



Presents

# **The Surfer Speaker**

A New Wave in Surfing

By: Justin Jarjour, Chris Herbert, Blake Brown, Gordon Hill



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## Table of Contents

Executive Summary .....	1
Introduction.....	3
Background.....	4
Current Market Offerings .....	6
Intel’s Wireless Technology Surfboard.....	6
South Australian’s Shark Shield.....	7
Surfer Innovation’s Surfer Speaker .....	7
Product Design.....	8
Components of The Surfer Speaker .....	9
Surfboard .....	9
Integrated Speaker.....	9
Internal Receiver and Battery.....	10
Solar Panel.....	10
iPod & iTrip.....	11
Waterproof case & Arm band .....	11
Easy Steps forOperation.....	12
Design Options.....	13
Speaker Position .....	13
Speaker Face & Solar Panel Color .....	13
Implementation Plan.....	14
Manufacturing .....	14
Marketing and Selling Strategy.....	14
Materials.....	15
Equipment .....	15
Personnel .....	15
Fabrication and Assembly Time.....	16
Projected Budget .....	16
Qualification.....	17
Conclusion .....	18
References.....	19
Appendix A: Survey with Results.....	20
Appendix B: Resumes.....	24



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## List of Figures

Figure 1. Money willing to pay.....	5
Figure 2. Shiny Shiny: Wireless Surfing .....	6
Figure 3. Wireless Technology Surfboard by Intel.....	6
Figure 4. South Australian Shark Shield.....	7
Figure 5. Surf board zaps shark .....	7
Figure 6. Diagram of The Surfer Speaker.....	8
Figure 7. Design Schematic .....	8
Figure 8. Boss MR60B marine speakers.....	9
Figure 9. Integrated Speaker Compartment.....	9
Figure 10. GK10FM FM Receiver .....	10
Figure 11. Receiver & Battery Compartment.....	10
Figure 12. TT-3683C Solar Panel.....	10
Figure 13. Solar Panel Compartment.....	10
Figure 14. iTrip .....	11
Figure 15. iPod Hard Cases .....	11
Figure 16. iPod Arm Band.....	11

## List of Tables

Table 1. Speaker and Solar Panel Color Options.....	13
Table 2. Component Costs per <b>Surfer Speaker</b> fabricated.....	17
Table 3. Cost of Installer labor needed per <b>Surfer Speaker</b> fabricated.....	17



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## Executive Summary

Surfing is one of today's fastest growing sports. The surf industry is fairly new and has great potential for growth. It has long been a dream of many surfers to combine the two past times of surfing and listening to their favorite music, and our product, **The Surfer Speaker**, makes that dream a reality.

Today over 400,000 surfboards are sold world wide per year, and the industry is estimated to yield over 4 billion dollars per year. [Pitta, 2003] The largest population, of the estimated 2.4 million surfers, are males between the ages of 15 and 25, who also happen to be the largest consumers of music technologies. According to our surveys, it was found that 92% of the surfers surveyed were interested in **The Surfer Speaker**.

The idea of combining technology with surfing is not a new one. In 2004 Intel created a prototype of a computer built into a surfboard. Another similar product is the South Australian Shark Shield which wards off sharks using a pulsing electric field embedded in the surfboard. These two products, which have a limited market audience, show a growing trend for mixing technology with surfing.

The **Surfer Speaker**, which fits into any surfboard, provides a way to play music through an iPod. The iPod, which is strapped to the user's arm, uses iTrip technology to send a wireless signal to an internal FM receiver, which then transmits the sound through the speaker. In addition, a solar panel also located on the surfboard uses sunlight to recharge the battery in the speaker component. This makes the system completely self-sufficient; in other words, not dependent on an adapter to recharge.

Surfers are individualists, and we at *Surfer Innovations Inc.* have embraced that quality by offering design options to our consumers. Our engineers have designed the perfect speaker component placements to maximize maneuverability and speed based on the type of surfboard being modified. We have optimal placement designs for longboards, shortboards, and body boards. A variety of different color speaker faces and solar panels are also available to our customers, because every surfboard is as individual as its owner and his or her choice of music.

Our implementation plan will be carried out in two parts: prepare for manufacturing, and marketing and selling the product. In preparation for manufacturing we plan to hire cheap labor and train them to customize any surfboard, and purchase wholesale components in bulk to cut down on costs. In marketing and selling the product we plan to hire knowledgeable salespeople. To promote our product we will sponsor young surfers, team up with companies selling complimentary products, and involve the company in surfing community events such as competitions. The total estimated cost for the installation and fabrication of **The Surfer Speaker** is \$79.50 - \$95.50, not including markup.



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**The Surfer Speaker** is the newest surfboard modification in a growing market eager for inventive new products and upgrades. We at *Surfer Innovations Inc.* believe that **The Surfer Speaker** will create a new wave of surfers who enjoy listening to music while surfing. With our proposal we offer you the chance to join an industry with a strong trend of growth.



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## Introduction

Surfing is one of today's fastest growing sports. There are surfers in almost every country that has a coastline. The surf industry currently makes over 1 billion dollars in profits a year. The surf industry is relatively new and has great potential for growth.

Surfers have always paddled out into the water with a song in their head. Humming to themselves as they wait for the next set. Many surfers have wanted to bring a CD player with them surfing but have found the CD player bulky and have had trouble with water leaks. With advances in Mp3 players and water resistant technology, our product finally lets the surfer's dream of listening to a favorite song while surfing come true. Electronics are just beginning to be implemented into surfboards such as Intel's Surfboard PC [Surf net, 2004]

Our product combines the surfer's passion for waves and music into one product. Our product, **The Surfer Speaker**, allows surfers to listen to their favorite songs while surfing. Our product uses waterproof speakers and wireless connections to allow surfers to play music from their Mp3 player through a speaker on their board. Waterproof casings will protect the speaker and the Mp3 player from pressure and water.

Through extensive research, we have found that surfers are greatly interested in this product. From a survey that we conducted, we found that 92% of people surveyed were interested in buying our product. Currently there is no similar product offered on the market. These two facts combined make **The Surfer Speaker** one of the hottest inventions released onto the market.



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## Background / Need

The evolution of the surfboard has come a long way in the past century. Early surfboards were made of Balsa wood and were up to 16 feet in length and weighed upwards of 110 pounds. Today surfboards are around 6 feet in length and are fashioned from Styrofoam, fiberglass, and resin, and weigh about 20-50 pounds.

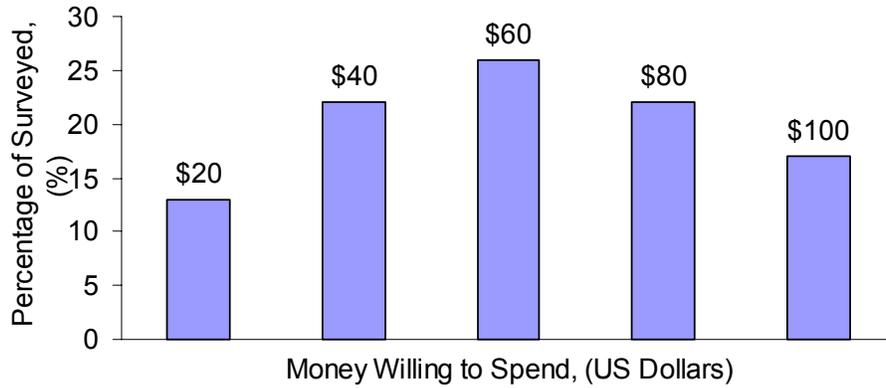
The past time of surfing is an increasingly popular activity among youths today. The surfing consumer market dramatically increased with the invention of the wet suit. Today the surfer population is estimated to be 2.4 million (in 2001). The surfing industry is now a multibillion dollar a year industry. In addition studies have shown that internet purchasing of surfing hardgoods has increased 500% from 2001 to 2003. [Buckley, 2004] The surf industry sales are about 4 billion dollars per year. The annual sales of surfboards are 400,000, and the US has accounted for 60% of the sales, 240,000 boards. [Pitta, 2003]

The largest surfing population is males between the ages of 15 to 25. This population is also the main contributors to the popularity of music technologies such as iPods, CD players, and Mp3 players. Listening to music is an important part of their lives.

We at *Surfer Innovations Inc.*, therefore decided to combine these two past times with our product, **The Surfer Speaker**, which allows a person to surf and listen to music at the same time. Surfers have been known to drive hundreds of miles, or fly thousands of miles in order to ride the best waves. This type of devotion to the sport shows us that there is a penetrable market for our product.

We chose to focus on male surfers because surfing is a primarily male dominated sport due to its physical nature, but we do acknowledge that it is becoming increasingly popular among younger women as statistics have shown that 19% of surfers were female in 2001, and 38% in 2002. [Buckley, 2004]

To see if there was support for our product, we surveyed over forty surfers and found that 92% were interested in **The Surfer Speaker**. Of that 92% interested in our product from the graph shown in Figure 1, 26% said that they would be willing to spend \$60 to install the speaker into their board, 22% were willing to spend \$80, another 22% were willing to spend \$40, and 17% were willing to pay \$100. This shows us that the people interested in our product are willing to spend a fair amount of money on **The Surfer Speaker** modification.



**Figure 1.** Money willing to pay. This bar graph shows the dollar amount surfers would be willing to pay for **The Surfer Speaker** modification.

In addition more than half of the surfers surveyed already owned an Mp3 player or iPod, and 87% of the surveyed would prefer having the speaker installed to a board that they already own.

Based on these statistics, we have concluded that there is a strong market for **The Surfer Speaker**.



## Current Market Offerings

Since the development of technology and the sport of surfing are both growing very rapidly among the younger generation, certain companies have already begun to take advantage of the opportunities they both provide. Currently there are two items being integrated into surfboards. Although different from our product, these offerings show that the market is growing, and that our product meets the new market trend.

- Intel's Wireless Technology Surfboard
- South Australian's Shark Shield

### Intel's Wireless Technology Surfboard

In 2004, Intel designed a surfboard with a built-in wireless laptop, which enables surfers to surf the web while surfing the waves (see Figures 2 & 3). The computer requires a "hotspot" within range on the beach that will allow surfers to use the internet. A solar panel enables the computer's battery to be charged while being used. While Intel claims that the board works as a surfboard and a computer, this is only a prototype and its market audience is the surfing businessperson who cannot leave the office. This product will very likely be too expensive for the average surfer.



**Figure 2** Shiny Shiny: Wireless Surfing, 2004.



**Figure 3** Wireless Technology Surfboard by Intel, 2004.



## South Australian's Shark Shield

South Australian has developed a surfboard that wards off sharks with a pulsing electric field, which will be available sometime this year (See Figures 4 & 5.). The boards would rely on technology already on the market that divers use to protect them from an attack. The unit will consist of two electrodes spaced a particular distance apart in an antenna and will be powered by a rechargeable nickel metal hydride battery. The unit will be expected to add \$370-450 to the cost of a board and the market audience would be surfers who tend to surf in shark-infested waters, such as the coasts of Australia.



**Figure 4** South Australian Shark Shield



**Figure 5** Surfboard zaps sharks, 2004.

## Surfer Innovation's Surfer Speaker

The most distinct differences between these two offerings and **The Surfer Speaker** are:

- **Target audience** - Our intended audience is the common surfer who enjoys listening to music with a budget. Since 100% of the subjects we surveyed listen to music and 92% would like to while surfing, our product would be perfect for just about anyone who surfs, not just the businessman or the dare devil.
- **Cost** - Since the price of our material and installation will be comparatively lower than these two items, our product will once again triumph over the ideas of our competitors.



## Product Design

**The Surfer Speaker** by *Surfer Innovations Inc.* is a modified surfboard with an integrated speaker, shown in Figure 6. *Surfer Innovations Inc.* installs the speaker component into a pre-existing surfboard. The speaker component is supplied with music wirelessly from an iPod using iTrip Technology. The speaker and receiver are powered by a rechargeable 9V battery, which is charged by a solar panel on the surface of the board.

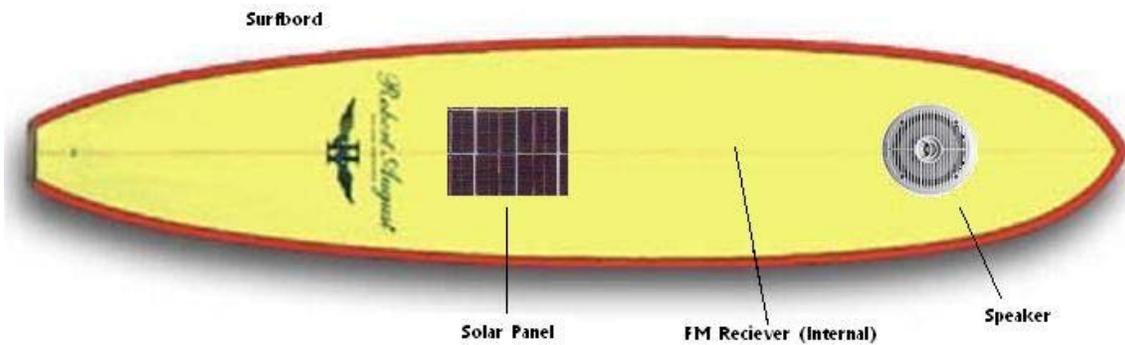


Figure 6 Diagram of The Surfer Speaker

### Components of The Surfer Speaker

The surfer speaker consists of six main parts: Surfboard, integrated speaker, internal receiver, solar panel, iPod case, and iPod/iTrip, with wiring running inside the surfboard.

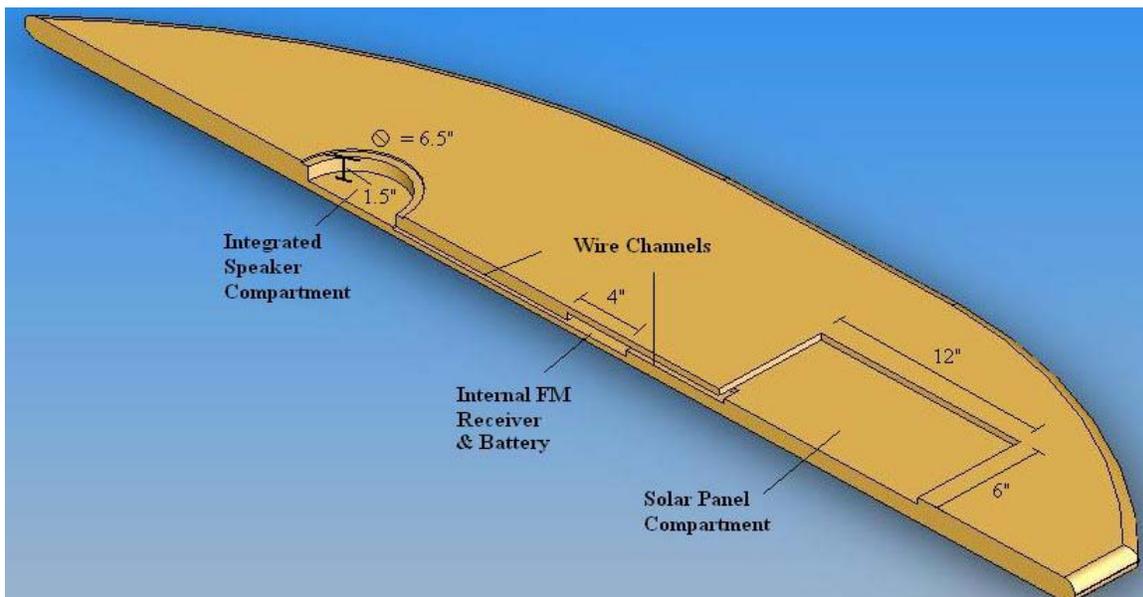


Figure 7 Design Schematic



## Surfboard

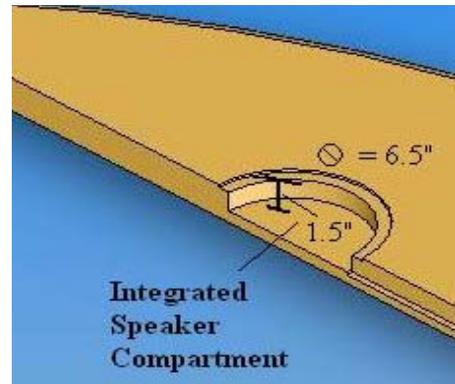
The surfboard, shown in Figure 6, is a basic surfboard chassis that has chambers cut out of it to accommodate the solar panel, the speaker, the receiver, and two wiring passages between those three. The surfboard still retains the same shape of a normal surfboard with all the same handling and geometry, but with the ability to play music while sitting out on the ocean. It is designed to be low maintenance and easy to use. The receiver is completely hidden while the solar panel and the speaker are exposed. The exact spacing of the speaker and the solar panel will vary since at first these boards will be made to order to the customers specifications.

## Integrated Speaker

The integrated speaker is a standard 6 1/2" marine speaker (see Figure 8). It is bolted straight into a pre-cut groove in the top of the surfboard with the wiring running into it from below coming from the receiver (see Figure 9).



**Figure 8** Boss MR60B marine speakers



**Figure 9** Integrated Speaker Compartment



### Internal Receiver & Battery

A standard FM receiver with dimensions 3"x3.5"x1" is used to receive FM signals from the iTrip transmitter, which enables the speaker to play music (see Figure 10). It is powered by a rechargeable 9V battery connected via wires and fits into a pre-cut compartment in the middle of the surfboard (see Figure 11).



Figure 10 GK10FM FM Receiver

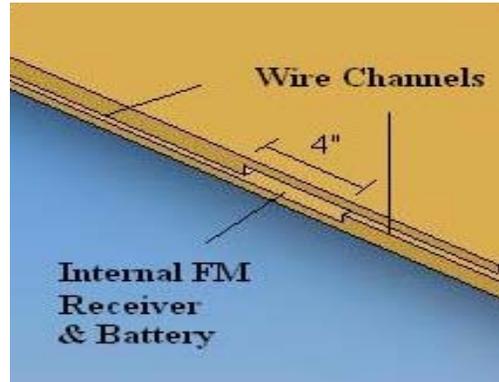


Figure 11 Receiver & Battery Compartment

### Solar Panel

A standard waterproof solar panel with dimensions 12" x 12" is mounted and sealed into the top of the board. It is used to recharge the 9V battery which powers the internal receiver and speaker.

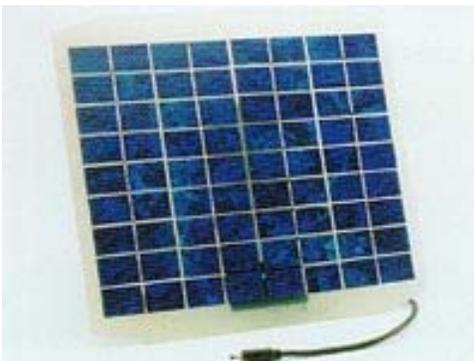


Figure 12 TT-3683C Solar Panel

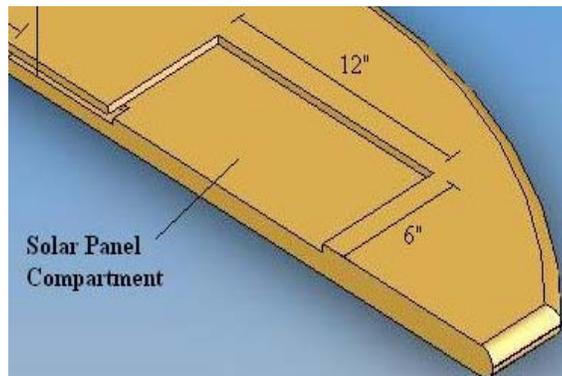


Figure 13 Solar Panel Compartment



## iPod & iTrip

We will be using a standard mass-produced iPod. Apple currently has a product which is intergrated into an iPod which enables music to be played on an FM radio. The iTrip is plugged into the top of the iPod and transmits the media to the internal receiver in the surfboard (see Figure 14).



**Figure 14** iTrip

## iPod LilliPod Water Proof Case & Arm Band

Apple also currently manufactures The iPod LilliPod water proof case and Arm Band. The LilliPod is mounted to a wetsuit with the elastic Arm Band (see Figures 15 & 16).



**Figure 15** iPod Hard Cases



**Figure 16** iPod Arm Band.



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## Easy Steps for Operation

**The Surfer Speaker** is designed so that it is easy to use by a consumer with any level of technical knowledge. As long as the customer knows how to use an iPod, he or she will be able to use our product.

1. Download music onto iPod.
2. Make sure iPod is charged and has the iTrip software installed and tuned to the appropriate FM station.
3. Mount the iTrip on top of the iPod securely.
4. Put the iPod/iTrip in its case and make sure it is closed and sealed.
5. Strap to Arm.
6. Surf!

Once the desired music is downloaded, the iTrip sends the music wirelessly to the internal receiver, which transmits the music to the speaker. **The Surfer Speaker** does not alter the surfboard's shape or maneuverability but allows the surfer to jam to his or her favorite beats while paddling out or waiting for the perfect wave.



## Design Options

Surfers tend to be individualists, and at *Surfer Innovations Inc.* we embrace those individualists by offering them the chance to personalize their surfboard. We offer two different design options:

- Speaker Position
- Speaker Face & Solar Panel Color

### Speaker Position

Our product is designed to satisfy the needs of each customer. Therefore, we will offer the ability to customize the placement based on the type of surfboard owned by the customer. Speaker position is important to a surfer because the weight distribution changes based on its location within the board. The engineers at *Surfer Innovations Inc.* have developed dimensions of optimal placement of the speaker to maximize the boards speed and maneuverability. Based on testing and research we offer different positioning for the following types of boards:

- Longboard
- Shortboard
- Body Board

### Speaker Face & Solar Panel Color

At *Surfer Innovations Inc.* we modify pre-existing surfboards at the customer's discretion, so not every surfboard is the same color or style. We offer a variety of colors (see Table 1) for the speaker face and solar panel so that each surfboard color can be accompanied by a component that is aesthetically pleasing to the customer. The customer can also mix and match the speaker and solar panel colors to his or her own preferences.

**Table 1** Speaker and Solar Panel color options.

Jet Black	Sting Ray Gray	Wave Crest White
Midnight Wave	Ocean Blue	Tubular Turquoise
Kelp Green	Kiwi Green	Mango
Sunset Yellow	Pineapple Yellow	Radical Red
Malibu Pink	Paradise Purple	Coral Reef



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## Implementation Plan

**The Surfer Speaker** presented by *Surfer Innovations Inc.* is produced by custom altering an existing surfboard with **The Surfer Speaker** components. Because we are customizing an already existing surfboard to the specifications of the owner, we propose two main steps of implementation:

1. Manufacture the product
2. Market and Sell the product

### Manufacturing the Product

Before orders for **The Surfer Speaker** are attained certain steps are taken to make sure the consumer gets the highest quality product possible in a timely manner.

The steps taken in preparation to fabricate **The Surfer Speaker** are as follows:

- Rent warehouse where assembly will take place
- Buy machinery necessary for fabrication
- Buy wholesale components in bulk
- Hire cheap labor and train

### Marketing and Selling Strategy

We must market and sell the **Surfer Speaker** before any manufacturing is done. The surfboard is provided by the customer either through a surf shop or directly to *Surfer Innovations Inc.* then fabrication begins.

In order to market and sell **The Surfer Speaker** we at *Surfer Innovations Inc.* have devised four important aspects to accomplish this goal:

- Hire knowledgeable salespeople to sell product to independent and chain surf shops
- Sponsor young surfers
- Team up with companies that have complimentary products
- Involve company in surfing community events and activities such as competitions



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## Materials

*Surfer Innovations Inc.* provides the service of customizing an already existing surfboard, the customer will already have a surfboard and an iPod with iTrip technology. The materials required for the fabrication of **The Surfer Speaker** do not include these two components. The materials required for the manufacture of **The Surfer Speaker** component are as follows:

- Marine Speaker
- FM Receiver
- Solar Panels
- Plastic Casing
- Rubber Gaskets
- Adhesive Silicon
- Wires
- Foam Insulation
- Rechargeable Nickel Cadmium Battery (9Volts)

## Equipment

The insertion of **The Surfer Speaker** component into an existing surfboard requires minimal equipment which are as follows:

- Table Saw
- Drill Press
- Sanders



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## Personnel

The personnel needed for the processes of fabrication, marketing, and general clerical work for **The Surfer Speaker** are given below:

### Installers for

- Speakers
- Transmitters
- Solar Panels
- Seal final product
- Sand final product

### Market Representatives

- To sell product to surf shops
- To involve company in events and competitions
- To buy wholesale components

### Clerical Workers

- Receive orders
- Transmit orders between Market representative and Installers
- Bill customer

The three different categories of Personnel are paid in different ways, the Installers are paid on an hourly basis, the Market Representatives are paid through commissions, and the Clerical Workers are paid on salary.

## Fabrication and Assembly Time

The amount of time estimated for each board to be completed is two days. There are three main parts to the assembly and fabrication of the product:

- |                 |           |
|-----------------|-----------|
| 1. Installation | 2-3 hours |
| 2. Sealing      | 24 hours  |
| 3. Sanding      | 1-2 hours |

Step 2 requires the greatest amount of time in the process, this is due to the sealant needing at least 24 hours to harden. The time required for the installation and sanding steps are actual man hours for a total of 3 to 5 hours of labor. The process requires minimal labor because our company is installing the speaker into a pre-existing surf board.



## Projected Budget

Based on the costing of each component, shown in Table 2, and the costing of the labor required to fabricate one Surfer Speaker unit, shown in Table 3, the total estimated production cost for one **Surfer Speaker** is \$79.50 to \$95.50. This cost does not include the cost of the surfboard, the iPod, or clerical personnel and assumes a labor wage of \$8/hour for the installers. The cost also does not take into account the markup necessary to pay the market representatives a commission, or the salary paid to the clerical workers. The markup necessary is solely dependent on the projected number of units sold per week.

**Table 2** Component Costs per **Surfer Speaker** fabricated.

Component	Cost per Product(US dollars)
Speaker	15
Solar panels	20
Transmitter	5
Casing/rubber gaskets	.50
Wires	.50
Insulation	.50
Rechargeable 9 volt nickel cadmium battery	3
Coating/Sealant	3
Surf Board	--*
iPod	--*

--\* Already owned by consumer so not a cost incurred by *Surfer Innovations Inc.*

**Table 3** Cost of Installer labor needed per **Surfer Speaker** fabricated.

Labor breakdown	Cost per product (US dollars)
Installation	16-24
Coating	8
Sanding	8-16



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### **Why is *Surfer Innovations Inc.* Qualified to Build this Product?**

*Surfer Innovations Inc.* has an experienced staff of engineers who have not only invested their time into seeing our product succeed, but have a true love for the sport of surfing. These traits have enabled the team at *Surfer Innovations Inc.* to develop a product that will meet the demand in this growing market of new technology incorporated into sports. Refer to Appendix B for a resume for each engineer involved in the product design.



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## Conclusion

**The Surfer Speaker** is the newest surfboard modification in a growing market eager for inventive new products and upgrades. We at *Surfer Innovations Inc.* believe that **The Surfer Speaker** will create a new wave of surfers who enjoy listening to music while surfing. Based on our research we have discovered that there is a high demand for this unique modification, because every surfer has experienced the boredom of waiting for the right wave to come for long periods of time.

With our proposal, we offer you the chance to invest in a product that will become an everyday name in surfers' lives. This proposal also gives you the chance to join an industry with a strong trend of growth.



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## References

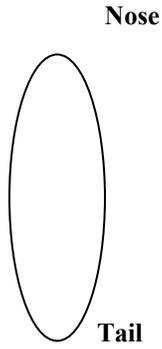
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11. Where are your feet on your surfboard?  
Please mark with X's



12. Do you have any suggestions or concerns about our "Surfer Speaker"?

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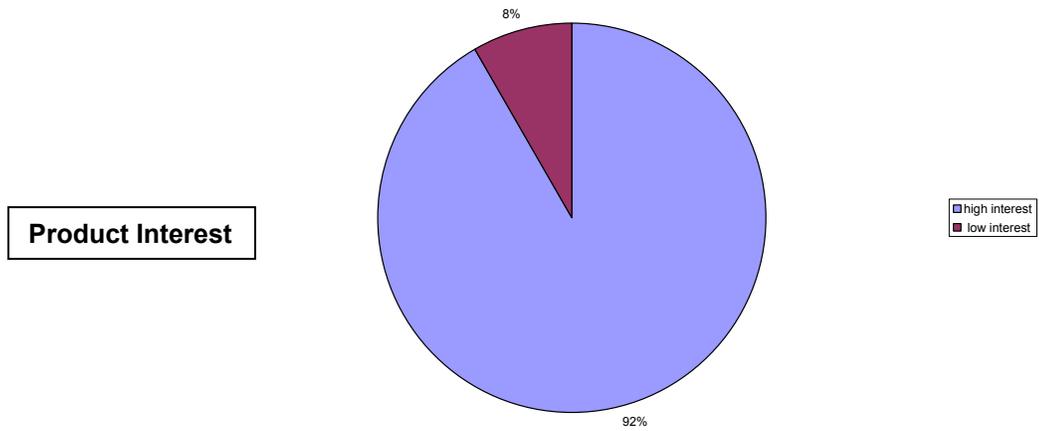
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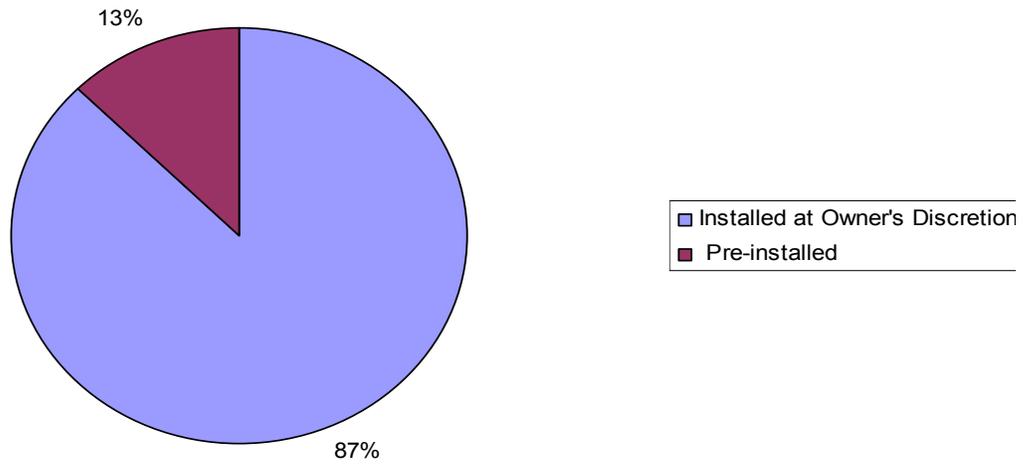
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## Survey Results

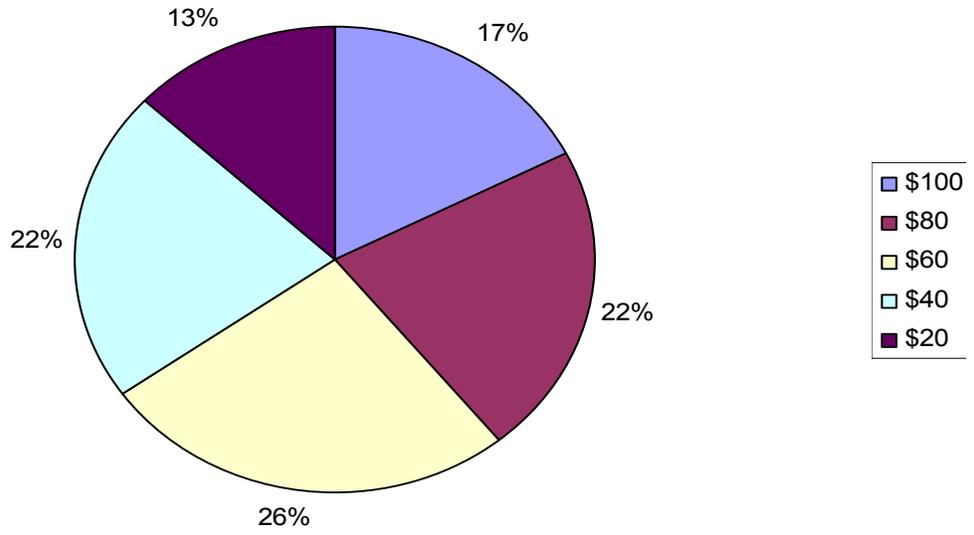


Installation Preference

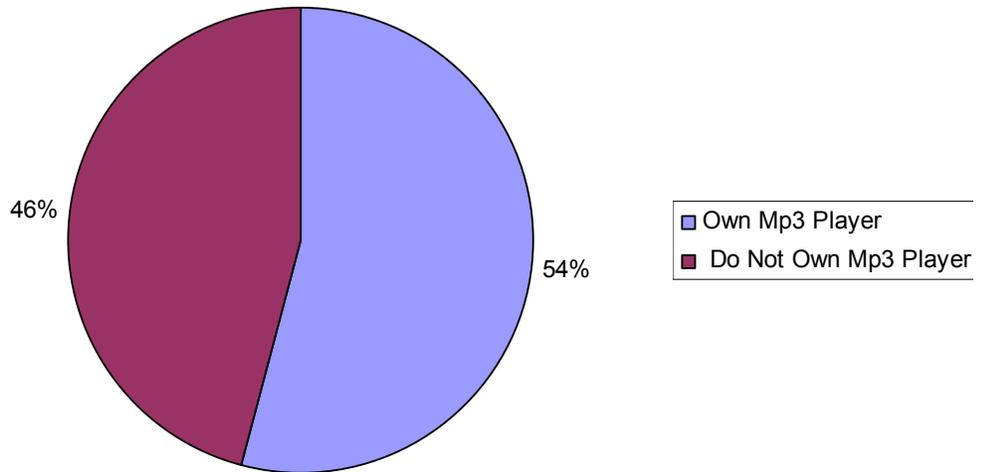




Money Willing to Spend on Product Installment



Mp3 Player Ownership





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## Appendix B: Resumes

Enclosed are the four resumes of the founders of  
*Surfer Innovations Inc.*  
and creators of  
**The Surfer Speaker**

Blake Brown	Chief Executive Officer & Chemical Engineer
Justin Jarjour	Chief Financial Officer & Mechanical Engineer
Christopher Herbert	Chief Marketing and Promotions Officer & Electrical Engineer
Gordon Hill	Chief Design Officer & Physicist