

Inter-University Team Collaboration to Design and Market a New Product

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Abstract

This paper presents a joint effort between engineering students from East Tennessee State University and business students from Loyola Marymount University to design and market a sophisticated global monitoring system to monitor location of children, Alzheimer patients and other valuable items. This project was funded by grant from NCIIA and was part of a two-capstone courses developed to introduce engineering students and business students to real world problems and entrepreneurship. This invention has received extensive media coverage since its development. Over 30 million people worldwide heard about the project and its abilities through various media channels such as TV, Internet, radio, and newspapers. This paper focuses on marketing aspect of the product, which includes writing a successful business plan.

Introduction

In the real world, global out-sourcing is causing industrial products to be developed in virtual teams to reduce costs and development times¹. These needs have created the opportunity for this proposed project. Here product teams must design, manufacture, and market new products where the team members are not co-located in the same place at the same time². It is important to introduce this into the classroom, because virtual interactions are becoming increasingly important as separated teams jointly develop and market products.

In this project, teams from Loyola Marymount University (LMU) collaborated with teams from East Tennessee State University (ETSU) on joint projects. The ipTeamSuite software was used for data exchange, information sharing, messaging, group scheduling and design documentation³.

This paper focuses on one special project to design and market a sophisticated global monitoring system to monitor location of children, Alzheimer patients and other valuable items. This project was funded by a grant from the Lemelson Foundation⁴. The purpose of this paper is to write a successful business plan to be presented to venture capital firms to secure seed money to mass produce and market the product. In next sections the business plan is presented.

Executive Summary

Focus Systems was formed as a design and manufacturing company specializing in high technology electronic safety devices. Its management is dedicated to supplying the consumer

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with top quality products to meet the need of an ever-growing concern for the safety of our children. This business plan has been developed to present Focus Systems to potential investors and to assist in raising the necessary \$1,000,000.00 dollars of capital for initial production launch of our “Guardian 2000”. This capital will also be used to finance our product development and marketing efforts. It is the intent of Focus Systems, that in 3 years the return on investment will be such as to completely relinquish itself of the debt of this initial investment.

Mission

It is Focus Systems mission to be a profitable world class manufacture of electronic protection devices. We are a company based on the promise of offering only high quality safety products that can be relied upon to protect our children or other items that we have placed considerable value upon. It is our intent to maintain a high level of integrity and professionalism in our business endeavors and personal relations. Through our commitments we hope to establish a partnership with our consumers and offer them products with cutting edge technology and high levels of customer satisfaction.

Focus Systems Product Line

Our current product line consist of three models of the “Guardian 2000”. The Guardian is an electronic proximity device that will be used to monitor the location of children or other valuable items. The need for a method of keeping our loved ones safe has increased in the last few years. Industry has made great strides in auto and home safety, but we have not really addressed the need to protect the individual who requires the consistent attention of another person.

Child abduction is a major problem at this time and the number being abducted is growing each year. In fact, as many as 150,000 children are reported missing in the United States alone each year. Many of the abductions occur under circumstances wherein the child is in the company of a parent, such as at a shopping mall, but the parent is preoccupied with shopping, and the child is abducted.

The Guardian will give a parent the means of safely guarding their children. The Guardian consists of two items; a transmitter that will remain with the child and a receiver that the parent will use to monitor the position of the child. If the child wanders from the parent, past a predetermined distance, an alarm will sound. This will alert the parent of potential danger. This is the basic concept of the product; more details of operations and features will be addressed later.

Market Potential

The current customer market demand is growing very rapidly. With the increasing potential of child abduction individuals are looking for a product to allow them a feeling of security in a

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world filled with chaos and crime. Because of the current need for a product like the Guardian 2000, it has received extensive media coverage since it's development. Over 30 million people have heard about the product and it's abilities through various media channels such as TV, Internet, newspapers, and radio.

Just recently (April 2000), the nationally known network, ABC, expressed strong interest in the abilities of the Guardian. An animated video showing the function and capabilities of the Guardian has been made and will be aired on ABC's production of 20/20 sometime early in 2001. According to John Stossel, if the product is available at that time we should receive thousands of orders. ABC will also preview the Guardian on their world news when it is ready to market. This coverage from ABC will save us hundreds of thousands of dollars in advertising.

We have already received much response from individuals and retailers who are interested in purchasing the Guardian as soon as it is in production. We currently have potential orders for 65,000 units to be sold to distributors and 20,000 to be sold to individuals.

The primary market for this product will be child protection, but we see a huge secondary market addressing the monitoring of other individuals needing constant supervision. This would include the hospitals, elderly community, individuals with Alzheimer's Disease, and mentally or physically handicapped individuals. Over 14 million American adults care for a loved one with Alzheimer disease in their home. Over 1% of the population has some type of mental retardation and requires attention. When you look at the huge number of people that require the constant supervision of another individual you can quickly get an idea of the large potential of a secondary market.

The secondary market can also be broken down in areas of monitoring other items of personal value. This could include things such as luggage while traveling, expensive electronic devices like laptop computers, sporting equipment, or even your pets. The potential sales from the primary and large secondary markets in 1999 were estimated to be over 60 million units. This number represents an increase of 20% from 1998.

Operations Plan

As a result of market research we have determined that to be successful we will need to keep the cost of the standard unit under \$100.00. This will require very lean manufacturing management and processes. A cornerstone of this plan is a very nimble manufacturing operation to keep capital requirements at a minimum. The nimbleness enables the company to be profitable at a very low production level and yet the manufacturing operation can move rapidly to meet dramatic increases in demand.

To keep major expenses to a minimum during the first three years, we have determined it will be necessary to outsource all major components including the printed circuit boards. We will only perform final assembly and packing.

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Management Team

Our management team consist of three men and one woman whose background consist of 15 years of marketing with Focus Enterprises and 15 years of corporate development with Focus Systems Enterprises.

Our management team also includes 4 men and 1 woman with over 10 years of engineering and design within the technology industry, a chief financial officer with 20 years of accounting, administrative, merger and acquisition, and banking experience with Focus Enterprises.

Marketplace Analysis

To determine the success of the Guardian, we looked closely at the environment and society into which we will introduce our product. If we first look at a world with a rising crime rate, we will get a clear view of the potential success our product could have. We live in a world full of petty theft, where it is not safe to leave any item unprotected, regardless of its value. Also parents are faced each day with the threat of a child becoming lost or being abducted. By introducing the Guardian as a simple solution to petty theft, we feel we can help today's individual commute, travel, and enjoy sporting activities or normal daily habits without realizing the loss of personal valuables. We also feel the desperate attempts to gain a safer environment for children and parents will create a substantial market for the Guardian.

As we look at people's lifestyles today we can see a definite trend. We can see people in their modern professions spending much more time traveling. Due to the nature of their professions, people involved in business must travel with many more valuables than they ever have before. As the electronic industry continues manufacturing more complicated devices in much smaller sizes it creates a potential environment for petty theft. We feel this situation will only increase the need for a product such as the Guardian.

As the Electronic Industry continues to make major advancements in technology, we feel it will have a positive effect on the marketing of our product. People are more interested and more dependent on electronic products such as cell phones, computers, or GPS locator devices. This interest in electronic products could increase our sales of the Guardian.

Capital Requirements

According to the opportunities and requirements for Focus Systems described in this business plan, and based on what we feel are sound business assumptions, our initial Phase I and Phase II capital requirements are \$1,000,000.00 and another \$500,000.00 for the late stages.

To accomplish this goal we have developed a comprehensive plan to intensify and accelerate our

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marketing and sales activities, product development, service expansion, engineering, distribution, and customer service. To implement our plans we require a loan or investment totaling \$1,000,000.00 for the following purposes:

- Increase Product Research and Development to create additional follow-on products as well as to further fine-tune our competitive advantages.
- Develop partnership with manufacturer and ramp up production and inventory to meet customer demands.
- Maximize sales with an extensive campaign to promote our products and services.
- Reinforce Customer Support services to handle the increased demands created by the influx of new orders and broader coverage of existing accounts.
- Augment Focus Systems staff to support and sustain prolonged growth under the new market plan.

We anticipate additional investment requirements of \$500,000.00 in 2 years to allow us to increase production capacities to meet market demand.

Sales and Promotions

Through our marketing survey we tried to determine what types of retail outlets would be the most effective means of distributing our product. We discovered that 47% of consumers would expect to purchase this item through a department store. Although our main focus will be on department store outlets, we plan to sell the Guardian through several different channels. Due to the variety of markets for our product, the retail outlets will vary according to the consumers planned use for the product. Other typical outlets will be electronic equipment houses and catalogs, along with Internet sites.

We will invest only 10% of our gross sales in advertising due to the extensive media coverage the product has already received. Our advertising will be conducted through normal media with a heavy emphasis on Internet promotions. We plan to offer promotions for larger market areas such as schools or nursing homes.

Risk

The top business risk that Focus Systems faces as it begins to expand in the security systems market are very low or none. We will put in a disclaimer for product liability and any risk associated.

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Competition

There are several similar devices on the market today such as Kids Bug and Wander Guard. However, they are either too bulky or they use too much bandwidth to be contained in a practically sized unit. No other competitor's product offers the state of the art features as does our Guardian and our retail pricing will be considerably lower than our competition. Our strategy for meeting and dominating the competition is to offer a lower price and a better product with more user friendly features.

Conclusion

In this paper engineering students and business students from two different universities Worked on writing a successful business plan to market a sophisticated global monitoring system to monitor location of children, Alzheimer patients and other valuable items. Currently a spin-off company has been formed and the more detail version of the business Plan has been presented to various interested venture capital firms. Due to extensive Media coverage^{5,6,7} of this invention several firm have expressed interest in founding this project.

Acknowledgements

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