greenglass© and stays outside. This also implies that the heat that is generated from the sunlight and UV-beams that go through the Greenglass© are trapped and stay inside. Furthermore the product is moist-proof, fireproof and doesn't melt or catch fire which makes it an safe product and copes with the safety regulations of glasshouses. In case of an fire the product would shrink when a temperature of 750C is reached, which is an very unlikely scenario in a glasshouse to happen

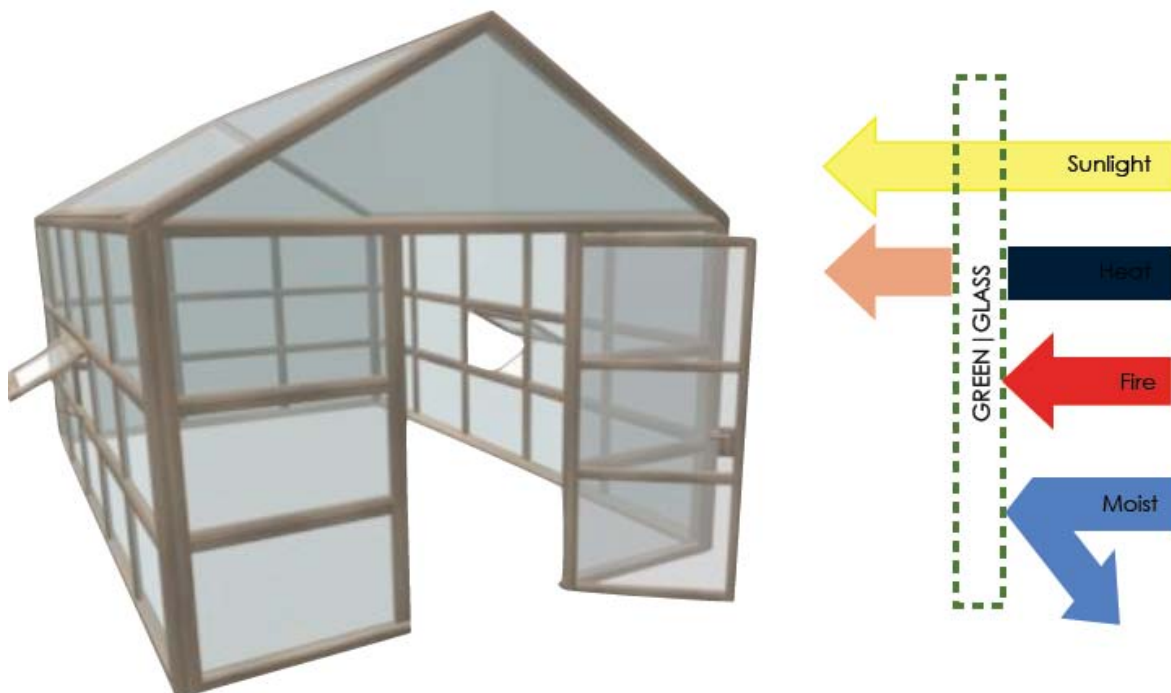


Figure 3: GreenGlass visual image

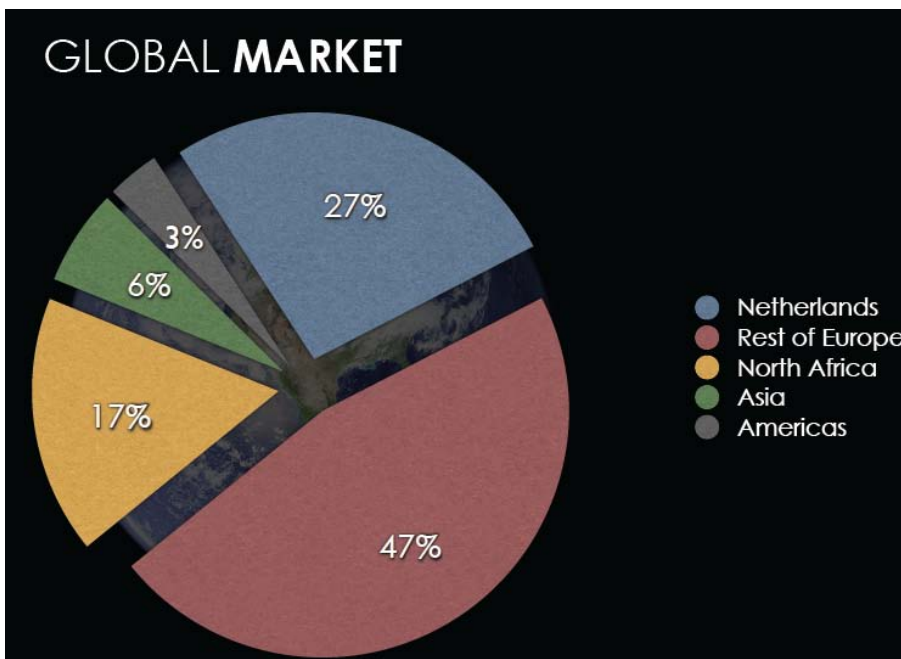
Once Greenglass© is installed in the glasshouse it can replace the “other materials” that are used currently in the glasshouses. Another major environmental benefit of Greenglass© is that it reduces the energy need and oil consumption of the glasshouses which is going to reduce the CO2 emissions coming for the Glasshouses. New trends in the Glasshouse industry are closed systems where the temperature, airflow and carbon dioxide are optimized and computer controlled. The carbon dioxide that used to be an residual has become an

useful additive to stimulate and optimize the photosynthesis (i.e. the growth) is of the crops and is pumped back in to the glasshouse. With Greenglass© the glasshouse doesn't need to produce and extinct carbon dioxide for heating the glasshouse, but would need the carbon dioxide to stimulate the growth of the crops, thus the Glasshouse is now an carbon dioxide consumer. This is possible as CO2 emission rights are becoming more scares because the EU union is going to decrease the amount of rights every year. Greenglass© offers industries that produce CO2 as an waste product the possibility to do something environmental friendly and recycle the CO2 in glasshouses that are made out of Greenglass©. By doing so the industry benefits, the glasshouse farmer benefits as his crops grows faster and the environment benefits as the CO2 doesn't go out in our atmosphere but is absorbed in the crops growing in the glasshouse.

3. The market

3.1 market size

The market potential for this GreenGlass© is impressive. The amount of Glasshouses in Europe consists of 27.122 ha (i.e. 271.220.000m2) wherefrom 10.500 ha is located in the Netherlands, making it the biggest Glasshouse market in Europe (Costa et all. 2004). Other important markets are the north of Africa and the Americas as show in figure 4. The potential market is big, especially because the GreenGlass© can easily be applied in the already existing glasshouse. Considering the fact that 29% of the operational costs of these



glasshouses is determined by energy consumption for heating we can state that the whole glasshouse market would be interested in this product (Woerden and Bakker, 2000). This means that the potential market is the whole glasshouse market.

Figure 4: market size

3.2 Carbon dioxide and Greenglass©

The “European Union Emissions Trading Scheme” (EU ETS) which is also known as the European Union Emissions Trading System, is the largest multi-national emissions trading scheme in the world. It was launched in 2005 and is a major pillar of EU climate policy. This systems goal is to reduce CO₂ emissions by 20% by 2020. The rights are gradually being pulled out of the system, this system creates scarcity on the market and is going to make the rights more expensive in the near future. This situation is threatening the northern, and especially, the Dutch greenhouse market as production costs increase significantly compared to the competitors in southern regions of Europe which can give the greenhouse entrepreneurs the incentive to move their production out of the Netherlands. As an result the Dutch and other North European governments have created subsidies and tax discounts for companies that are investing in technologies that decrease their carbon dioxide emission (Bunte & Dijkshoorn, 2009). These developments are interesting as they force the Glasshouse companies to invest in new technologies. If they don't and the CO₂ emission rights rise to 25euro/ton (which is expected in Bunte and Dijkhoors's research) 6.000 jobs shall disappear and the annual production shall depreciate approximately 220 million euro's a year. Incentives for glasshouse companies to switch and implement/ invest in environmental friendly products like Greenglass© are increasing. The benefits for the Glasshouse companies to implement Greenglass© in their companies are as following:

- 1) Lower their energy consumption,
- 2) Cut CO₂ emission (i.e. save on buying emission rights)
- 3) Generate extra income from the by using industrial CO₂ emission.
- 4) Get subsidized by the government and be a green company.

3.3 SWOT

Greenglass© main competitive advantage is that the product is a technological breakthrough and can change the way that crops are cultivated in glasshouses. The main weakness is that there is a large demand for the product now, but the full scale production facility is yet to be built. Other strengths and weaknesses are described in a SWOT analysis for Greenglass©.

	Internal
Strength	<ul style="list-style-type: none"> Having specialized product and production knowledge Clean or Green technology, 100% recapture of CO2 and alcohol Secret production formula Patent and patent pending on technology
Weakness	<ul style="list-style-type: none"> Lack of capital for large production Need of investment for procuring process equipment No large scale / real life testing has been done so far Not sales force active
	External
Opportunity	<ul style="list-style-type: none"> There is a vast and fast expanding market International need for the product Greenglass makes it possible to consume industry CO2 waste Possibilities to cooperate with other branches
Threats	<ul style="list-style-type: none"> Competitors enter the same market with similar product Increase in component prices Contractual and legislative aspects on international markets Resistance from the glasshouse "glass" manufacturers

Figure 5 : SWOT analysis

3.2 Confrontation matrix

This matrix is used to see the interaction between the internal and external processes, and to establish a future direction of the company. We have two options in this case. Those options are based on our future strategy for the company. We can choose between market-driven or resource-driven.

	Opportunities	Threats
Strengths	Offensive strategy	Adjustment
	<ul style="list-style-type: none"> - Penetrate new market segment with our product quality. 	<ul style="list-style-type: none"> - Realign our strengths and further develop them. - Actively work on adapting the legislative aspects to our product.
Weaknesses	Defensive strategy	Survival strategy
	<ul style="list-style-type: none"> - Closely monitor competition. - Adapt the product. 	<ul style="list-style-type: none"> - Try to turn the negative tide, by actively developing, quality, customer service. - Benchmark.

Figure 6: conformation matrix

We will aim to penetrate the market via a market-driven strategy. We know that fossil fuels are becoming expensive, and that the legislation is moving towards a decrease in carbon dioxide emission by heavily taxing those businesses that have carbon emissions. The legislation changes has forced the market of energy saving into a new mode, and we can clearly see that this is beneficiary for us and our product.

3.3 Competitor analysis:

In the greenhouse market we have two different kinds of competitors, the first one comes directly from other aerogel producing companies and the second group of competitors are manufacturers of products that currently used in greenhouses.

The other companies that produce products that are based on silica Aerogels are Aspen Aerogels who produce insulation materials that are opaque and Cabot Corp who produces materials that are translucent but not transparent. Both of these companies form no real threat as their materials aren't transparent and therefore not suitable for the greenhouse market.

3.3.1 other glasshouse materials

In the glasshouse industry there are different types of materials that are used as base material for the greenhouse itself. The material that is used in the greenhouse depends on the crops that the company wants to grow and is to some extent limited because growing banana's or other tropical fruits in greenhouses in for instance Sweden or the Netherlands would be an energy consuming process that would make the final products more expensive than the imported ones.

Current materials that are used for the growth of different types of non- tropical corps in Northern Europe are:

<u>Type of glass:</u>	<u>Application:</u>	<u>Cost per m2:</u>
Diffused Glass	Flowers like roses	100 SEK
Anti-reflection Glass	Intense light needing corps	200 SEK
White Glass	Strawberries, summer plants, egg-plants etc.	100 SEK
Polycarbonate (PC)	Plants with high energy consumption and low light need. Orchids	320 SEK
PMMA (acryl)	Outside plants with high energy consumption	250 SEK
Polyethylene (PE)	Cold growth of trees	15 SEK
ETFE	Strawberries & cut flowers	120 SEK
<i><u>Greenglass</u></i>	<i><u>Tropical fruits, all other crops.</u></i>	<i><u>500 SEK</u></i>

Figure 6:Glasshouse materials

Greenglass© has a cost of approximately 500 SEK m² if produced in large quantities, which makes it more expensive than already existing products on the glasshouse market. As the characteristics of these glasses aren't comparable with our product, their application and target market is completely different. Therefore we can state that there is no competition on this market. From an environmental point of view Greenglass© is superior to all other products as those products are applied in the existing greenhouses, but due to the carbon dioxide regulations and rising fossil fuel prices the glasshouse entrepreneurs need to change their production process in order to stay competitive.

4. Strategy

4.1 strategic plan

Figure three shows the planning of the company. The first two phases are necessary to plan the production and to pilot the product on a full scale glasshouse. At the end of the second phase the product is ready to enter the market. As the demand for Greenglass© is expected to be high we expect to get 8% (84.000m²) marketshare during the first year in the Dutch

glasshouse industry. After the first year we have established a certain brandawareness and therefore expect equal sales of 84.000m² for the first four years on the Dutch market.

Estimations with respect to the European market are that the product is gradually going to penetrate the UK, French and Scandinavian Glasshouse market from Greenglass will reach an market of 1.4 million in 2012 and will grow to an marketcapitalization of 15.0000 in 2013.

These estimations have are based on an interview with prof. Gerrit Baars from Wageningen Agricultural University in the Netherlands. The four different phases are described underneath and shown in the strategic plan (figure 7)

- Phase one: Here the focus will rely on fundraising and the formation and registration of the company. With the researchers at Airglass AB the product needs to be designed in more detail.
- Phase two: The focus is to start producing the product in order to build pilot the Greenglass in an full scale glasshouse to evaluate and, if necessary, make adjustments to the final product and production process.
- Phase three: Focus lies on the producing and making the production and logistics process as efficient as possible and creating marketing the Dutch market aware of our product. The aim is to establish market awareness.

- Phase four: The focus in this phase is to expand the sales to other other European countries and to expand the production in the Netherlands. Aims after this phase are to stabilize the market share and grow further in the Dutch, but also in other European markets.

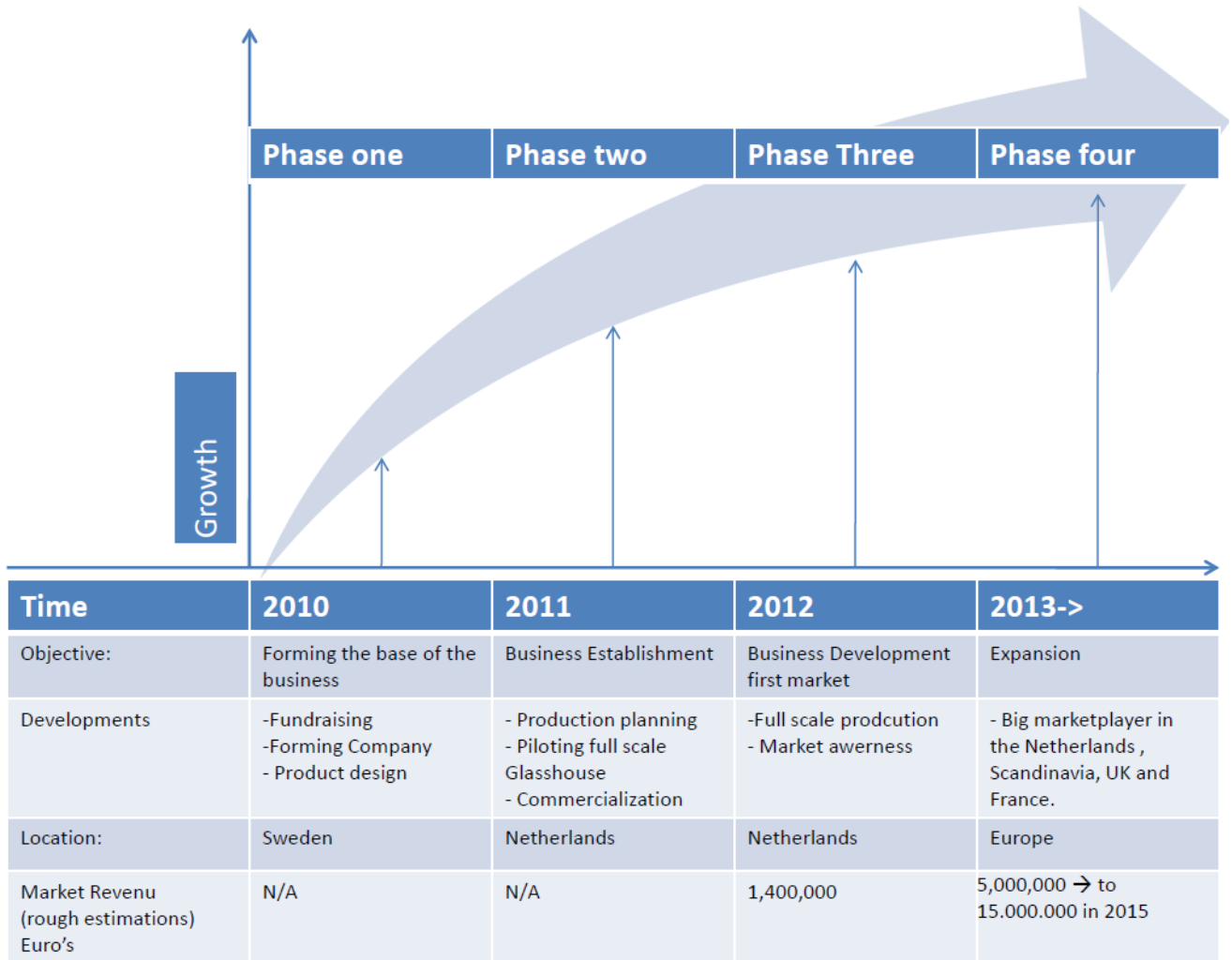


Figure 8: Strategic plan

4.2 Organization

Research and Development

R&D and sales are the key success factors underlying the success of our business. Key to the R&D activities is the patented technology that allows the Greenglass© to be as transparent as ordinary glass. The further development of the glass will be done in-house at the pilot station in Staffansdorp by Airglass AB. Furthermore the design, thickness and optimal size will be determined at the R&D department.

Production

The production of Greenglass© will take place in the Netherlands and is license based. Purpose of the licensing agreement is that the ingredients and recipe stay and remain confidential.

Transportation:

Within the Netherlands the Greenglass© is going to be transported from the production plant directly to the clients. During the third phase, as described in figure 4, the production shall reach certain levels that the Greenglass© shall be stored in a warehouse first before it will be shipped to the clients.

5. Marketing Strategy

5.1 Reasoning

Greenglass© is a high involvement product with a narrow customer base. Because the product doesn't explain itself, direct interaction with the client is key to our business success. Our major marketing instrument is a direct marketing approach, supplemented with a highly informative website. Next to this we are going to be present at greenhouse exhibitions through Europe.

The marketing and sales for Greenglass© will be done in several phases; first market and brand knowledge is going to be build up – mainly through presents at exhibitions and the website; second, the direct sales and follow-up approach is used, adjusted for local market peculiarities.

First, the market analysis and initial research serve to identify potential target markets. This research is aimed at acquiring all relevant information to ensure a successful product launch in the desired market.

5.2 Direct sales approach

A skilled salesman who is also well-versed in the technical details of Greenglass© will be dedicated to all sales projects. Initial contact is to be made by telephone. The Glasshouse entrepreneur or representative who is able to make purchasing decisions is guided through a detailed questionnaire which is linked to an simple program that calculates the savings and return on investment which shall lead to the insight that Greenglass© has an cost-saving advantage for the glasshouse. After the contact has been established and the questionnaire filled, the client shall be invited to Sweden to visit the Pilot Greenhouse with Greenglass©.

During this visit eventual misconceptions can be solved and further questions can be answered by the Researchers en Developers. Because not all the glasshouses are similar the client shall receive a package that includes pictures and technical details of the pilot greenhouse for comparison reasons. Two elements, to be agreed upon ex-ante to the demonstration, ensure commitment, align expectations and increase the likelihood of a positive outcome.

1.) Preclosure: The sales person will discuss the expectations that the client has towards Greenglass©. Commitment has to be made that the Glasshouse company is willing to buy our product if those expectations are met.

2.) The client contact arranges for all the relevant decision makers (head of maintenance, the person in charge of procurement and budget) to be present at during the pilot visit. The best way to convince them of the superiority of our product is to show them that in real life that the product does what we promise it will do. Furthermore we will have enough time and our whole team present to answer all the questions and dissolve any misconceptions or misunderstandings, which will speed up the purchasing process.

The presentation at the pilot Glasshouse will be done by the Sales person and supported by our Researcher. Albeit expensive, we expect that this approach will lead to most sales and very close contact with our customers. Furthermore it is the best way to receive feedback and get market knowledge from our clients' needs and demands. The Research and developers shall also have a guaranteed information flow to feed continuous product development and improvement.

The marketing and distribution system is kept as lean and mean as possible in order to make expensive international subsidiaries abundant. Production takes place in the main target market – The Netherlands – and production, depending on the quantity ordered, takes about six weeks. Ideally the down-payments will be made at the time the contract is signed, although this could be negotiable and discounts can be given during the startup phase.

For our expansion markets we follow a similar procedure. Native speaking sales affiliates are hired for non-English speaking markets outside of Europe to effectively cope with possible cultural and linguistic differences. Those in-country representatives will be trained at our

main facility. Compensation is solely commission based to optimize the incentive and to avoid unnecessary costs. Most likely this will not be a full-time job, so an option would be to contract consulting companies that are involved in the Glasshouse construction business and thus know the market well.

5.4 pricing

As mentioned in the competitor analysis, there is no real competition in this market as all other products are abundant. Greenglass© is unique and the only product and is able to cut an tomato growers production costs by 30% if the whole glasshouse is equipped with Greenglass. We therefore expect that the marketdemand for this product will be high and an Pull-strategy is the appropriate strategy to be pursued.

The total costs for the production of Greenglass are estimated at 500SEK/m² and it has an life-expectancy of 20 years, which is equal to the life expectancy of an Glasshouse. The price shall initially be set at 1000 SEK/m², which equals an profit margin of 100%. This price will be kept stable and the profit margin shall gradually increase during time as an result of higher production which is associated with lower production costs (economies of scale), furthermore we expect the production process to become more efficient over time. This price of 1000 SEK/m² can also be justified if we look at the potential savings which are: - 85% of the annual energy costs – if the whole glasshouse is equipped with Greenglass©.

6. Profitability and financing:

Based on the intended development phases we have estimated our expenditures and income for the first 5 years. Our expectations are to finance our activities by funding 40.000 euro's by own capital, 300.000 in venture capital and an bankloan of 200.000 to finance the first 2 years and to have an buffer for the case that more financial resources are going to be needed during the piloting and production-planning stage.

Cash flow statement and the projected balance sheet are based upon those estimations. The Cashflow statement is shown underneath, and the Balance sheet is visible in appendix 2.

Sales estimations are made upon the amount of glasshouses that are going to be renewed, restructured or newly build. Combining that information with expert interviews with Gerrit Baars and Teknopoll consultants we estimated the sales to be 100.000 m² a year, with total

costs of 50 euro m2 and margin of 50 euro m2 – means that gross annual profit is estimated at $100.000 * 50 = 5.000.000$ euro before tax at the end of 2012. (tax accounts for 26,2%).
More detailed financial information can be found in appendix one and three.

Cash flow statement projected

	2010			2011					2012					2013	2014	2015
	Q3	Q4	Year end	Q1	Q2	Q3	Q4	Year end	Q1	Q2	Q3	Q4	Year end	Year end	Year end	Year end
Net Income	-58,309	-36,809	-95,117	-36,809	-36,809	-36,809	-36,809	-147,234	1,438,246	1,438,246	1,438,246	1,438,246	5,752,982	7,505,961	10,462,903	10,698,449
Depreciation	333	333	667	333	333	333	333	1,333	333	333	333	333	1,333	6,000	10,667	10,667
Capital expenditures	-4,000		-4,000											-32,000		
Free cash Flow	-61,975	-36,475	-98,451	-36,475	-36,475	-36,475	-36,475	-145,901	1,438,579	1,438,579	1,438,579	1,438,579	5,754,315	7,479,961	10,473,570	10,709,115
<i>Financing activities</i>																
- Founders capital	20,000		20,000													
- First stage	500,000		500,000													
- Second stage																
Net Cash Flow	458,025	-36,475	421,550	-36,475	-36,475	-36,475	-36,475	-145,901	1,438,579	1,438,579	1,438,579	1,438,579	5,754,315	7,479,961	10,473,570	10,709,115
Beginning cash flow	0	458,025	0	421,550	385,074	348,599	312,124	421,550	275,649	1,714,227	3,152,806	4,591,385	275,649	6,029,964	13,509,925	23,983,495
Ending cash flow	458,025	421,550	421,550	385,074	348,599	312,124	275,649	275,649	1,714,227	3,152,806	4,591,385	6,029,964	6,029,964	13,509,925	23,983,495	34,692,611

Figure 9: Cash flow statement

7. Risk analysis

We have identified potential risks for the company that will need to be addressed if they occur. The risk analysis scheme is a result of the risks that we may face later on, and extracted through the financial, and business records in the plan. Those areas are; Financial risks, environmental risks, legal risks, technological risks and customer risks. The scheme is divided into the level of impact and likelihood. The grading is 1-3 where 1 is low and 3 is high. The risk analysis demonstrates likelihood and impact of certain areas and how we will act if they occur. The worst case scenario is that new technology enters the market and we face severe problems. The second biggest risk is that we commit errors in abroad contract signings. This will be addressed as well by competent lawyers in that specific country. One of the main problems at for-hand could be ensuring the value of the transaction, if a delay occurs and the value of he currency happens we would be secure in our investment. The best case scenario is that GreenGlass© enters the market and has a growth rate sufficient for expansion of markets.

Impact

Risk Distribution

Significant	(C6) (E1)	(L1)		(T1)
Medium	(C3)		(C4) (C1)	(L2) (C5)
Minor	(F1) (T2)	(L3)	(C2) (F2)	
	Low		Medium	High

Risk	Likelihood			Action taken
	I	L	I*L	
Radical increase of material costs	1	1	1	Will mean switching material or adapting prices.
Insurances	1	2	2	We have to have insurances since it is a necessity for a wellbeing company
Force majeure	3	1	3	If there is a earthquake and our material cant be delivered on time, we need to have a small stock as a back-up
Liabilities in the firm	3	1	3	Make sure that we keep the important aspects secret and that we treat personnel with care so that we can be a healthy organization
Contracts abroad	2	3	6	Make sure to lawyer-up since different countries have different law-structures
Patents and trademarks	1	1	1	We have to continue trademarking and patenting new inventions
New technology is penetrating the market	3	3	9	This is a big risk, and we have to be aware of this, by evolving on the customer service sector and start a renewal circle
The transparency is not enough	1	1	1	We have to develop Greenglass, but while the development is undergoing, direct the customers with the value they need
The price is too high/low	2	2	4	Adapt to market pricing in order to have a fair chance of reinvesting and developing the company
The demand is too high	1	2	2	We have to increase the production, which is a not to complicated procedure.
The customers are unsure of the product qualities	2	1	2	We will have an adding-value campaign for anyone that might find this product interesting, and through that create a snowball effect.
The demand is insufficient	2	2	4	Work hard, on getting close to potential clients, and inform of different benefits, and potential

				subsidies from EU
Customer service is good/not good	2	3	6	This is also an important point and we will be working hard to keep the customers satisfied, and updated.
Nobody wants to use Green glass	3	3	9	In the beginning, this is the likely scenario. We have to be wary and make the best of the first customers, collect data and apply on the marketing strategy

Figure 10: risk distribution

Conclusion

As can be derived from our financial and thorough market research, GreenGlass© AB is a well thought-out business venture worth supporting its own right. The integrity, quality, motivation and innovativeness of the management team will have a major impact on its success. We are convinced that the relatively small initial investment in combination with an attractive first mover or even monopoly position, high expected returns, relatively low risks and a world-wide market expansion potential, will make GreenGlass© AB a true gemstone in every venture capitalists portfolio. We therefore foresee a bright and clean GreenGlass© future.

Appendix -1-

Balance sheet projected							
	Year end						
	2007	2008	2009	2010	2011	2012	
	Year end	Year end	Year end	Year end	Year end	Year end	Year end
<i>Total current assets</i>							
- Cash & Cash Equivalents	421,550	275,649	6,029,964	13,509,925	23,983,495	34,692,611	
- Inventory (end product)	0	0	0	0	0	0	
- Inventory (component)	0	0	0	0	0	0	
<i>Total non-current assets</i>							
- Plant, Property & Equipment	4,000	4,000	4,000	32,000	32,000	32,000	
- Depreciation	-667	-2,000	-3,333	-5,333	-16,000	-26,667	
Total Assets	424,883	277,649	6,030,631	13,536,592	23,999,495	34,697,944	
Total liabilities	0	0	0	0	0	0	
<i>Equity</i>							
- Founders Capital	20,000	20,000	20,000	20,000	20,000	20,000	
- Shareholder Capital	500,000	500,000	500,000	500,000	500,000	500,000	
- Retained Earnings	-95,117	-242,352	5,510,631	13,016,592	23,479,495	34,177,944	
Total liabilities & Common Equity	424,883	277,649	6,030,631	13,536,592	23,999,495	34,697,944	

Location	Area (ha)		
	Greenhouses and large tunnels (plastic)	Small tunnels (plastic)	Glasshouses
<i>Europe</i>			
Italy	61,900	19,000	5,800
Spain	46,852	17,000	4,600
France	9,200	20,000	2,300
The Netherlands	400	-	10,500
UK	2,500	1,400	1,860
Greece	3,000	4,500	2,000
Portugal	1,177	450	-
Ex-Yugoslavia	5,040	-	-
Poland	2,031	-	1,662
Hungary	6,500	2,500	200
Total	160,000	90,000	-
<i>Africa and Middle East</i>			
Egypt	20,120	17,600	-
Turkey	17,510	26,780	4,682
Morocco	10,000	1,500	500
Israel	5,200	15,000	1,500
Total	55,000	112,000	-
<i>Asia</i>			
China	380,000	600,000	-
South Korea	43,900	-	-
Japan	51,042	53,600	2,476
Total	450,000	653,600	-
<i>Americas</i>			
USA	9,250	15,000	1,000
Canada	600	-	350
Colombia	4,500	-	-
Mexico	2,023	4,200	-
Equator	2,700	-	-
Total	22,350	30,000	-
WORLD TOTAL	687,350	885,600	-

Appendix 2:
market
estimations.

appendix -3-: Profit and loss statement

Profit & Loss statement projected	2010				2011				2012				2013		2014		2015	
	Q3	Q4	Year end	Q1	Q2	Q3	Q4	Year end	Q1	Q2	Q3	Q4	Year end	Year end	Year end	Year end	Year end	
Revenue																		
Contracts outstanding	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Downpayment	0	0	0	0	0	0	0	0	2,500,000	2,500,000	2,500,000	2,500,000	10,000,000	13,000,000	18,000,000	18,400,000	18,400,000	
Lease	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total sales revenue	0	0	0	0	0	0	0	0	2,500,000	2,500,000	2,500,000	2,500,000	10,000,000	13,000,000	18,000,000	18,400,000	18,400,000	
Gross Profit	0	0	0	0	0	0	0	0	2,500,000	2,500,000	2,500,000	2,500,000	10,000,000	13,000,000	18,000,000	18,400,000	18,400,000	
Marketing & Sales	34,250	12,750	47,000	12,750	12,750	12,750	12,750	51,000	25,250	25,250	25,250	25,250	101,000	122,000	101,000	101,000	101,500	
Research & Developm	11,000	11,000	22,001	11,000	11,000	11,000	11,000	44,001	11,000	11,000	11,000	11,000	44,001	44,001	44,001	44,001	44,001	
Office & IT	4,500	4,500	9,000	4,500	4,500	4,500	4,500	18,000	4,500	4,500	4,500	4,500	18,000	18,000	18,000	18,000	18,000	
Administration & Accou	725	725	1,450	725	725	725	725	2,900	725	725	725	725	2,900	2,900	2,900	2,900	2,900	
Management	7,500	7,500	15,000	7,500	7,500	7,500	7,500	30,000	506,705	506,705	506,705	506,705	2,026,820	2,622,620	3,626,820	3,706,720	3,706,720	
Operating Profit (EB)	-57,975	-36,475	-94,451	-36,475	-36,475	-36,475	-36,475	-145,901	1,951,820	1,951,820	1,951,820	1,951,820	7,807,279	10,190,479	14,207,279	14,526,879	14,526,879	
Net Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation	-333	-333	-667	-333	-333	-333	-333	-1,333	-333	-333	-333	-333	-1,333	-6,000	-10,667	-10,667	-10,667	
Earnings before Tax	-58,309	-36,809	-95,117	-36,809	-36,809	-36,809	-36,809	-147,234	1,951,486	1,951,486	1,951,486	1,951,486	7,805,946	10,184,479	14,196,613	14,516,213	14,516,213	
Tax Payable (13.5%)	0	0	0	0	0	0	0	0	513,241	513,241	513,241	513,241	2,052,964	2,678,518	3,733,709	3,817,764	3,817,764	
Net Income	-58,309	-36,809	-95,117	-36,809	-36,809	-36,809	-36,809	-147,234	1,438,246	1,438,246	1,438,246	1,438,246	5,752,982	7,505,961	10,462,903	10,698,449	10,698,449	

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