VENTURE SUMMARY

THE CHUCK GLOVE

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1. SUMMARY

This venture summary describes an idea for a device known as the CHUCK GLOVE. The idea combines RFID technology and haptic sensing technology together, integrating them into a novel solution that would assist the visually impaired to locate and identify various objects within their home. The device is voice operated with a straightforward user interface and is powered by a rechargeable Li-ion battery. It is envisioned that the CHUCK GLOVE would help assist the visually impaired in their day-to-day activities, which would profoundly help them to be more self-reliant and self-confident.

2. MARKET OPPORTUNITY

The CHUCK GLOVE is aimed at the blind and the visually impaired population. It is estimated that there are at least 80,000 New Zealanders[1], or about 1.88% of the New Zealand population[2], who are blind or who have sight limitations that can't be corrected with spectacles or contact lenses. The number Royal New Zealand Foundation of the Blind (RNZFB) [3] members currently accounts for 15% (approximately 11,700) of the blind or visually impaired New Zealanders. Due to its reasonable sampling size, we have decided that it is justifiable to assume that the statistics obtained from RNZFB can be used to roughly estimate the segmentation for the blind or visually impaired population of New Zealand, as follows.

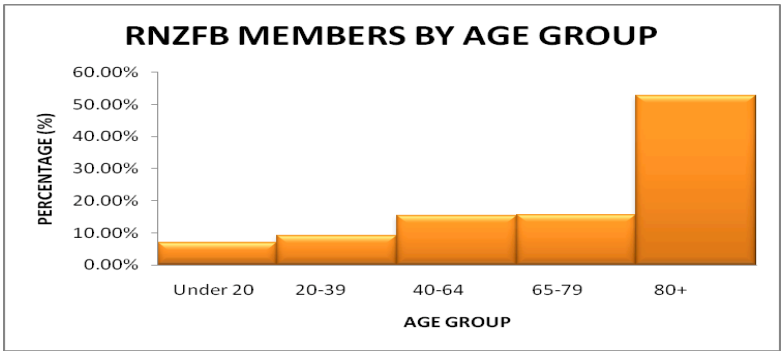

Figure 1.0 RNZFB members by age group[3]

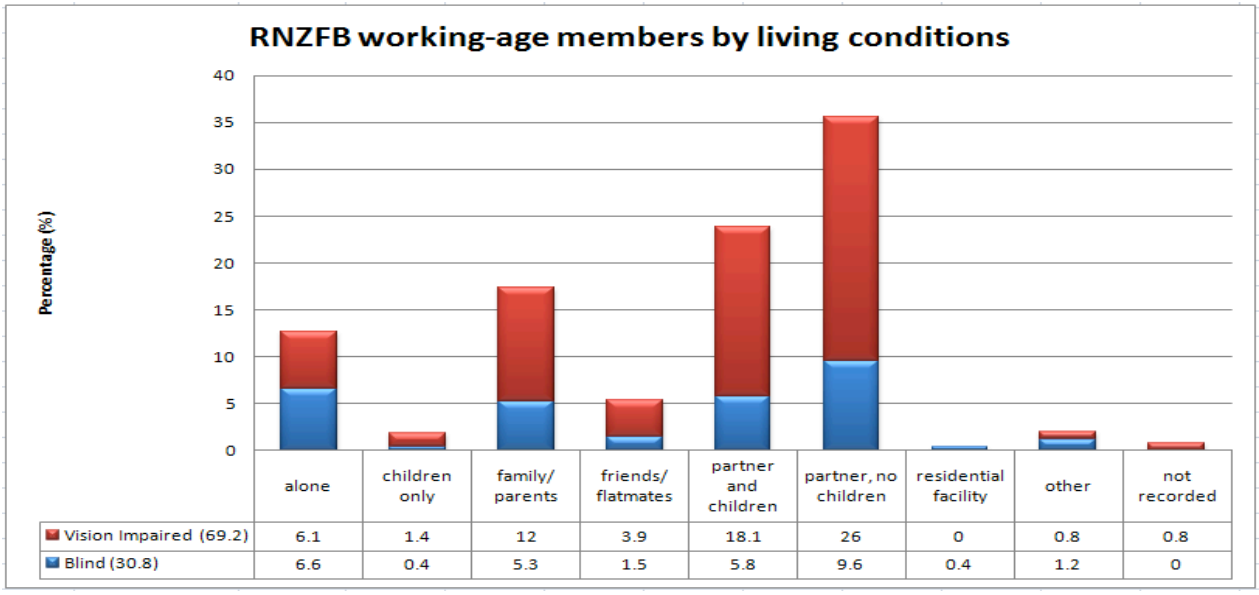

Figure 1.1 RNZFB working-age (18 -65 years old) members by living conditions[4]

We have yet to find a product similar in form factor and cost of the CHUCK GLOVE. An existing alternative for blind people or visually impaired individuals to go about in their daily indoor activities is to use a trained guide dog. One of the profound advantages of using a guide dog is its ability to provide a sense of companionship that is obviously absent in a circuit board. On the other hand, it takes at least 18 months to obtain a fully trained guide dog and the cost to train them is well within NZ$22,500 per dog[5]. Apart from training costs, cost will also be incurred on the owner in the form of dog food, dog care products, and so forth. The CHUCK GLOVE, aimed to be sold at NZ$300 per unit, would prove to be a more economical of the two as well as being less time-laborious. It is also easy to use requiring about three to five hours of training.

Each potential customer would only need to buy one CHUCK GLOVE. We have decided to use an "application factor" of about 10% that represents the percentage of the New Zealand population that would use the CHUCK GLOVE in other applications such as warehouse inventory updating and

community library book management. “Potential factor” represents the percentage of the population that would even consider buying the CHUCK glove, which is optimistically estimated to be 50%. We have decided to narrow down the potential market to those who are blind or visually impaired, living alone, and of working age. This constitutes to 12.7% of the blind and visually impaired population, as shown in Fig. 1.1. The estimated total market demand is therefore,

Potential buyers = NZ pop. x (blind people + application factor) x potential factor x market segment

= 4.263 million x 11.88% x 50% x 12.7%

= 32,159

Total market demand = # potential buyers x quantity of purchase x price per unit

=32,159 x 1 x NZ$300

= **NZ$9.65 million**

The future market demand for the CHUCK GLOVE is ascertained by assuming that the early majority, late majority, and laggards 34%, 34% and 5%-20% of the total market demand. It is estimated that we would achieve 100% of the potential market by the end of two to three years. Once this target is achieved, we plan to export the CHUCK GLOVE to the world market.

3. PRODUCT DESCRIPTION

Our product goes by the name of CHUCK GLOVE and is aimed to assist the visually impaired in conducting their daily activities. The product will give the user the ability to search for a pre-tagged object by just feeling the vibration on the palm their hand. For example, when the user wants to search for their misplaced room key, all they have to do is say a set of voice commands into an integrated microphone and the glove will begin to vibrate if the key is close by. The vibration will become stronger as the object they are searching for is closer to the glove. It can also be used for object identification enabling the visually impaired to identify a particular pre-tagged document, card, or even medicine labels. This is done by saying the command word "IDENTIFY" into the integrated microphone while holding the object. The glove, via an inbuilt speaker, will then tell the user what the object is.

The CHUCK GLOVE is still in its prototype stages, integrating two existing technologies together which are RFID (radio frequency identification) tag technology for object identification and detection and haptic sensing technology for vibration queues. It consists of several RFID sensors that could detect RFID tags within a 3m radius, vibrators for feedback, a DSP (digital signal processing) circuit, and an integrated speaker and microphone, all powered by a rechargeable Li-ion battery. The battery can be recharged via USB or from the mains. The battery can also be partially recharged by kinetic charging. An example of kinetic charging is the Seiko Kinetic Wristwatch[6].

The CHUCH GLOVE is fully assembled and is ready to be used out of the box. With visually impaired users in mind, the CHUCK GLOVE only has one thumb size command button. For energy efficiency, the CHUCK GLOVE will go to idle mode when it is not used for 5 minutes. The initial setup requires 10 minutes and mainly involves voice recognition training. When the user first receives the CHUCK GLOVE, they are required to repeat several words into the glove's microphone. The CHUCK GLOVE will inform and queue the user what the user needs to say. A manual in the form of an audio CD, Braille, and a normal book form is also included for reference Once the initial setup is completed, the user could then begin "tagging" their belongings. The tagging process involves two simple steps. First, the user places an RFID sticker onto the desired object. While wearing the CHUCK GLOVE, the user then holds the tagged object in their hand and then say several voice commands into the microphone to store the tag into the glove's expandable 1GB flash memory.

Even though the CHUCK GLOVE is aimed at the blind or visually impaired users, the device can also be used in other settings as well. The product can be used to assist old citizens or those with short memory in their day to day activities which would profoundly help them to be more self-reliant. It can also be used in the work setting, for example when a worker needs to locate a particular item in the warehouse.

4. STRATEGY / OPERATIONS

4.1 Business Model

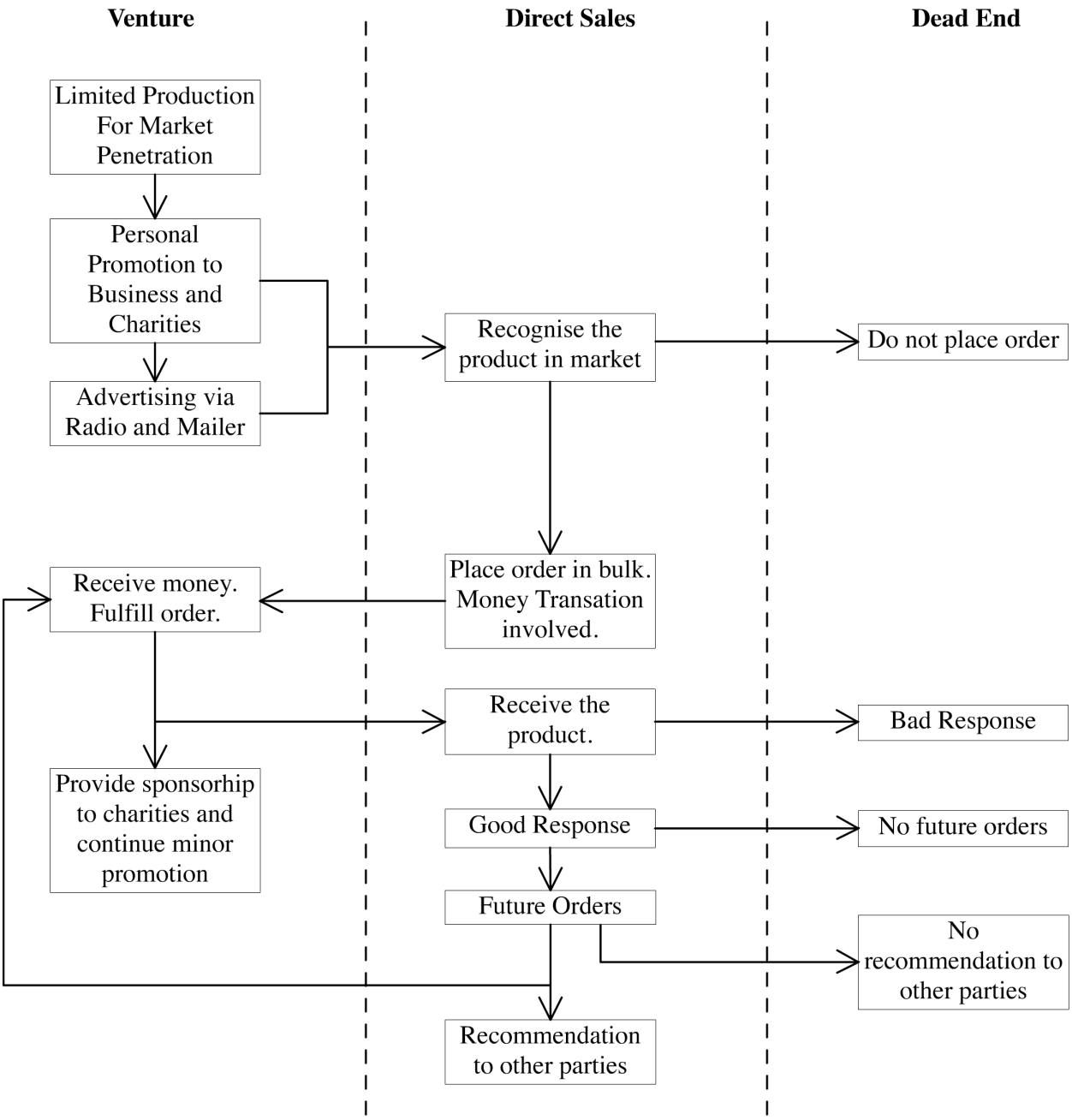

Figure 4.0 The Business Model

4.2 Pricing Model

Our pricing model will primarily be based on cost based pricing, considering the fact that our product is a new product and needs to penetrate the market. We also plan to implement full-line pricing strategy, incorporating additional services, and add-ons to the main product to maximise product potential. This will provide our target customers with the option to upgrade the basic CHUCK GLOVE package with extended warranties, personalised configurations and settings, and so forth. We anticipate that there will be a need for product customisation in order to satisfy different customer needs. For example, customers from Blind Sailing New Zealand would need the CHUCK GLOVE to be more versatile and waterproof for water sports. Once our product reaches its maturity period, we will then apply demand-based pricing.

4.3 Promotion

The promotion of CHUCK GLOVE is mainly centralised around three channels – radio, Internet and mailers. A website will be developed to create a public awareness about the product and provide supports and documentations to customers. Meanwhile, mailers or brochures are important to ensure that specific group of customers know about the existence of CHUCK GLOVE. Both mailers and website medium will be designed to consider information accessibility for the visually disabled – for example Braille typesetting – to ensure a greater scope of promotion. Radio channel promotion is also used to ensure greater scope of coverage on the product. In order to ensure successful market penetration, our promotion will stress on brand uniqueness and benefits. Once the brand essence is well established in the market, our promotion objectives will then focus on building trust and confidence of our consumers to our product and services.

4.4 Risk Analysis and Management

It is undeniable that risk analysis plays an important factor for a successful starting and continuation of any specific business.

4.4.1 Inaccurate Market Analysis

While we are trying our best to analyse the market potential of our product, we realised that there might be some inaccuracies in our analysis – especially to penetrate a market. Furthermore, the market is easily influenced by external factors for example product defects or how many people would actually pay for the product. In order to minimise this, we are planning to increase the promotion during market penetration so that we can create more demand.

4.4.2 Manufacturing Delay

Manufacturing delay is a risk that directly involved with the contractors. Failure to manufacture certain amount of products within a certain period will cause a penalty on customer satisfaction and market distribution. It is very important for us to establish proper contract with the contactors to enable us to receive some compensation if there are problems caused by them. Thus, legal action can be made to them, if the problem becomes more serious.

4.4.3 Financial Delay

Bank loan for our venture capital may be rejected especially if we are not able to fulfil their criteria. We might have to end up using personal savings or other external finance such as families, to set up the venture. Sometimes policies and taxes introduced by the government may incur some additional cost to our venture, so we are always open to the possibilities of establishing the company outside New Zealand. We might end up starting our business in a country that provide interactive deals such as free trade zones.

5. Reference

[1] New Zealand Blindness, Online, 25 March 2008, http://www.nzs.com/new-zealand-articles/lifestyle/blindness.html

[2] 4,263,000 (Estimated resident population of New Zealand, Online, 25 March 2008, http://www.stats.govt.nz/populationclock.htm)

[3] Foundation at a Glance, Online, 25 March 2008, http://www.rnzfb.org.nz/aboutus/statistics

[4] Godfrey, Jonathan. Brunning, Deborah. Costs of Blindness Research Project, RNZFB, 28 Febuary 2006.

[5] Guide Dog services, Online, 25 March 2008, http://www.rnzfb.org.nz/newsandevents/publications/brochures/gds/index_html

[6] Burd, Gregory, Seiko Kinetic Wristwatch, Online, 22 March 2008, http://devtoe.blogspot.com/2005/03/seiko-kinetic-wristwatch.html