THE QUAKEAWARE BUSINESS PLAN

by

Ryan Thomas Cole
Bachelors of Technology, Kwantlen Polytechnic University 2006

and

Donal Richard de Paor
Bachelors of Arts, Maynooth National University of Ireland 1997

PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF BUSINESS ADMINISTRATION

In the Management of Technology Program
of the
Faculty
of
Business Administration

SIMON FRASER UNIVERSITY

Summer 2011

Approval

Name: **Ryan Cole & Donal de Paor**

Degree: **Master of Business Administration**

Title of Project: **The QuakeAware Business Plan**

Supervisory Committee:

_____

Ian Hand
Senior Supervisor
Adjunct Professor

_____

Pek-Hooi Soh
Second Reader
Assistant Professor

Date Approved: _____

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Abstract

This business plan details the operating, marketing, financial, competitive, and technological landscapes of QuakeAware. QuakeAware is a website and iPhone / Android mobile phone application that helps citizens prepare for and react to a local earthquake. Presently, QuakeAware faces the challenges of becoming a sustainable enterprise and selecting the optimal strategic direction and operating mode for its future growth. This business plan identifies and assesses the options available to QuakeAware and outlines the recommended next steps. A strategic analysis and a business framework will bolster our plan to source grant funds. This will allow us to hire a full time employee to further QuakeAware's goal of providing community earthquake safety in selected earthquake-prone regions around the world. To achieve these goals, QuakeAware will need to register itself as a 'Not for profit' organization, develop grant funding and earned income streams, maintain a key relationship with a government partner, and transition toward a volunteer-driven organization.

Keywords: QuakeAware; not for profit; earthquakes; iPhone; android; apps; applications; smartphones; website; community; safety; government; analysis; business plan; emergency; emergency kits; public safety; Canada; British Columbia

Executive Summary

Almost 100,000 people died in the earthquake that struck Haiti. Less than 100 died when an earthquake struck Christchurch. Why the difference in terms of scale in the loss of human life? The citizens and government of New Zealand had the resources and the experience to prepare for the worst. Our mission is to help others be properly prepared in future earthquakes and provide tools to help them react if disaster strikes. QuakeAware aims to raise awareness in our communities, encourage the public to get prepared, provide engaging and helpful resources, and make a difference concerning public earthquake preparedness.

QuakeAware's vision is to create a "one stop shop" for earthquake preparation. We will build a user-connected community where people can share information and gain access to expert opinions. We will leverage technology advances in smart phones and the increased use of social media to be "the" source for earthquake information, through two platforms: a website, and a smartphone app. Our customers will have easy to use technology readily available to react if disaster strikes. To support our mission for concerned citizens to prepare for earthquakes we aim to extend our capability and provide a web-store to sell QuakeAware branded emergency survival kits online. The survival kits will ensure citizens are prepared to survive for several days in the event that disaster strikes. We believe the media attention and huge interest in the tragic high profile events in Japan, China, Haiti, and New Zealand has raised awareness about

earthquakes. Our goal is to serve these people from a "whole product" perspective before anyone else does.

Our research indicates that there are many websites and some apps with similar information provided by QuakeAware. We have observed that many competing smartphone applications in particular entered the market over the past year, likely due to the recent global events. However, we believe that our "whole product" concept and mission position us uniquely to be the portal of choice for people seeking information on earthquake preparedness. Our competitive advantage is further strengthened with our partnership with Geological Survey Canada (GSC). Resident seismologists will provide regular content on our web portal of interest to our install base. We believe non-consumption due to lack of awareness rather than other competitors is the largest threat to the QuakeAware from a mission and commercial perspective. We will discuss strategies to increase adoption of our products in this paper.

QuakeAware aims to provide all information and services free. Although QuakeAware has incurred minimal operational and overhead costs to date, a viable business model is required to ensure we take the mission to a new level. We will explore funding opportunities ranging from: Government and academic grants, fundraising, non-intrusive website advertising and the sale of branded earthquake kits. The current team has done an excellent job with modest resources to raise awareness of earthquakes in the lower mainland. We will explore the appropriate organizational structures and potential business models best suited to delivering a sustainable organization to serve this opportunity. The team has determined that we now need to hire a manager to run QuakeAware to evangelize our mission on a full time basis and to take the organization

to a new level, and expand, internationally. With our services, citizens in regions prone to earthquakes have no reason not to be QuakeAware.

Finally, we need to make our brand come alive and re-energize our team to maintain energy and commitment in the mission. In the longer term, we need to attract volunteers to take QuakeAware to a new level and expand internationally. Our intention is to transfer the governance and management of QuakeAware to a new group of directors, staff and volunteer over time once we have developed a sustainable not-for-profit strategy. With this goal in mind, we will explore options to energize the QuakeAware brand and make the mission come alive in a meaningful way in order to attract new volunteers and directors.

Dedication

Ryan Cole: To my infinitely patient wife Trisna, whose constant understanding and support is the only reason I was able to get through all those long nights, exhausting weekends and these last two years! I love you with all my heart and I cannot thank you enough for your sacrifice. To my parents, whose selfless efforts working two jobs and constant saving allowed me to get to where I am today. You two never had time for yourselves; yet you always found the time for us. I love you two so very much!

Donal de Paor: To my favourite person on the planet Min Chi de Paor. Thanks for your love and support over the past few years. I could not have done this without you. Liam, you made the MBA harder. Never mind, my world has been a much happier place since you arrived. I love coming home to your big smile every evening with Mummy. To Mum & Dad. I realize every opportunity I have had in life was a gift from you. I will love you both forever.

Acknowledgements

A great amount of appreciation goes out to Ian Hand; whose insightful help and considerable flexibility lead us through this capstone adventure.

Thank you also goes out to Alison bird, Malaika Ulmi, and all the good people at the Geological Survey Canada. Your support has been a driving force in making QuakeAware what it is today.

We would also like to express our gratitude to Simon Fraser University; although there are too many people and departments to list, we wanted to say that we would not have been successful if it was not for all of SFU's efforts and connections, which gave us the opportunity to be seen by the community and our newfound partners.

A special thanks to team QuakeAware. It has been an absolute pleasure to work with you academically and professionally. It is no exaggeration to say we could not have achieved what we did without the entire QuakeAware team, Dylan, Eliza & Kelvin. Thank you.

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Glossary

Android Smartphone Operating System; Android refers to a OS produced by Google and is open to any cellular phone manufacturer to use as a means of controlling the phone and running standardized applications.

Apps Application; this can refer to any program or routine that runs on a smartphone to either provide information or to entertain the user. For the purposes of this paper, the 'app' is referring to QuakeAware for either the iOS or Android platforms.

IDE Integrated Development Environment; This is the workspace in which most programmers and developers write code. IDEs allow for a quicker development cycle as they allow for real time testing as well as access to libraries that dramatically reduce the amount of original code needed.

NFP Not For Profit; These entities are organizations that do not distribute surplus funds to the owners or shareholders; but rather, use these funds to support and achieve the organizations goals. In Canada, a NFP can gain 'charity status' which will allow the entity to issue tax receipts for donations and be sheltered

from certain company taxes. NFPs must file annual reports and spend a certain amount of their assets per year, and are barred from engaging in any political activity.

OEM Original Equipment Manufacturers; These are companies that manufacture products or components to products for another company that will then assume the next company's brand name.

RIM Research In Motion; RIM, based in Waterloo Ontario, is a major player worldwide in the smartphone market. Due to their leading edge security and infrastructure, RIM BlackBerrys have been the generally accepted smartphone of choice by many government and large corporate entities.

SEO Search Engine Optimization; This is the detailed process of bolstering your online visibility to large search engines by employing techniques that play specifically on the techniques search engines use to rank a website's relevance to a keyword.

TLD Top Level Domain; This is the highest order of website naming under domain name regulations. For example, www.Google.com is a TLD; however, mail.google.com is a Sub-domain, and www.google.com/mail would be a link.

1: Introduction

QuakeAware was founded by a team of Simon Fraser University MBA students who developed a website and mobile application aimed at raising the awareness and readiness of members of the public with respect to earthquake preparation and survival. QuakeAware's goal is to change the public mind-set with respect to earthquake preparedness. We want people to move from "Reactive" to "Proactive" by combining information about what to do before, during, and after an earthquake. We provide educational content in a simple-yet complete format.

QuakeAware is currently available on the Internet (www.quakeaware.org) and as an app for Apple's mobile devices (iPhone, iTouch, and iPad), providing users with information on how to prepare for, survive in, and react to an earthquake. The current product also has customized emergency information for selected cities, first aid information, and related web links.

The Internet and Application platforms will continue to be the primary mediums for QuakeAware, Our challenge is to continue providing new content, innovating new features, and improving our customer interface/experience. We have completely revamped the website and added an online community with this in mind. These strategies are critical to support our position as a trusted technical innovator and early mover in this space.

Product development will be guided by the need to balance new feature delivery with the need for simplicity to sustain our key competitive advantage. Our key focus in terms of smart phone application development will be to expand our platform support to the Blackberry and Android platforms as quickly as possible. Android is the fastest growing operating system on smart phones while Blackberry is the dominant provider of smart phones for government and large corporations. In section 3.1, Industry Trends, we discuss how the declining price of smart phones and data plans will encourage greater adoption of our application. Our smart phone application contains a distilled version of the information listed on our website, structured in a simple mobile application. It is stored locally on a smartphone, which ensures that information is available even if communication signals are interrupted in the event of a disaster. Key features include a survival kit checklist, first aid instructions, and a 'My City' section that offers concise location-specific contact details and directions to emergency locations in the community. QuakeAware Mobile remains unique in the market in terms of its capability as an earthquake readiness tool.

Our website aggregates all pertinent earthquake readiness information in comprehensive detail. QuakeAware aims to be the website of choice for those seeking education or information about earthquake preparedness and survival skills. An educational section with regular contributions from earthquake experts, news feeds, assessment tools, and municipal-specific emergency instructions and locations are all part of QuakeAware's mission to be the “one stop shop” for earthquake information. We aim to promote our partnership with Geological Survey Canada (GSC) with a regular featured

blog on the website, which will further strengthen our relationship with the government and promote the credibility of our brand as a trusted aggregator of online content. We also require timely and relevant content to encourage repeat visits to the website.

1.1 The Challenge at QuakeAware

The focus of this paper is to address the strategic options available to QuakeAware. There are two dimensions to this challenge. The first is the need to maintain interest in the mission of QuakeAware. The team achieved a lot of success early in our MOT program with a large amount of television, radio, and newspaper coverage. Our vision is to expand internationally; however, we currently do not have the right team in place to do this. We also need an organizational model that can scale with this approach.

Assuming we address our internal organizational issues, the next challenge is to identify a sustainable business model for QuakeAware. To achieve our vision we cannot rely on member donations to build a viable business. We do not have the resources currently to fund the R&D investment to expand our products into new regions. We need a model that will scale to different target markets as we expand our organization and services beyond British Columbia. The website and smart phone application provide an important public service. Therefore, we provide both free. Our price point of free greatly restricts our options in terms of profitable potential business models. Since the goal of the organization is to enhance the public preparedness for earthquake, there is no

immediate commercial value attached to such initiatives. As a result, the future for fund raising is unpredictable. Our objective with this business plan is to lay down milestones for turning this social innovation into a viable business and transition to a Volunteer-driven organization

1.2 Positioning Statement

We have prepared the positioning statement below to convey what our business stands for, and to introduce our brand. We use it as the basis for all of our communications and marketing activities, to ensure we communicate consistently. This statement clearly defines our purpose to our employees, competitors, consumers and other important stakeholders.

QuakeAware is:

For: People and organizations who are concerned about how to prepare for and react to earthquakes.

Who: are dissatisfied with the current lack of easily understood information, awareness, and preparation amongst the general population.

Our Product is: an online community, website, smartphone application and emergency response kit.

That Provides: tools to help people prepare and react in real time and survive when disaster strikes.

Unlike: do it yourself solutions, government agencies, and emergency kit vendors with dated websites, and usability problems that do not offer a one-stop experience to help people prepare for earthquakes.

1.3 Methods and Analysis

Another purpose of this business plan is to help the management team to identify the appropriate business structure for achieving our objectives and promoting our mission. The team has dedicated two years together during our MBA program evangelizing earthquake preparation in our local community of Richmond. In Chapter 2, we evaluate strategic options available to the management team and make recommendations on the appropriate business structure to promote our mission. In Chapter 3, we evaluate the current market we operate in, in terms of key industry trends and assess the team's core competencies against our competition. We also perform a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis of QuakeAware and evaluate our competition. Finally, we identify our target markets and explain the criteria we used to select them. In Chapter 4 we evaluate pricing, promotion, channels & services and customer service policy for our products. Chapter 5 analyses the resources required for QuakeAware to be successful including key partnerships, our operations and volunteer strategy. In Chapter 6, we perform a risk assessment and assess legal concerns. Finally, in Chapter 7 we identify the market size of each target segment and assess the potential of selling earthquake kits as a viable commercial offering to secure the long-term future of QuakeAware.

2: Business Overview

QuakeAware, based in Richmond, British Columbia, Canada, is an online and mobile service that provides information to the public on how to prepare for and react to the event of an earthquake. We know that being prepared and ready to react in the event of an earthquake can save lives. Our mission is for everyone to be empowered with the knowledge necessary to keep themselves and their loved ones safe. This chapter describes the history of QuakeAware, our products and management team. We then discuss options available in terms of business structure and strategic alternatives available to the management team and make our recommendation, which is the basis for the remaining chapters.

2.1 The History of QuakeAware

In the aftermath of the January 2010 Haiti earthquake, the team noted that south-western BC sits on a major earthquake-prone zone and that Richmond, as an island at sea-level, was particularly susceptible to earthquake impact. After research that confirmed Richmond residents were not properly prepared for a major earthquake, and the cumbersome nature of existing resources, the team decided to develop a “one stop shop” platform for Richmond residents to easily access earthquake preparedness

information and local emergency contact information. As such, in February 2010, QuakeAware was born.

After the launch of our web community and smartphone app, QuakeAware enjoyed some early promotion through SFU events and various media outlets. In addition, the increased occurrence of major earthquakes around the world throughout the course of our MOT MBA program has highlighted the importance of earthquake preparation and attracted further attention to QuakeAware. This also prompted user requests to expand our location-specific information to other parts of BC. In response, we have since added Burnaby and Vancouver information to new versions of our iPhone app and our web community.

2.2 The Team

The QuakeAware team currently consists of seven MBA students with broad management and multi-disciplinary expertise. We have expanded the team to bring in some key members to target key areas of our business. We have recruited, as advisors, two seismologists, Alison Bird and Malaika Ulmi who are representatives from the Geological Survey Canada (GSC), Canada's national experts on seismological research. They bring with them subject matter expertise to our board as well as add credibility to our mission. We have also recruited our new marketing manager, Conner Keppel from the Farmers Association of Ireland, the largest not-for-profit organization in Ireland, to join the team. Connor brings invaluable social media, digital marketing and not-for-profit firm experience. The combination of skillset and passion among team members is

a key asset of QuakeAware. Table 1: The QuakeAware Team lists the current team members of QuakeAware.

Table 1: The QuakeAware Team

Name	Position
Kelvin Chiu	Co-founder, Managing Director
Ryan Cole	Co-founder, Director Media Relations
Donal de Paor	Co-founder, Director Product Management
Dylan Marks	Co-founder, Director R&D
Eliza Yiu	Co-founder, Webmaster & Chinese Community Relations
Lin Gu	Director Finance
Vivien Lo	Director Community Relations
Connor Keppel	Director Marketing
Alison Bird	Technical Advisor
Malaika Ulmi	Technical Advisor

Source: Created by author

2.3 Current products

QuakeAware's product interfaces are interactive, intuitive, and comprehensive. The goal is to be "the" source of information for earthquake information, in engaging formats. Content is available through two platforms: a smartphone app and website.

2.3.1 The iPhone App

The QuakeAware smartphone app contains most of the information found on the website, but simplified into a mobile-friendly format and with additional features that use a smartphone's GPS function. Smartphones are becoming increasingly commonplace in society. Currently, our smartphone app is available to download on the iOS and Android platforms. There are plans to publish our app to the Blackberry, and Windows 7 app markets.

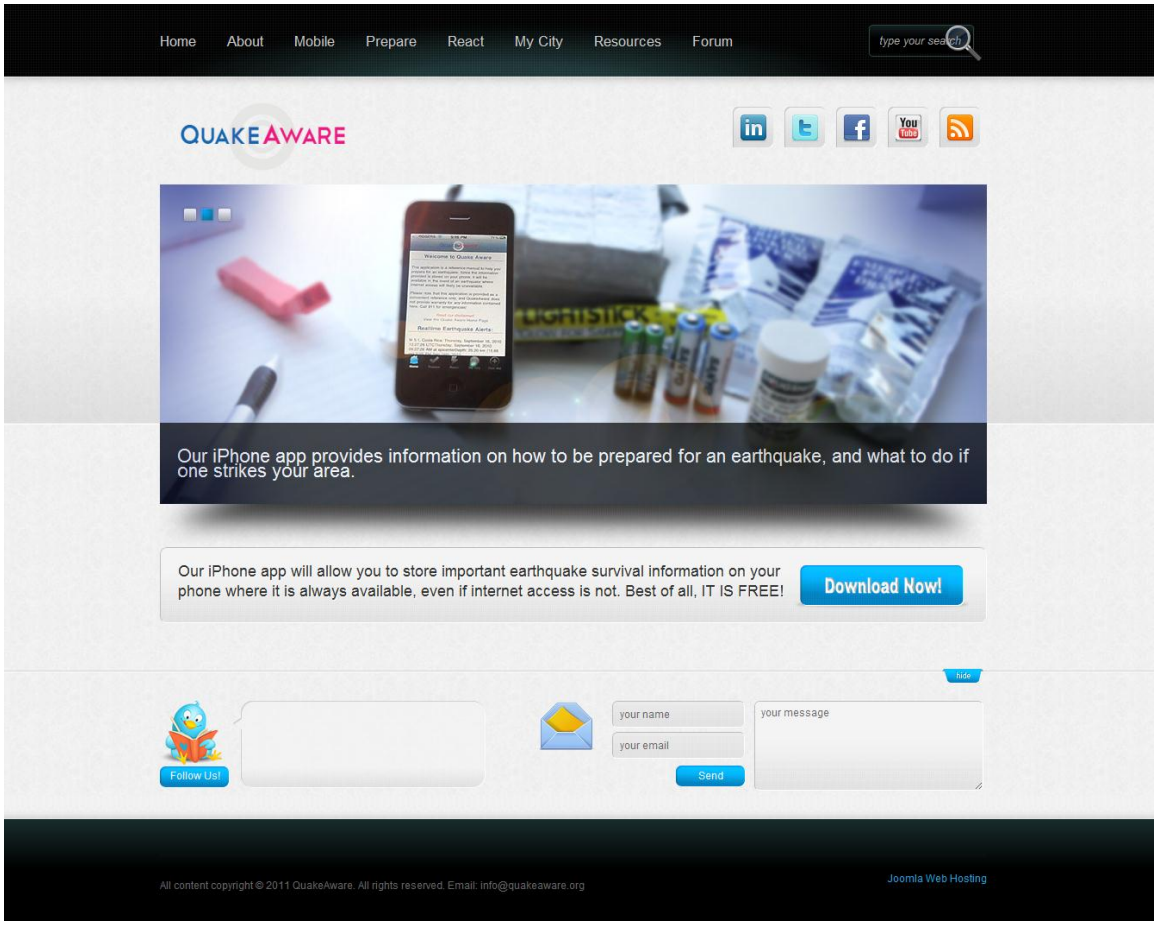
Figure 1: QuakeAware iPhone App

Source: Created by author

2.3.2 The QuakeAware.org Website

The QuakeAware web community (www.quakeaware.org) provides distilled content to what is currently available on public emergency preparedness websites, but with information aggregated in an easy-to-browse interface. In addition, our web community hosts a forum through which subject matter experts can post updates and interact with website visitors. The intent is to create a, "one stop shop" of earthquake information for visitors. Figure 2: QuakeAware Website, illustrates a screenshot of our website.

Figure 2: QuakeAware Website



Source: Created by author

2.4 Strategic Plan

We have a budget of $6,000 and aim to make a decision on whether to setup QuakeAware as a formal business organization or discontinue our products and services by the end of 2011. We need to plan strategically on how QuakeAware should move forward.

2.4.1 Strategic Options

The team is currently evaluating the following four options:

1. **Maintain the status quo.** Continue executing the current Quakaware business plan. The current business plan calls for fund raising to be our primary source of revenue.
2. **An orderly shutdown**. The MBA program brought the management team together. We have worked on QuakeAware for most of the courses throughout the program. With the courses complete, many members of the management team are wondering whether we should continue to invest our time and energies in QuakeAware.

3. **Pivot to a volunteer driven organization.** Take the approach of offering open source applications and tools. This could attract more technically sophisticated members to join our team and take the organization in a new direction.
4. **Maintain QuakeAware as a Freemium and pivot to the disaster recovery market.** This option would maintain the focus on emergency preparation and response and allow the organization to develop a new revenue stream in alignment with our mission.

These options were identified for consideration after several discussions with our key stakeholders including partners such as the GSC, the Beedie School of business, and members of the current management team.

2.4.2 Option Review

In order to select the appropriate organization and business model for QuakeAware, we analysed the factors driving customer demand and the competition. In terms of the demand, side customers expect most content for free. They are willing to pay for values add services from credible suppliers on an as consumed basis. Younger users in particular place a premium on ease of use and learnability. On the supply side, there is low intensity of competition in the emergency response industry. Government agencies are driven by social utility, politics and budgets. In comparison earthquake vendors and

niche Smartphone application vendors earn modest profits. As a result, QuakeAware needs to focus on tightly managing costs, creating an environment to attract skilled volunteers and tax efficient organizational structures to gain access to funding. The success criteria below are based on the abovementioned factors:

- the ability to generate revenues from existing streams such as internet based advertising on our website and fund raising;
- adjacent target segments that are profitable to pivot into;
- tax shelter considerations;
- organization structure that attracts volunteers;
- strategic relationships with partners,
- core competencies of the management team, and;
- Price point of free for loss leader products to grow customer base for commercial value add opportunities.

2.4.2.1 Option 1 – Maintain the Status Quo – Continue Executing the Current QuakeAware Business Plan

We originally developed a business plan for QuakeAware as a for profit organization. When we explored the potential revenue streams for our existing products, we determined that there were negligible revenue opportunities in the short run. Our revenue projections for advertising from the web are $100 for the entire year 2012 based

on the forecasts provided by our marketing director for web traffic (see appendix F for a detailed breakdown). There is also very little revenue potential to be gained from direct advertisers on our website as well. We could implement a hybrid-advertising model and use a combination of Google analytics to display targeted ads for the user and static paid for ads presented by user location. In terms of the smartphone application product, our team has given public commitments that we would not charge for the app. We received very pointed feedback from the GSC that any attempt to charge for the app, even with a premium version for corporate organizations, was not acceptable from their perspective. A potential opportunity they are willing to consider is to offer a branded version of the app from a corporate sponsor. For example, we could have a TELUS branded app for Vancouver and earn sponsorship this way. This idea has merit but will not provide sufficient seed money for a start-up business given our relatively small user base at this time (Just over three thousand users). We consider the GSC's support a key partner for our organization in terms of establishing our credibility and making contacts to new international markets with seismologists. Our recommendation in our original business plan was to hire a full time manager to evangelize our products, services, and mission. Without securing a government grant from USGS as outlined in our original business plan, QuakeAware is not a viable organization. The management team believe we need to develop alternative revenue streams to ensure the organization is sustainable. With revenue, we could attract talent and ensure sufficient funds to promote our mission. At this time, QuakeAware has not achieved these revenue objectives, nor do we forecast large revenues arising in the short term.

2.4.2.2 Option 2 – An Orderly Shutdown by 2012

Dedicating significant money and time to a start up with limited potential for reward is not appealing. We need to maintain interest in QuakeAware through other means. Many of the team members are willing to continue to support QuakeAware in a part time role. We truly believe that our products and services serve a niche that may not be profitable, but offers an important social utility, as more disasters will strike. We want to develop a sustainable organization that we can hand over to others to maintain and move forward. The key will be to build an organization that is capable of attracting and motivating volunteers. Team QuakeAware did enter discussions with members of the GSC about discontinuing our products towards the end of June. It was somewhat surprising and very rewarding to know that our GSC partner was very eager for us to continue our work. We made it clear that the organization needed to develop a sustainable business model. Should the business plan outlined in this document not win the support of the GSC senior management, the team would disband and hand over the source code of our application and website to the GSC or volunteers to manage as they see fit.

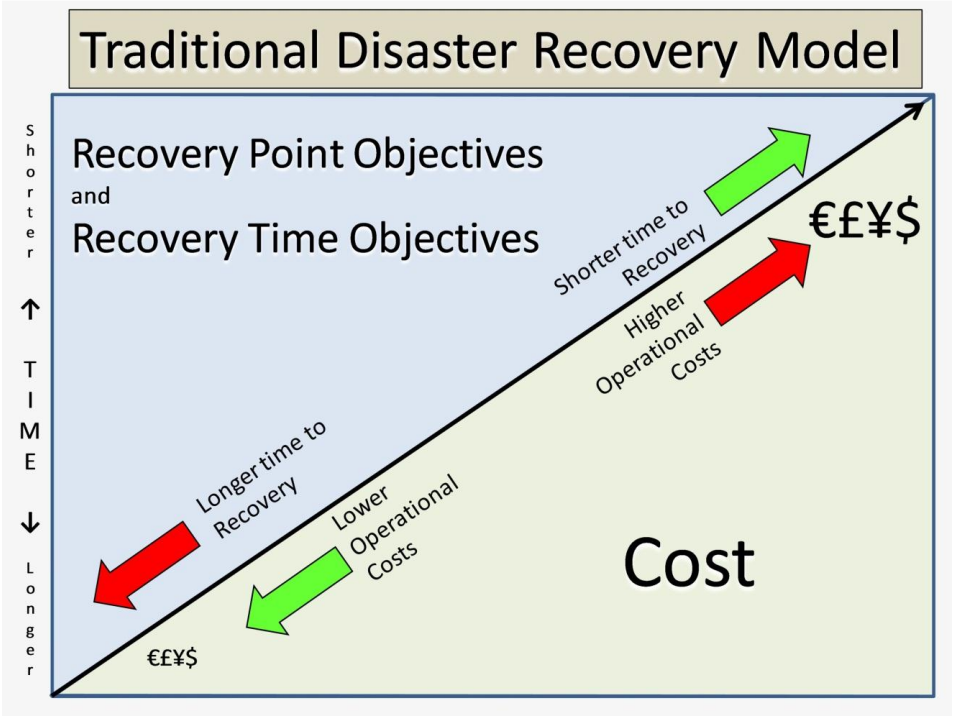
2.4.2.3 Option 3 – Pivot to a Not-For-Profit Organization Offering Open Source Applications and Tools

The management team recently posted the source code for our smartphone application on the web for others to develop copycat products in the event an earthquake strikes in a region where we cannot post an update quickly. Our vision is to develop a robust development framework to enable others to expand the functionality in our core products, and offer them in new regions. There are several key technical and organizational challenges we need to overcome to turn this vision into a reality. The first is we need to build out a continuous integration and automation framework to allow developers across the globe to check in new code and provide tools to ensure their changes do not introduce bugs into the core source code (As any errors or incorrect information could cost somebody their life in an emergency). The management team has yet to invest in procuring licenses to expose our defect tracking or source control systems to the public. Owing to the limited money available at this time, the team is only willing to invest in these tools once we source a large grant. It is vital that we recruit new developers and architects to the team with experience in this area before we make a long-term investment in our systems, toolsets, and (potentially) training. Dylan Marks, our director of development, is currently reviewing all our options, and plans to make a recommendation to the management team later in the fall. In short, we must become a true open source provider to achieve our long-term vision.

2.4.2.4 Option 4 – Maintain QuakeAware as a Freemium and Pivot to the Disaster Recovery Market.

The QuakeAware team have also explored potential options to pivot into adjacent markets using the core capabilities we have developed from QuakeAware. The team had considered expanding our product offering and evolving to become an emergency disaster company. The modular design of QuakeAware lends itself very well to expansion into other segments. Given the huge capital investments and interconnectedness of supply chains across the globe, organizations can no longer afford to adopt traditional disaster recovery techniques to emergency response.

Figure 3: Traditional Disaster Recovery Model



Source: "Developing Disaster Recovery Models with Cloud Computing" Savageau, (2010)

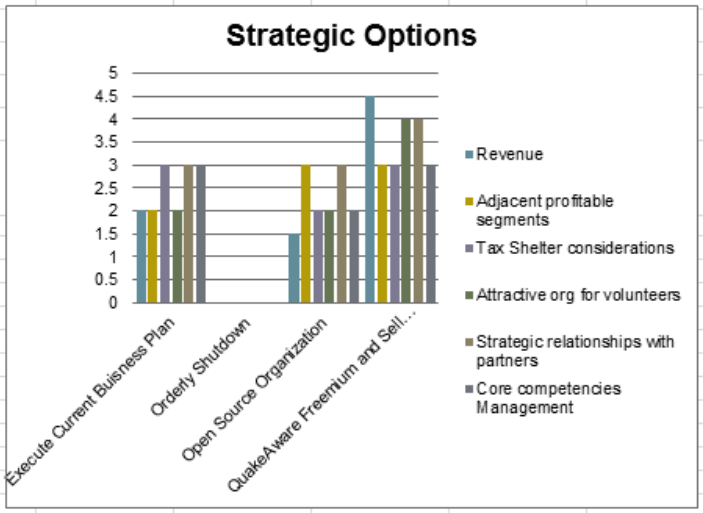
Preparis Inc. (an Atlanta, GA, based enterprise level emergency preparedness company http://www.preparis.com/) does an excellent job of serving this space at the enterprise level. They offer a broad range of products and services for crisis response ranging from terrorist incidents to natural disasters. Our research indicates that little competition exists in this segment to date, particularly in the SMB space in North America. We considered developing another product for profit. We would continue to distribute QuakeAware for free, but develop a more sophisticated application for organizations to provide to employees for emergency response in general. This approach would allow us to further improve the QuakeAware app but write off the development expense against tax and integrate the improved functionality into a for-profit application. The team explored the possibility of recruiting someone with experience in this industry to lead our management team. Not all members of the management team supported this approach though. Some believed that this was moving too far away from our original mission. This hybrid model could also make it more difficult to persuade volunteers to join our organization. From a commercial perspective, it seemed unlikely that we could persuade an experienced veteran to join the team without a more robust business model and more profitable growth prospects. Another suggestion was to explore the possibility of charging for apps in another disaster segment such as tsunamis, forest fires, flooding, etc. No segment appeared particularly attractive commercially. We risked undermining our brand promise if we tried to charge people for tools to react in one type of disaster but give away similar products and services free for earthquakes.

A focus on value rather than profit and giving back to society is more likely to keep existing members motivated and recruit new ones. A true Not for profit (NFP) focus would also make it much easier to raise funds.

Table 2: QuakeAware's Strategic Options

QuakeAware's Strategic Options

Factors	Execute Current Buisness Plan	Orderly Shutdown	Open Source Organization	QuakeAware Freemium and Sell Disaster Kits
Revenue	2	-	1.5	4.5
Adjacent profitable segments	2	-	3	3
Tax Shelter considerations	3	-	2	3
Attractive org for volunteers	2	-	2	4
Strategic relationships with partners	3	-	3	4
Core competencies Management	3	-	2	3
Total	15.00	-	13.50	21.50
Trends				
Scale: 1-5				
1: Low				
5: High				



Source: Created by author

The major event that influenced our recommendation was a recent meeting with a representative of the GSC. We view the GSC as our key strategic partner whose knowledge creates a genuine barrier to entry in our space. The purpose of the meeting was to determine how we could reenergize the brand, the team and recruit new members. We evaluated potential ideas that would not compromise GSC but deliver a reasonable revenue stream to fund QuakeAware's on-going operations. The following strategic recommendations were agreed:

- to take QuakeAware to a new level locally and internationally we need to hire a full time evangelist and fund raiser;
- our top priority is to hire an experienced fundraiser with NFP experience. Any expertise in disaster response and seismology would be a bonus;
- GSC have committed to helping QuakeAware write our grant request to the United States Geological Survey (USGS) in 2012. We hope to secure funding of at least $150,000;
- we are eager to widen our volunteer base to include Americans before we submit our grant request so we could promote their membership of our team , and;
- subject to funding, we need to evaluate the appropriate systems, tools and training to support an open source development platform, cost and budget for this in 2012.

There was also recognition that it is unrealistic to depend on a grant request from the USGS alone to guarantee the future of QuakeAware. Without the grant, there is only $6,000 to move the organization forward.

For QuakeAware to remain viable as a business we need alternative sources of revenue. The team proposed selling branded earthquake kits to support the organization and achieve our vision of providing customers a “one stop shop” to prepare for disaster. We propose to adopt a "Loss Leader" model, “according to the loss leader philosophy, make up for the losses on highlighted products with additional purchases of profitable goods” (Hillstrom, et al, 2002). QuakeAware will continue to deliver our website content and smartphone applications free of charge. Our expectation is that our customers and supporters will buy the branded earthquake kits we provide using a traditional business model. This direction needs sign off from senior management at the GSC.

In response, we reiterated our position that without a sustainable revenue stream to fund a full time manager the QuakeAware team and invest in new systems and tools to build out an open source platform the team is unlikely to continue. We will hand over the source code for our application and website to the GSC to manage as they see fit. It is important to note that in the longer term although the management team remains committed to QuakeAware, membership of the team is expected to evolve over time. Our technology and IT infrastructure is designed and implemented with transition in mind. Volunteers and other interested parties can continue QuakeAware’s services with minimal disruption. Our vision is that the online earthquake preparation community we nurture will eventually assume responsibilities for the daily operations and development

of QuakeAware and the transition to a government assisted, volunteer-drive organization with independent revenue streams will be complete.

In conclusion, we recommend that QuakeAware is maintained as a Freemium and that we pivot to the disaster recovery market. We believe that building an organization capable of attracting and motivating volunteers will ensure our success. We believe a Not for profit organization is best suited to this purpose. The remainder of the business plan is based on the assumption that senior management at GSC will allow their members to continue to remain actively involved in QuakeAware.

3: The Market

QuakeAware competes in a fragmented market with low competition intensity and no established leader. Our intention is to leverage the market research conducted earlier in the MOT program to expand QuakeAware's brand and become the de facto source of disaster awareness information for those passionate about earthquake preparation in our target markets. Having assessed the appropriate business structure best suited to promote QuakeAware's mission our focus now turns to the market we compete in. Assessing the market's needs and how it is currently serviced provides key insights for the management team to assess our product and marketing plan. We explain why we believe there is a niche for our product based on technology trends shaping our competitive environment. We then review the core capabilities of QuakeAware in light of these key trends. Our objective is to determine if we have a credible competitive advantage and if this advantage can be maintained. This inquiry is supplemented with a SWOT analysis. We review our internal strengths and weaknesses and the key opportunities and threats facing the firm. A competitive analysis is then performed to help the management team evaluate our competitive advantage relative to the competition. We also assess the likelihood that our key strategic partner (GSC) will introduce a competing product in the future. Finally, we identify the key markets segments we will target to grow our business over the next few years.

3.1 Industry Trends

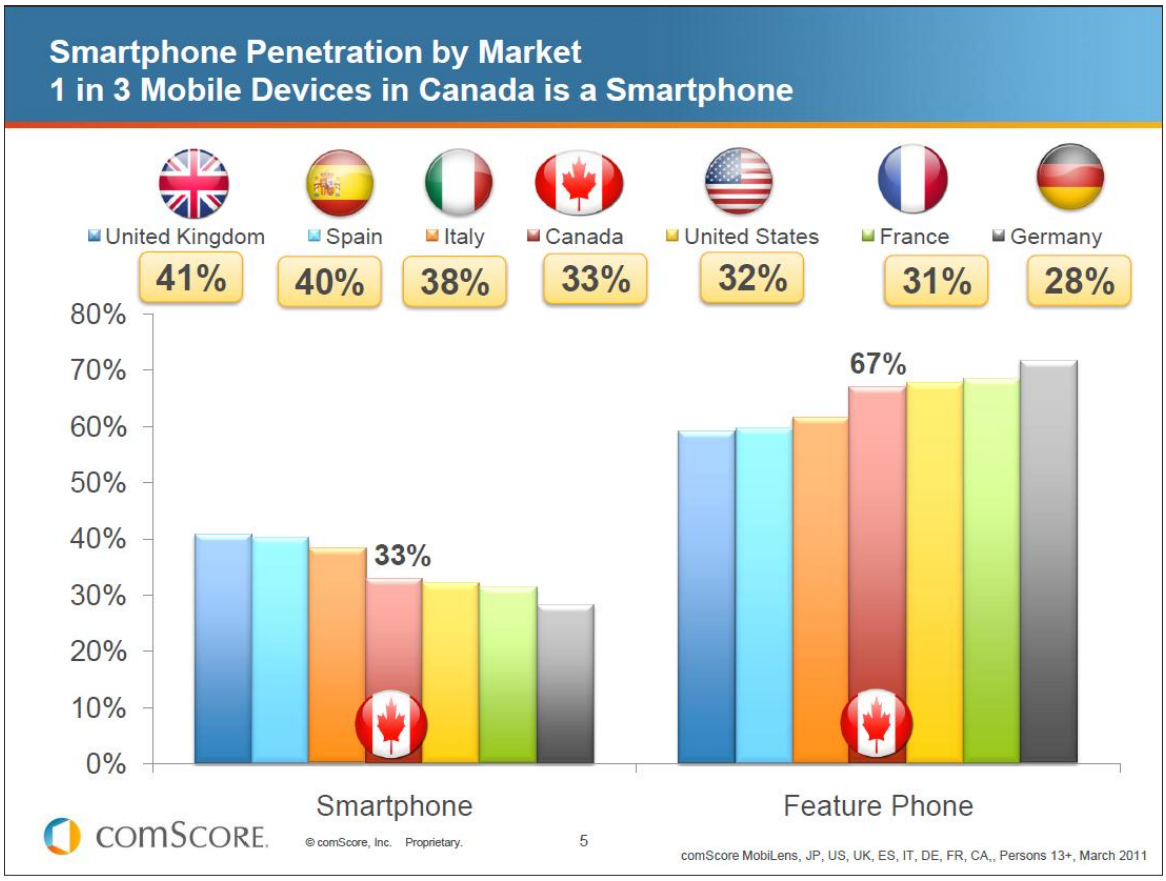
The emergency response industry is very fragmented with no dominant competitors and no vertical integration. Government agencies are responsible for citizen safety. Responsibilities are distributed across local, provincial and federal government. There is no global strategy to educate citizens as this not within the remit of national agencies. Agencies provide information to citizens to educate them. Citizens are expected to take the initiative to source emergency kits themselves. Emergency response kit vendors are regionally based and provide minimal information to help customers prepare for earthquakes. Smartphone application providers in this space tend to be one-dimensional, offering earthquake related information proactively based on feeds from government agencies or rudimentary advice based on publicly available information from websites. There is little competition and little incentive for incumbents to improve their limited offerings given the low potential for profit. We believe the market is ripe for disruptive innovation.

3.1.1 Technology Trends

Technology is starting to transform the emergency response industry. Established incumbents are not driving this change. New entrants like QuakeAware, concerned citizens or socially aware organizations like Google are driving the change instead. The "blur" created by digital technologies is intertwining geographies, products (like ours) and even private and business lives. Our research demonstrates that increasingly, smart

devices — portable tools that connect to the internet — have become an integral part of our lives. We believe the proliferation of smartphones greatly increases the likely adoption of our products. A smartphone device with our application on it is transformed into a potentially lifesaving device.

Figure 4: Smartphone Penetration by Market

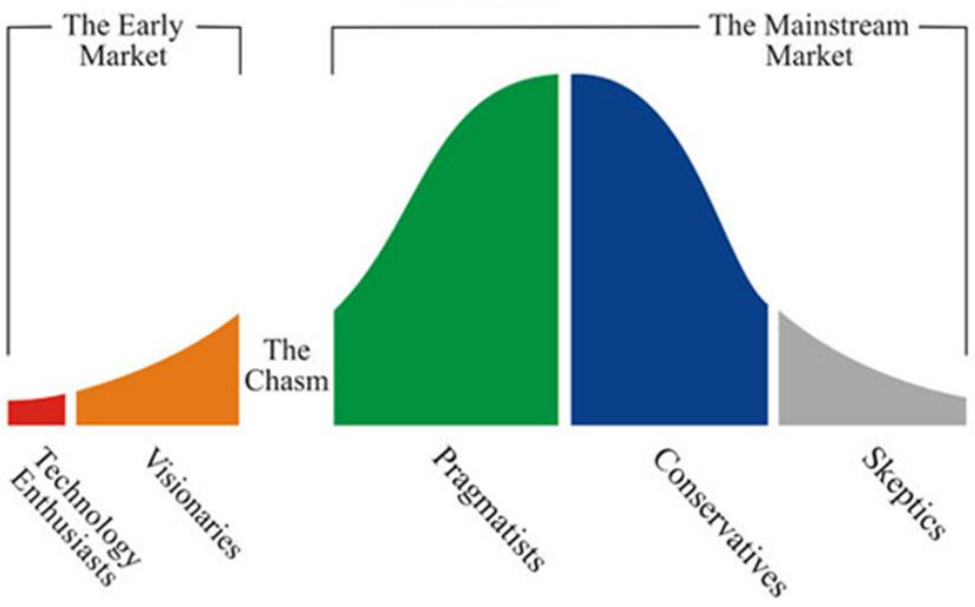


Source: MobiLens – 2010 Digital Year in Review - comScore (2011)

The data suggests we are rapidly reaching a tipping point in the technology life cycle of smartphones in terms of adoption. One in three phones in Canada is now a smartphone. In the above graph, we can see that this trend is happening across many of

the advanced countries across the world. The smartphone industry has certainly crossed the chasm and is likely advancing to capture the conservative market in terms of Geoffrey Moore's model (See graph below). Smartphones are a key complementary product for QuakeAware. Complementary products are products whose sales are positively correlated with those of the products we are selling. The greater the adoption of smartphones the larger the customer base for our smartphone application and website (which is optimized for mobile devices). The profile of the customers in the conservative segment aligns well with our early target markets. Conservative customers are typically interested in the whole product concept. Our ability to offer a "whole product" in terms of survival kits, provide current information on earthquake survival best practises and GPS coordinates to locate the user in the case of disaster is unique.

Figure 5: Crossing the Chasm



Source: Crossing the Chasm – Technology adoption life cycle - Geoffrey A. Moore (1999)

Figure 6: Top Acquired Phones in the U.S. and the European Union

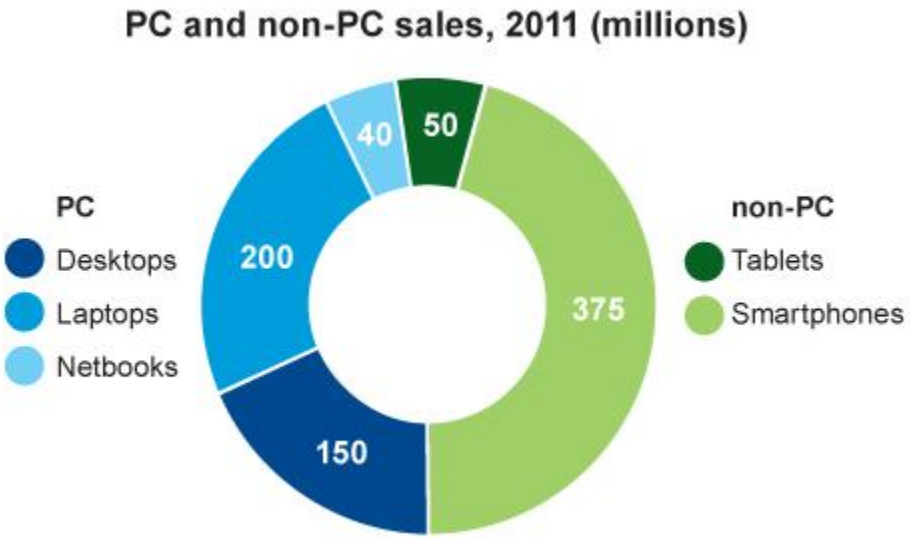
	Top Acquired Phones in the U.S. Source: comScore MobiLens, Jan-2010 to Dec-2010		Top Acquired Phones in EU5 Source: comScore MobiLens, Jan-2010 to Dec-2010
1	Apple iPhone 3GS	1	Apple iPhone 3GS
2	Apple iPhone 4	2	Apple iPhone 4
3	BlackBerry Curve 8530	3	Nokia - 5800 XpressMusic
4	LG - Cosmos	4	Nokia - 5230
5	Motorola - Droid	5	BlackBerry Curve 8520

comScore

Source: MobiLens – 2010 Digital Year in Review - comScore (2011)

Our expectation is that trend will continue to accelerate. In North America, smartphones will become the dominant device in the cell phone market over the next few years; for example, in 2010 four out of the top five cell phones purchased by Americans was a smartphone when purchasing a new cellular phone.

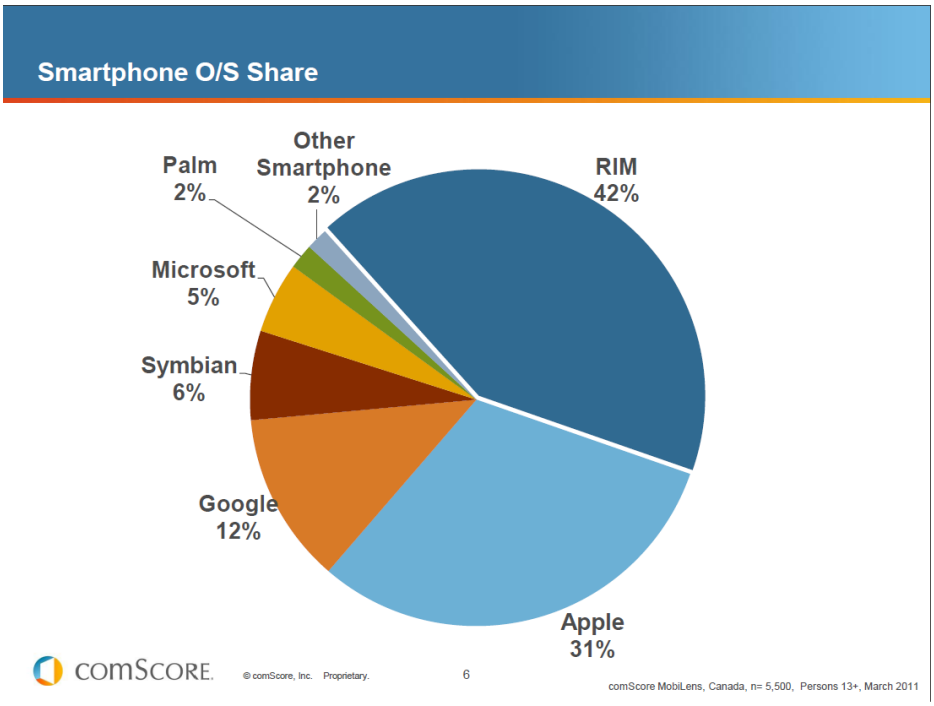
Figure 7: PC and non-PC sales in 2011



Source: 2011 Canadian TMT Predictions: A First Look - Deloitte Canada (2011)

Another tipping point in terms of technology is that more than half of all computers are no longer desktop or laptop computers. According to a study by Deloitte, "In 2011, more than half of computing devices sold globally will not be PCs. While PC sales are likely to reach almost 400 million units, Deloitte's estimate for combined sales of smartphones, tablets and non-PC netbooks is well over that amount" (Deloitte, 2011). The industry is evolving from a world of standardized PCs to a more heterogeneous environment. Although smartphones are the leading device, there has been a noticeable increase of data consumed by tablets across advanced economies. QuakeAware aims to build a decisive lead in developing a website and community optimized for these new devices in our niche of earthquake preparation over the dated websites from government agencies.

Figure 8: Smartphone O/S Share



Source: MobiLens – 2010 Digital Year in Review - comScore (2011)

Currently, three operating systems (OS) have emerged as dominant platform for smartphones and tablets in Canada and the rest of the world; they are Apple's iOS, Research in Motion's Blackberry OS, and Google's Android OS. By the end of 2011, no single operating system on smartphones and tablets will have a dominant market share. Some will have more than a 20% share (Apple iOS, Google Android), but no single player will become the de facto standard.

3.1.2 Emergency Preparedness Trends

The recent Japan earthquake and tsunami highlighted the need for governments and members of the public to be properly armed with the knowledge and resources to react in the event of an emergency. Social media has proven helpful for people to locate information and connect with friends and family impacted by the earthquake (e.g. Facebook and Twitter status updates, and the Google People Finder). Newspapers and television have published stories about smartphone users referencing an app for life-saving information in time of need. Accordingly, the government has recognized the archaic nature of relying on traditional media and paper-based emergency response systems. Unfortunately, most government agencies do not have the budget to keep up with the latest technology trends. Most modern commercial websites typically have mobile-friendly formats. In light of current budget constraints for governments across the globe many seismologists and concerned government employees are exploring alternatives like QuakeAware or Twitter to move public safety updates and alerts into

social media channels. Last year in Nature Geoscience's article 'Earthquake Twitter', Paul Earle (2010) stated, "Earthquakes are the ultimate collective experience. The magnitude 7.9 earthquake near Wenchuan, China in 2008 generated perceivable shaking from Chengdu, China to Taipei, Taiwan. Over one hundred million people felt it within minutes. Twitter and other social-networking services enabled people affected by this earthquake to immediately broadcast short accounts of their experiences. Twitter messages, also known as tweets, were some of the first publically available personal accounts of the earthquake's impacts, brought to the world by a service better known for keeping up with celebrity antics than for documenting disasters" (Earle, 2010). Our strategy is to become a trusted volunteer advisor to the GSC for matters that address social media, website forums, and smartphone applications while leverage our capabilities (identified below) to become a key enabler for them to promote their message using the latest technology trends on the web and mobile devices.

3.1.3 Online and Social Media Trends

Content has long been considered the backbone of the online world; yet so often is context overlooked. As more and more sites are launched, the battle to gain ground in Google search is getting ever harder. Balancing Search Engine Optimisation (SEO) and relevant and engaging content is pivotal for Quake Aware. Although government agencies will remain the de facto standard for now in terms of the first resource users will go to for earthquake information, we aim to build a loyal following over time and become

the new trusted advisor in this space. For example, the cable networks are no longer the default source of news for many citizens today as many begin to search for more balanced commentary on the blogosphere. We aim to differentiate our services by producing new content faster in a more user friendly format than the competition.

Media focused marketing and channels such as YouTube, etc. provide a very powerful tool to take marketing to a new level. Companies with large budgets are moving marketing to this medium because this forum requires minimum concentration, while providing maximum entertainment and absorption of key information. Most phones introduced to the market are web media enabled. Our research shows that 44% of users are using their mobile devices to consume information. We plan to add content relevant to our online community on our YouTube channel such as coverage on earthquakes as they occur or documentaries on how to prepare and react.

Online marketing techniques become more sophisticated as new tools provide better data tracking capabilities than ever before; organisations have been focusing specifically on website analytics to analyse market appeal. QuakeAware's integrated website, smartphone, YouTube, Facebook, and Twitter channels provide an excellent social media marketing framework to truly determine how successful our marketing campaigns have been. We have a significant advantage over our competitors in government in this regard.

3.2 Core Competencies

None of the competencies identified above are unique to our team. We believe that smartphone and website development in combination with access to trained seismologists provides a sustainable form of competitive advantage. We outline our technical capabilities and the platforms we support later in this chapter. In comparison, large providers like government agencies have the domain expertise but lack the technical capability and funding to invest in the next generation products that we provide. One of the big reasons that members of GSC have joined our board of technical advisors is that we can deploy updates and products in weeks. In comparison, it would take the GSC years to roll out competitive products due to bureaucracy, lack of funding and buy in from older members of the organization who do not see the value in smart phones or tablet devices. This is why we are confident that the possibility of a government agency releasing a smartphone application in the near future is extremely limited. Our objective is to reach out to progressive seismologists in agencies across the world and ask them to join our team. We are already in discussions with seismologists in the USA, New Zealand and Australia in this regard. Their feedback is that government agencies in their countries face severe funding shortages in the next few years due to budget cuts because of challenging economic conditions.

The vendors of survival kits have even less technical expertise and are unlikely to have access to experienced seismologists to offer competing products from a whole product concept. As discussed earlier our competitors in the consumer space for smartphone applications lack the domain expertise in seismology to compete against us.

3.2.1 Smartphone Application Development Environment

QuakeAware is compiled and developed using, 'Titanium' from Appcelerator Inc. (http://www.appcelerator.com/). This Integrated Development Environment (IDE) gave our developers the ability to build code and see the effects of that code on a native iPhone emulator (an iPhone environment that exists on the personal computer), before going through the lengthy process of debugging and compiling the code for use on an actual iPhone. One of the key differentiators for Titanium was the fact that Appcelerator promised the future support for both the iPad and Android operating systems later in the year, which aligned well with the huge adoption of these devices in the market.

We adhere to the following principles designing and developing our app:-

a) Ease of Use & Superior Functionality

Although a plethora of smartphone apps have been introduced focusing on earthquakes after the recent events in Christchurch and Japan; our solution remains the only one designed to help users both prepare and react in the event that one strikes. We provide information on earthquakes around the world, along with safety, first aid, and

location-specific emergency contact information, in an intuitive and pleasing format based on Apple's user centre designed best practises.[1]

- our app is unique. We only display the most critical information with a focus on ease of use based on feedback from experts, and;
- our app is able to display location-based data that leverages smartphone technology. This has a huge potential to coordinate disaster response efforts in urban centres, subject to agreement with the respective government agencies. For example, we are currently in negotiations with the city of Vancouver to input these centres to help citizens move quickly to the nearest response centre if disaster strikes.

b) Platform Support

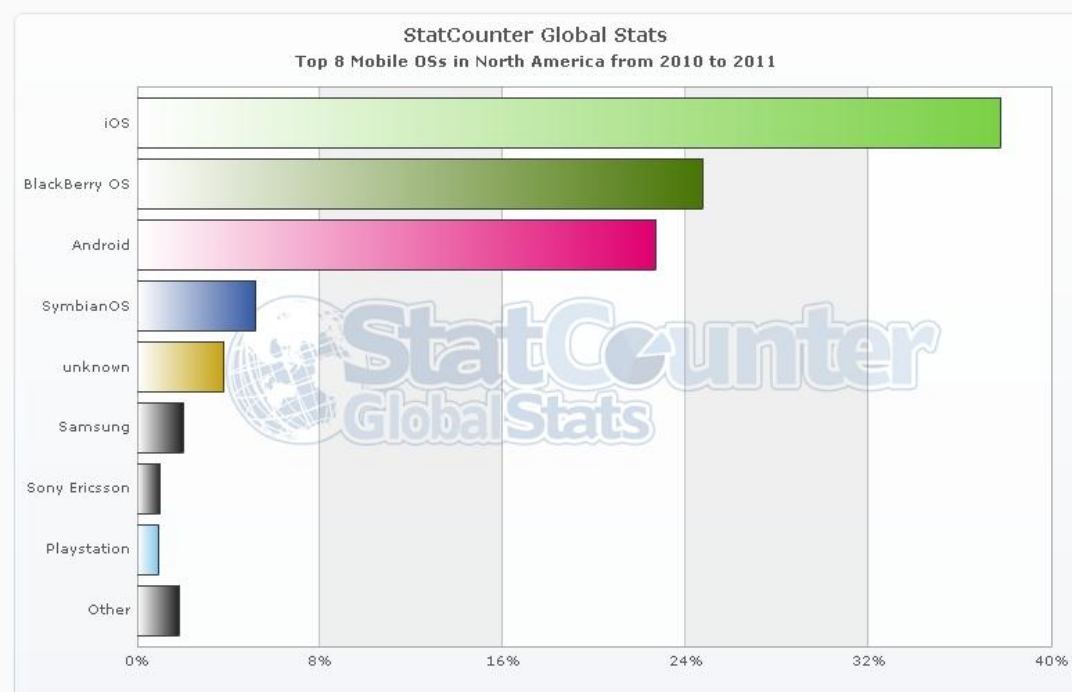
Our smart phone applications must run on all the major platforms. At present, these are Apple, Android, RIM & Windows. Although Apple's iOS and Google's Android currently lead the market, government agencies typically use the Blackberry platform due to best-in-class security and early adoption. Therefore, to leverage government support to create network effects, we will focus on launching a blackberry version of our app as quickly as possible. Moreover, vendors such as RIM and Microsoft are providing generous incentives and free use of hardware to accelerate app development on their platforms. We aim to take first mover advantage and launch our applications in their app stores where competition from other earthquake apps is less

[1] Apple Design Best Practices:http://developer.apple.com/library/mac/#documentation/UserExperience/Conceptual/AppleHIGuidelines/XHIGIntro/XHIGIntro.html

likely in the short run. The Blackberry and Windows user base in particular are under-served in terms of apps available to them. As discussed in the technology trends section, we do not believe a dominant design will emerge in operating systems. Therefore, QuakeAware will support the top four carriers. No government agencies or direct competitors in smartphone applications are likely offer their product across as many platforms as we will.

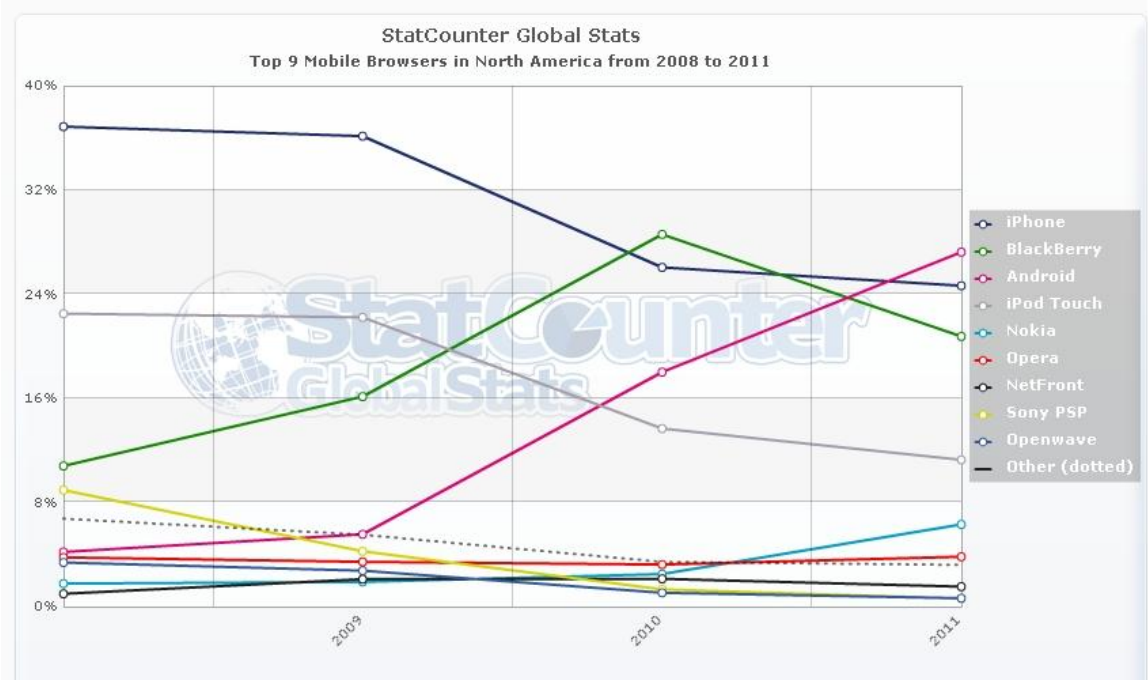
The following graphs show the rankings in terms on market share of each mobile platform as well as show their trends over the last four years. The first two graphs are indicative of North America, whereas, the last two are relative to global trends.

Figure 9: North American Mobile OS Adoption Currently



Source: Top 8 Mobile OSs in North America from 2010 to 2011- StatCounter (2011); reprinted with copyright permission from GlobalStats.

Figure 10: North American Changes in OS Adoption Over 4 Years



Source: Top 9 Mobile browsers in North America from 2008 to 2011 - StatCounter (2011); reprinted with copyright permission from GlobalStats.

3.2.2 Website Development

We originally developed our website using Dreamweaver from Adobe System Inc. (http://www.adobe.com/); however, after nearly a year of use, we realized that maintaining the QuakeAware site was proving to be increasingly demanding. To reduce maintenance and increase our customization capabilities we chose the WordPress.org platform. Our website runs on all major web browsers, with a mobile-friendly version designed for easy viewing on smart phones and tablets. Migrating current government earthquake websites is a multi-year project in many countries. Many government agencies acknowledge that their websites are out-dated and contain too much information

but do not anticipate the ability to improve them in the medium term due to budget constraints. Website development in our niche is an important competitive advantage for us. We are likely to enjoy a significant lead over the government from a technology perspective for the near future.

We adhere to the following principles designing and developing our website:

a) Ease of Use & Superior Functionality

We aim to build the first online community for seismologists and those passionate about earthquakes in the world. There is no communications infrastructure in place to allow academic or seismologic researchers across the globe to share their experience and publish findings to the public; we will provide this platform through our web community, which will make our website unique. We show only the most critical information with a focus on ease of use based on feedback from experts.

b) Social Media Integration

Our Marketing director Connor Keppel has extensive experience in online marketing and social media. Our strategy is to use all technology platforms (Twitter, LinkedIn, Facebook and YouTube) to drive traffic back to our website. By leveraging these channels to promote our brand, we aim to become the trusted online content provider of choice. Connor has established detailed key performance indicators

leveraging the robust metrics available in our integrated social media framework to help us achieve our vision. We will be able to demonstrate the Return on Investment (awareness) of our marketing campaigns to government agencies or other groups who would like to collaborate with us in the future. This ROI will be measured through our application download numbers, as well as unique visits to our website and posts to our forum. We will benchmark our campaigns using metrics from our social media platforms as outlined in our marketing plan. The details are given in the Promotion Strategy on Page 49.

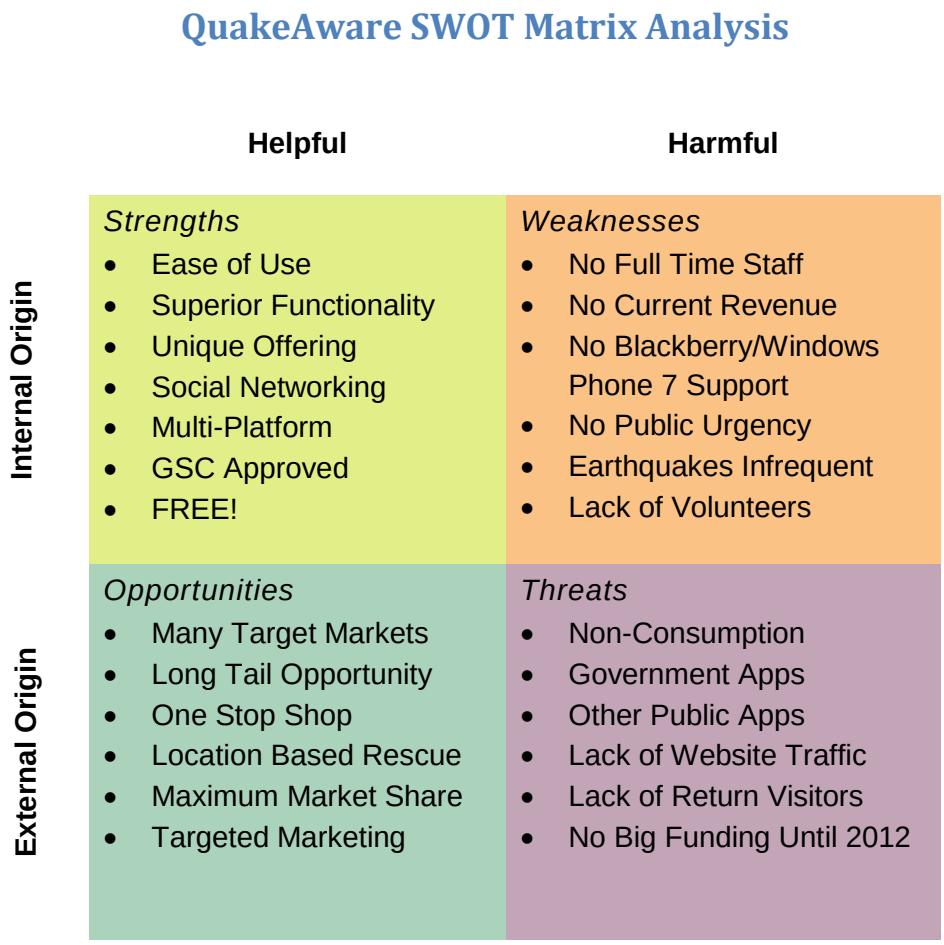
3.2.3 Conclusion

The core capabilities of the QuakeAware team is in terms of our smartphone application and website development combined with domain expertise in seismology. Our strategy to leverage industry standard platforms enables us to offer compelling products and services to serve the emerging trends in emergency response faster than our competition. QuakeAware's integrated technology and social media marketing framework offers partners in the government agencies an invaluable channel to promote their mission. We have the ability to capture the metrics to prove this.

3.3 SWOT Analysis

The following SWOT diagram shows the internal firm environment as characterized by the strengths and weaknesses of QuakeAware in developing and promoting its products, and the external opportunities and threats faced by QuakeAware in generating values and revenues within the next 12 months.

Figure 11: QuakeAware SWOT Matrix Analysis



Source: Adapted from "SWOT matrix for describing security posture" by Leonard Zeltser, ISC, (2008).

QuakeAware's strengths are that our application and website is simple to use. We deliver content and functionality that is unavailable in competing applications in our space. This offering is unique as the distilled information focuses specifically on preparing for, and reacting to the event of an earthquake. By leveraging social media, collaborating with seismologists, and offering QuakeAware free we aim to maximize adoption of our products. QuakeAware's application is developed to be operating systems agnostic to enable us to easily adapt to new products on the market.

QuakeAware's weaknesses stem mainly from a lack of funding and labour. We have a challenging revenue model, which makes finding new sources of capital difficult. We have limited revenue potential form our existing free products and services. This lack of revenue restricts our ability to fund marketing campaigns. We risk being 'blitzed' by a commercial competitor entrant. Without funding, we have not been able to hire the developer necessary to release our application for the Windows 7 and BlackBerry operating systems. Non-consumption is the major concern for QuakeAware. There is no urgency for the public to adopt our services, as earthquakes are not an immediate threat in many people's minds as earthquakes are not frequent. This greatly limits the ability of our products to go viral.

This being said, there are many opportunities for QuakeAware and there are many untapped markets available worldwide. We compete in a market with low competitive intensity. We find no direct competition on app-stores for any smartphone vendor. There are no dedicated communities that cater to those interested in earthquakes across the globe; this may be a profitable "long tail" opportunity for us. As earthquakes occur worldwide, QuakeAware is able to leverage our social media-marketing framework and

forum community to raise awareness with a targeted marketing campaign and improve our offering from lessons learned in each recent earthquake. We can also use the location-based technologies that are becoming standard on most smartphones to link rescue services with those requiring assistance with a location-based signal tracking add-on to the application. From the website and from our application, we can also sell branded earthquake kits to provide a one-stop shop experience for our user base.

The largest threat to the success of QuakeAware will continue to be a lack of consumption or use from the public. Despite the substantial free publicity from many media channels on a regular basis, QuakeAware has been unable to sustain the return visitor traffic and acquire the new users necessary to make our offering viral. If we do not generate enough activity on our website or attract enough users to develop a reliable revenue stream there is a remote possibility we may face competition from local governments or other public entities developing similar applications in the long run. A substantial source of funding for us is in the USA with the USGS. However, the earliest we could expect to receive those funds is in 2012, which will mean that we would be unable to hire a full time manager to run QuakeAware daily operations next year. Without a full time manager, the founders may not be able to seek out new funding opportunities and promote the vision of QuakeAware.

3.4 The Competition

We define our product market boundary in terms of geography as the English speaking regions across the globe that are likely to be impacted by earthquakes. In terms of substitutes for our products, there are two primary segments, emergency preparation and response websites and survival kit vendors. We compete with others in the emergency response space for attention and money. Competitors include but are not limited to government agencies, education and non-profit groups, earthquake preparedness companies, smartphone development organizations, and online communities.

3.4.1 Non-Consumption

The biggest barrier in this nascent market remains non-consumption. Most citizens are apathetic in terms of earthquake and emergency preparedness. Team QuakeAware cannot hope to resolve this systemic issue alone; although we list the government agencies as potential competitors, there is recognition by both Government and QuakeAware that forming a strategic alliance in Canada is beneficial to both parties. We hope to leverage this relationship to build similar alliances with the seismologist community in each new market we target.

3.4.2 Government Websites

Government agencies are typically in charge of the broad responsibility of citizen safety. Local, provincial and federal levels of government distribute various responsibilities across the various organizations. The government is a trusted advisor in terms of emergency preparation by the vast majority of citizens. These agencies provide online and written content to the public and utilize various communication channels to deliver to citizens, such as mail, television, and radio. One example of such agency is Geologic Survey of Canada, which uses 'getprepared.ca' to deliver content.

Although such agencies have access to great resources, their websites are a classic example of overshooting the market by bombarding their readers with an overabundance of information. There are far too many pages with far too much content for the average citizen to read. We believe that QuakeAware's jobs-to-be-done[2] approach, guided by simplicity and ease of use modular design, provides a solution that can become a consumer hit. Our ability to leverage web 2.0, new technology and the latest web marketing techniques is another advantage. As discussed in section 3.1.3 we aim to surpass the government agencies over time as the trusted provider of up to date information on emergency preparation. We want concerned citizens to view QuakeAware as their primary trusted advisor for emergency preparation over time. We have discussed in section 5.4 why we believe it is unlikely that the GSC will change from a strategic partner today and forward integrate to become a competitor in the future.

[2] Anthony Ulwick, http://en.wikipedia.org/wiki/Anthony_Ulwick

3.4.3 Other Smartphone Applications

Apps developed specifically for earthquakes were launched to serve consumers concerned about earthquakes across the globe. Some charge a modest fee while other basic apps are free. The current apps on the market tend to be one dimensional, offering a GPS type service or feeds on earthquakes. This is likely because these organizations do not have access to trained seismologists to provide features that are more advanced. Although we can offer a combination of both features and more, the key to our success is to limit the information on the phone and keep it as simple to use as possible. We see no strong direct competition from any current participants in this space.

3.4.4 Disaster preparedness Companies

A key decision in each geographic market we serve will be to select a disaster preparation company to become our selected OEM supplier for kits. Disaster preparedness companies typically focus on the manufacture and distribution of survival kits. If we become successful however, competitors not selected to collaborate with us may be attracted to expand their capabilities by copying our products and services in-house, or outsource to promote competing solutions in order to raise their own brand awareness. The survival kits market is highly fragmented. Typically, a number of smaller local vendors serve their local markets. We believe these smaller organizations would find it hard to compete with our superior marketing, technology and support network.

3.5 Target Markets

The management team has identified four segments that we will target to focus our marketing efforts on in the short term. We identified the consumer segments based on feedback from market research performed by GSC. Their marketing campaigns primarily target young mothers with children. We also decided to target groups and individuals mandated to have disaster kits (companies with provisions for disasters in their standard operating procedures, and organizations dealing with children where these kits are mandatory). The emergency preparedness community segment aligns well with our strategic vision and desire to partner with stakeholders in this group. We will target these segments with different products, pricing and communication channels to maximize our marketing impact and reach.

3.5.1 Emergency Preparedness Communities

For various provincial and local government-run institutions (e.g. Geological Survey Canada, Provincial Emergency Program), the smartphone app, online community and website will serve as an extension of their outreach and awareness program efforts. By encouraging concerned citizens to better prepare for earthquakes by purchasing earthquake kits to help them survive for several days we are providing an important public service that will save lives. These agencies do not have the core capabilities to develop these technology solutions themselves. Their expertise lies in traditional research. They are eager to collaborate with QuakeAware to deliver content

using new technology to better connect with citizens. We aim to provide an online forum where citizens that actively support the government programs can connect with each other and share information. Our goal is to have subject matter expert's blog on topics ranging from earthquake education to community engagement, to ensure the community is active and worth supporting.

3.5.2 Parents

Feedback from the government agencies and our own research suggest that after emergency preparedness evangelists, parents (mothers in particular) are our most important demographic. The highest priority for parents is the safety of their children. Parents with smartphones will be able to download the QuakeAware app. Both the website and mobile app will have information on earthquake preparedness and survival tips, and a focus on keeping the family safe. The "Family Plan" feature encourages and guides the family to formulate an emergency action and contact plan, which can be printed or emailed as a reminder or to share with others.

We have explored the possibility of leveraging the capabilities native to Android platforms and Google to allow registered users of QuakeAware to connect with friends and family lost in an earthquake. We could also update their location directly to our website for missing persons if they allow us to connect with their accounts. We are considering designing a portal similar to the Google Friend Finder in Japan or using an API to send information from QuakeAware to Google directly (http://japan.person-finder.appspot.com/?lang=en).

QuakeAware provides free content to help parents educate themselves about and prepare for earthquakes. By encouraging concerned parents to effectively prepare for earthquakes with kits to help them survive for several days we are providing an important public service that will save lives.

3.5.3 Day-care and Elementary School Teachers

This segment displays many of the characteristics of preparation and proactive planning for the protection of children in a professional environment.

QuakeAware's website and mobile app will contain information for teachers to educate their students on earthquake preparation and survival. In addition, there will be an optional section for teachers to record student's information, such as students' and parents' names, photos, and contact details. In case of emergency, teachers can match students to parents based on the stored information. By encouraging concerned teachers to effectively prepare for earthquakes using disaster kits, which will help them survive for several days, we are providing an important public service that will save lives.

3.5.4 Organizations with High Safety Awareness

QuakeAware's services complement these organization's existing resources for high safety awareness in a much more meaningful and accessible way. Our website and smartphone application allow employees to learn about earthquake preparation and response. Many companies provide employees with a smartphone, creating an excellent opportunity for QuakeAware to become their safety ambassador. By encouraging concerned organizations to prepare for earthquakes with large kits to help their employees survive while travel or communication disruption occurs, we are providing an important public service that could save lives.

4: Marketing Plan

Our marketing plan sets out the management team's objectives, tactics and key performance indicators the management team will leverage to develop the QuakeAware brand. Our vision is to become the trusted advisor to communities across the globe and help them prepare and react in the event of an earthquake. In Chapter 3 we have explained how the management team views the industry and how we plan to differentiate ourselves against the competition. In Chapter 4 we discuss how we aim to successfully promote and grow our business. We discuss our hybrid distribution model to service our target markets. We celebrate some of the excellent publicity we have received to date to raise awareness of our product in the lower mainland and explain how we aim to capitalize on future emergencies to promote our message and services. Finally, we outline our proposed customer service policy once we formalize relationships with key strategic partners.

4.1 Commercial Product

We have outlined the existing products in our portfolio earlier in this document. We hope to build a substantial customer and evangelist base and monetize this user base through future recurring revenue with the sale of earthquake kits to our target markets. We will offer a variety of kits to our customers to target different segments and meet their needs.

We offer a starter kit for $100 targeted towards the individual to be placed either in their automobile or in their garage in the case of an emergency. This will have all the items needed for a single person to survive for 72 hours.

For families, we have a medium sized kit that will sustain two adults and a child for 72 hours at the price of $200. This kit is intended to remain at the home.

Finally, for companies, government organizations, and childcare facilities, we have the 'Cadillac' of kits; which contains an exhaustive list of resources available to maintain up to ten people for 72 hours at the price of $500.

4.2 Pricing

We propose to use our smartphone application as a loss leader to attract new customers to our website. We aim to provide regular new content free of charge to encourage customers to return to our website on a regular basis. We will monetize our user base by selling branded earthquake kits on the website using a web store. We are in

negotiations with Braidner Survival Kits Ltd. of Vancouver BC (http://www.preparecentre.com) to provide a number of earthquake kits targeted at each of our target segments.

We estimate that profit margins for our kits will fluctuate over the next five years; however, we are aiming to maintain a target gross margin of 10% after factoring in the associated costs of rebranding, maintaining the product channel, and any costs associated with the hybrid marketing plan. As such, the unit contribution margin for the 'Starter kits' is $10, $20 for the medium kit and $50 for the 'Cadillac Kits'.

We offer three different kits aimed at capturing three separate market segments. The first is a single person starter kit, which consists of a 10-pound, 25-litre backpack containing everything that a single adult would need to survive for three days. The second kit is a 15-pound, 25-litre backpack and portable emergency kit designed for families and will provide enough supplies for a family of four to survive for three days. Our third offering is the 'Cadillac' of all kits; this worksite emergency kit contains everything that up to ten employees and customers would need to survive for three days.

The following is a table of the contents of each kit:

Table 3: Survival Kit List

Survival Kit Items

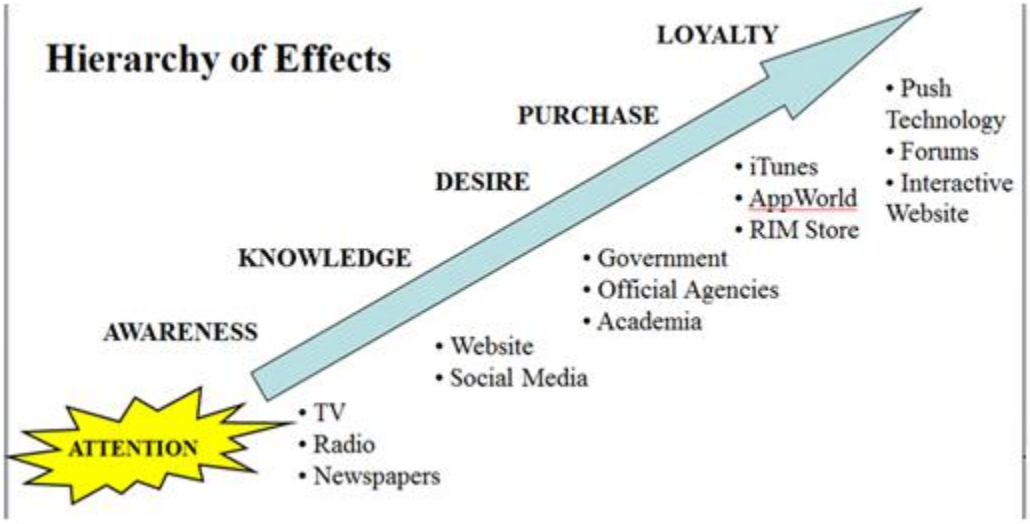
Survival Item	Small Kit	Family Kit	Worksite Kit
12 hour Lightsticks	2	6	12
Emergency Blanket	1	5	10
Garbage Bag 26x36	1	5	10
Coreless Toilet Paper	1	5	10
Emergency Whistle	1	3	6
Army Knife 7 function	1	1	2
Dust Mask N95	1	2	4
Leatherpalm Workgloves	1	2	4
Industrial Flashlight	1	1	2
Alkaline D Batteries	2	2	4
Waterproof Matches	1	2	4
Emergency Poncho	1	2	4
Instant Cold Pack	1	2	4
Handwarmers	2	2	4
Unscented Sanitary Napkins	2	2	4
First Aid kit 50 items	1	1	2
Earthquake Survival Manual	1	1	2
Food Ration 3600Kcal	1	5	10
Emergency Drinking Water pouches 4oz	12	50	100
Adhesive Bandages		12	24
Sterile Gauze Pads		2	4
Antiseptic Towelettes		3	6
Candles			10
Windup AMFM Radio			1
Tarp			2
Rope			2
Water Purification Tablets			10
Water carrier			1
Safety goggles			2
Duct tape			2
Crowbar			1
Sledgehammer			1
Pliers			1
Screwdriver			1

Source: Created by author

4.3 Promotion

To date our smart phone application has been our key promotional tool that makes us so attractive to government agencies, media organizations and consumers. The team took the initiative to deliver the right product in the right place at the right time. In the past two years there have been a series of high profile earthquakes in Haiti, New Zealand, China, Chile and Japan (amongst many others) which received worldwide media attention We have surprisingly high brand awareness for our smart phone application in the Lower Mainland during this period. Our smartphone application received national TV coverage on CTV and extensive local coverage on CBC, local radio and newspapers for several months. We did not have the capability to track marketing metrics at this time but we received regular feedback from local citizens across the lower mainland praising our work. Our application was downloaded approximately two thousand times during this period despite having no advertising or marketing budget.

Figure 12: Hierarchy of Effects

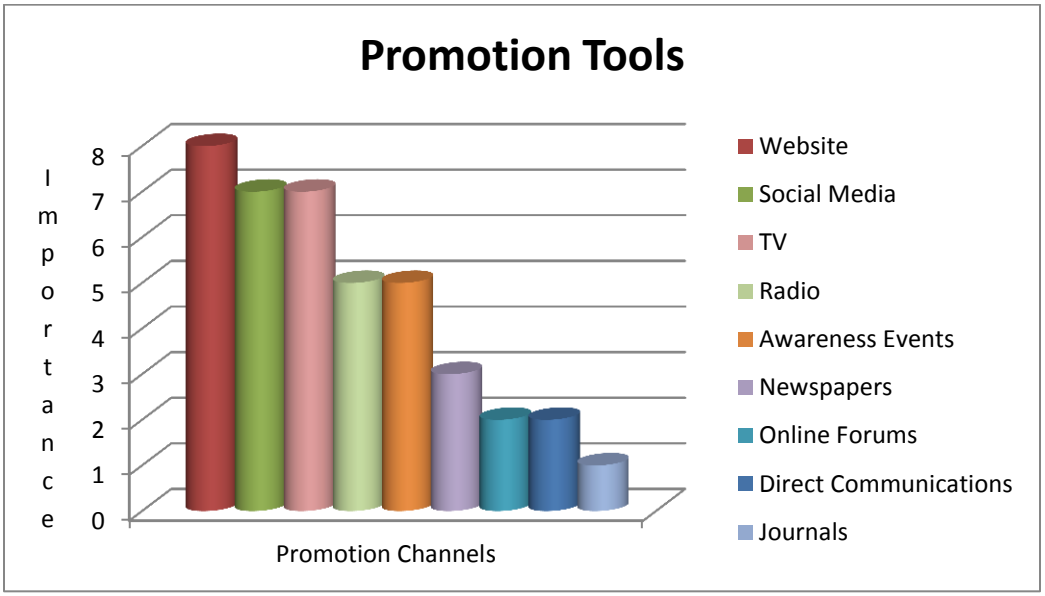


Source: Adapted from Slides - BUS 754 Marketing - Peter Mitchell (2011).

The nature of earthquake media coverage is that there will be occasional spikes in attention that team QuakeAware must capitalize on as future tragedies unfold. We hope to feature in future media discussions and become a trusted provider of content for local and national media. Our ability to react quickly to requests for interviews was critical in the past. We aim to become a trusted advisor and regular point of contact for media outlets that need an expert to speak on TV or radio at short notice. Alison Bird will be the face of QuakeAware in media interviews in the future. Alison is also evangelizing our product at industry tradeshows and seismologist events. For example, she is presenting a paper at the American Geophysical Union conference in December entitled "*The use of social media and smart-`phone applications to disseminate natural hazard information by the Canadian Hazards Information Service*." Most of the authors of this paper are either technical advisors or members of the management team at QuakeAware (A.L. Bird, M. Ulmi, C. Majewski, K. Hayek, R.T. Cole and D.R. de Paor). We are building out a planned communication framework to maximize our chances of media

coverage in future emergencies. Our website and social media tools are also promotion channels for us in terms of content delivery and advertising. We leverage "Social Media" groups such as Facebook, Twitter, and LinkedIn to promote our website and online forum. These communities offer an easy and familiar environment for our users to communicate with us and to find out more information about our product with little effort. We aim to appear near the top of search engines lists when earthquake preparation is selected as a topic. A vibrant online community is critical in this regard. There are no current public interest blogger or website dedicated to earthquakes or emergency preparation. We are determined to capture this niche in North America. We will participate in local and national emergency preparation events in 2012 to raise our profile. QuakeAware is in discussions with the municipalities and provincial government to promote our smartphone application and website on direct mail campaigns as part of their emergency preparation campaigns. Our strategy is to focus on gaining an official endorsement from one local municipality. Although we are working with several cities, our negotiations are furthest advanced with the city of Vancouver. We are confident once one city endorses QuakeAware others will quickly follow which brings the "desire" for the customers to come to our product.

Figure 13: Promotion Tools



Source: Adapted from "Successful marketing strategy for high-tech firms", Viardot (2004).

Viardot's (2004) research suggests that most effective promotional tools for high tech products is usually a direct sales force, trade shows and technical seminars in that order. High tech customers are sophisticated and demanding. An integrated marketing strategy and direct contact is required to ensure they have confidence in the firm they are dealing with. This is why we believe a hybrid distribution is required for larger customers. Our experience to date has been exactly the opposite as we have been exclusively dealing with consumers directly. We do not have the budget yet to support a robust marketing campaign. As discussed earlier free publicity from the media has been the primary driver of downloads. We cannot rely on this media attention exclusively particularly given the sporadic nature of emergency events. We expect the importance of our integrated social media framework of YouTube, Twitter and online forums to increase in importance over time as discussed in Chapter 2.

We recommend the following criteria to evaluate the effectiveness of each of the promotional channels.

Table 4: Qualitative and Quantitative Media Evaluation

Qualitative media evaluation	
Tonal bias	*does the article have a positive, neutral or negative slant*
Target publication tracking	*is there coverage in the target publications*
Core message tracking	*what publications are picking up on your core message*
Press release tracking	*how much of your press release has been published verbatim*
Quantitative media evaluation	
ACE value $s (Advertising Cost Equivalent)	*measuring the success of your campaign in advertising $'s*
PR value $s	*measuring the impact of your campaign in PR $s - 2.5 times more valuable than advertising*
Impressions / impacts	*the number of times a marketing message is seen x the number of people who see it*
Column centimetre data	*how many column centimetres your editorial piece cover*
Demographics	*what sort of people would have seen your PR coverage*
Media breakdown	*what publications your message appears in*

Source: "Qualitative and Quantitative Media Evaluation" - Connor Keppel (2011)

Our marketing director has signed up to the following key performance metrics for 2012:

Table 5: Key Performance Metrics

Website Visits: A visitor is any single instance where our website is viewed. This number is usually high as it incorporates repeat viewers. Our goal is a 10% increase month-on-month through 2012. Unique Visitors: A unique visitor is an IP address[3] that has arrived to the website for the first time within a reporting period; as such, repeat viewers are not included in this score, only new visitors. We have a goal of a 5% increase every month. Traffic should grow faster than unique visits. This means that people are returning more than once. Gradually over time the ratio will represent an increasing amount of users returning an increasing amount of times. Bounce Rate: A bounce occurs when a web site visitor arrives anywhere on the website, and leaves to another site without visiting another page on the site. Essentially, the 'bounce' off our site to another site. We are currently at 40%. We want a10% decrease over the next 6 months. 30% after 12 months would be a great achievement.
Facebook Facebook: 2011 rolling average of 150 'likes'. With increased activity and the suggestions in section 6, we will have a target average of 600 likes in 202.
Twitter We currently have a 'Klout' score[4] of 18 and Twittergrader score[5] of 56. Twitter: More followers are good, but the tools above give you an indication of your 'true reach' and Twitter influence. We aim for a Klout of 50+ Twitter Grader score of 80 in 2012. This will demonstrate that our social influence is growing (Number of followers is not a sign of quality or influence).
App Downloads We aim to double our number of app downloads 100% in 2012 to 2000.

[3] An IP Address is a unique computer identifier used to enable communication between a PC and a Server

[4] The Klout Score measures influence based on your company's ability to drive action. The Klout Score uses data from Twitter, Facebook, LinkedIn, and Foursquare in order to measure how many people you influence, how much you influence them, and how influential they are. (http://klout.com/home)

[5] Twitter Grader is a free tool that allows you to check the power of your twitter profile compared to millions of other users that have been graded. (http://tweet.grader.com/)

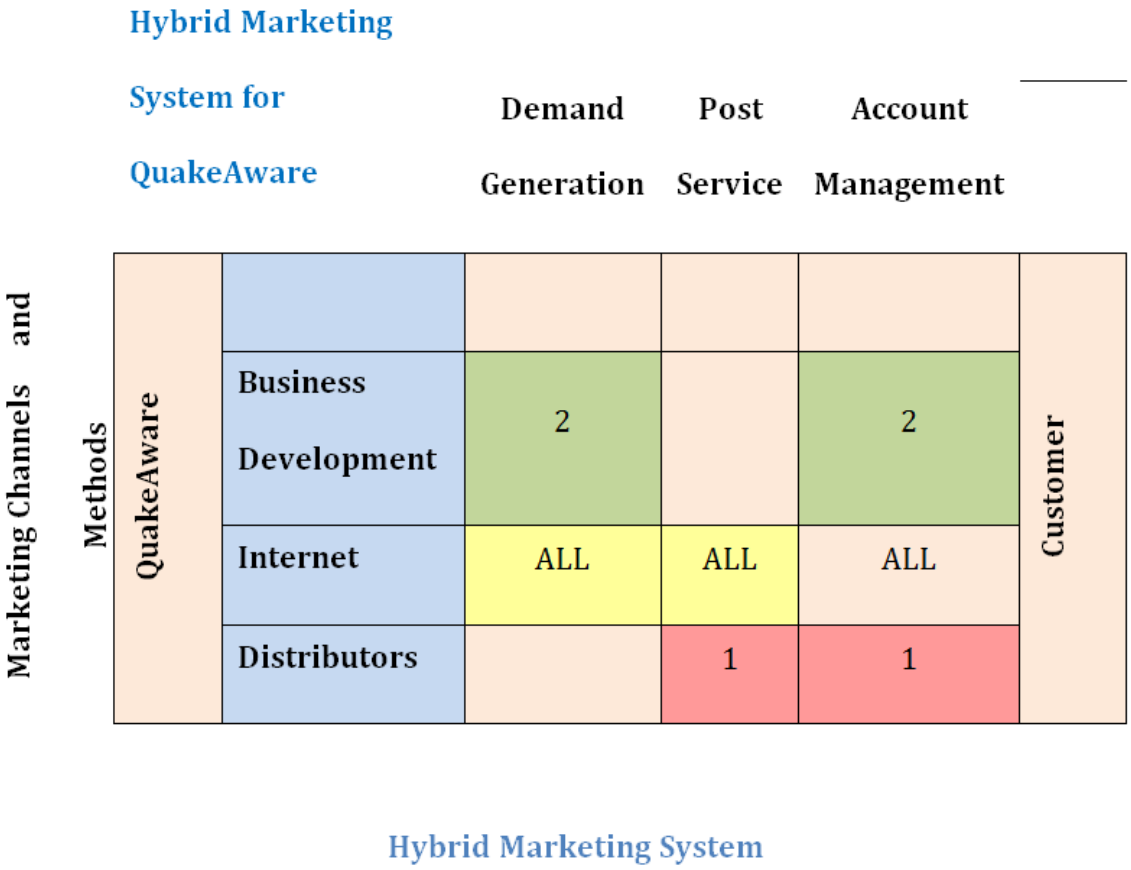
4.4 Channels and Service

We narrowed our four segments into two categories for our distribution strategy:

1. The Parents and Teachers segments
2. The emergency preparedness community and the organizations with high safety awareness

The following matrix shows a modified version of the Hybrid Marketing System for QuakeAware (Moriarty & Moran, 1990). For category 1, our goal is to engage customers with QuakeAware, i.e. get more customers to download our app, join our online community and purchase a survival kit directly from us on the web store. For category 2, our goal is connect our business development manager with these organizations and develop a strategic on-going relationship with them through our social media and online marketing strategy.

Figure 14: QuakeAware's Hybrid Marketing System



Source: Adapted from "Managing Hybrid Marketing Systems", Moriarty/Moran (1990).

For both categories, the Internet, i.e. QuakeAware website and online community, is the main channel for generating demand for our product. Customers in category 1 will receive promotional materials about QuakeAware through our partners (government, cities, etc.), and potentially co-branded material from selected companies and organizations in category 2 (BC Hydro) with an excellent reputation for emergency preparedness and response.

We will target category 2 with direct site visits for business development and targeted e-mail and direct mail campaigns, and work closely with category 2 partners and customers to gain more feedback on what their consumers need and how we could improve our product.

4.5 Customer Service Policy

Customer service plays an important role in an organization's ability to deliver an extraordinary customer experience. We cannot hope to become a trusted advisor and supplier of choice on earthquakes if our online shopping experience and return policy for defective products is inadequate. QuakeAware will outsource all distribution and returns of our survival kits to our selected partners Braidner Survival Kits Ltd and Krasicki & Ward. Our current strategy is to collaborate with local reputable survival kits vendors with excellent distribution channels in their respective countries. We have elected not to pursue strategic alliances with the large cloud distributors like Amazon or eBay as they already sell survival kits. They are unlikely to gain much from developing a relationship with an organization like QuakeAware at this stage of our development. Important factors in choosing our partner will be:

- their reputation for delivering high quality products;
- their return policies, and;
- their ability to report problems with their distribution process.

5: Resources Required

In Chapter 4 we outlined how we aim to successfully promote and grow our business. In this Chapter we review our organization, operations, strategic partners and volunteer strategy to execute against our marketing plan. We discuss key issues the management team believe are vital to the future success of QuakeAware. Management's ability to deliver a productive and support environment for our members is critical to achieve our vision.

5.1 The Organization Structure

The QuakeAware organization is headquartered in British Columbia (BC) since the province offers many advantages to the team from a start-up perspective. Vancouver is not only considered a very desirable place to live in, but also hosts many prominent software publishers such as Microsoft, SAP, and Sage. There is a large workforce of software professionals available for both start-up and incumbent firms to pursue operations in the province. The Canadian government also offers generous SRED tax credits to help domestic businesses promote expenditures on research and development. Geological Survey Canada has offices in downtown Vancouver and on Vancouver Island, which allow the QuakeAware team to develop a close relationship with this organization and recruit key members to our team. In the short term, we aim to leverage the SFU

venture lab offices in Surrey as our base of operations. A major weakness in the organization is the limited number of volunteers at our disposal. (Please see our Volunteer & Recruitment Strategy on Page 58). The team has a core group of five students from the SFU MOT MBA program working part time on QuakeAware while employed full time. We also have two volunteer Subject Matter Experts in Seismology from the GSC and a volunteer Social Media expert serving as advisors and guiding direction in their respective areas of expertise. Our strategy to date has been to limit participation to ensure the team could deliver academic assignments in a timely manner and promote the QuakeAware mission. This strategy was effective in terms of high productivity and cohesion in the team while we attended class. Our challenge now that the program is over is that we have minimal capacity to pursue our mission, as we have not actively recruited any full time members nor do we have any new academic courses to maintain participation.

In terms of funding, a disadvantage to being located in Vancouver is the difficulty in sourcing grants from the US government. In contrast to the Canadian government, the US government offers substantial support to funding efforts in earthquake preparation. In 2011 alone, the US government has put aside $12 million grant as an initiative to help people prepare for earthquake disasters. Another disadvantage to Vancouver is the city's relatively low risk of experiencing an earthquake compared to other metropolitan cities in California, which makes it more difficult to generate excitement around our brand and to overcome the apathetic attitude of the population. This remains a key issue for the team to solve despite the massive publicity we have received consistently over the past two years.

5.2 Partnerships

Developing strategic alliances with partners such as GSC, Simon Fraser University and emergency kit vendors is vital to our success. As explained in section 3.2 our technical advisors from GSC provide key domain expertise that our competition are unlikely to replicate particularly if we can establish first mover advantage in this space. Simon Fraser University provide vital infrastructure and business expertise while we develop our nascent business. Our new revenue model to augment our fund raising efforts depends entirely on our ability to collaborate with a reputable vendor of emergency kits. We outline why these partners are so important in more detail below.

5.2.1 Geological Survey Canada

The QuakeAware team has formed excellent connections with the GSC. The GSC provides vital information on best practises to make our products and services best in class today. We also hope their active support, as an unofficial sponsorship, will prove important and help us secure US funding. In return, we will do our best to leverage our core capabilities to promote their message.

5.2.2 Simon Fraser University

We hope to participate in one of the many incubator programs offered by SFU upon the completion of our MOT MBA program. In addition to important system maintenance such as office space, housekeeping, security, and computer assistance, participants also have access to academic support to develop marketing plans, human resource policies, internal control procedures, and evaluation or assessment processes. We will meet with a mentor in residence Jack Gin later in the summer to pitch our idea to him and seek his mentorship. We are optimistic he can help us recruit experienced advisors to join our team and potentially provide financial support or expertise to help us get the organization going as a Not for profit.

5.2.3 Emergency preparedness vendors

The team is currently waiting on approval from the GSC senior management to begin talks with emergency response vendors. We believe that selling branded QuakeAware survival kits provides an important social utility, is profitable, and aligns with the brand and mission of our organization. A local supplier Toasterz (http://www.toasterz.net/index.html) approached the management team earlier this year to promote and sell their products; however, we decided not to pursue this option, as they are not a dedicated or experienced supplier of survival kits. It is vital we work with a reputable firm such as Braidner (http://www.preparecentre.com/index.html) if we expand our product offering to deliver on our brand promise as a trusted advisor. By leveraging

an OEM we can sell survival kits without owning and operating a factory. QuakeAware will provide the IT infrastructure and marketing to reach a broader audience than our partner could hope to alone.

5.3 Operations

All of QuakeAware's mobile and online systems are maintained by cloud vendors to run our business. This hosting solution allows us excellent flexibility in term of control as well as scalability if we need to grow rapidly.

A hosted solution allows QuakeAware to compete against large government agencies and other competitors for minimal cost in the cloud. We utilize the dedicated hosting services of Site 5's Joomla[6] hosting offering who maintain 99.9% uptime and 24/7 support as well as using the Apple and Android web stores to distribute the application which ensures availability and update control. We also use Wordpress[7] to create and manage our website; this format is generic and can be altered by other web developers with ease for scalability or for transfer of ownership. We believe our current platforms will scale to our needs for the foreseeable future. This approach also frees up management to focus on developing our organization without having to worry about managing our IT infrastructure.

[6] Joomla Hosting: http://www.joomla.org/
[7] Wordpress: http://wordpress.org/

5.4 Volunteer & Recruitment Strategy

QuakeAware needs to introduce a volunteer program to re-energize the team and add capacity to promote our mission. A successful program "must take into account volunteer needs and interests, minimize barriers, and offer tasks that require short term commitments of time and more flexible scheduling." (Holland, Ritvo, 2008) The team has remained largely intact because we enjoy each other's company, work well together, and are interested in helping others. Many of us are learning valuable professional skills at the same time. We want to keep this culture alive and make QuakeAware a fun and productive environment for everyone who participates. We aim to expand our volunteer base slowly and target contributors in key functions. We have a relatively lightweight application and website. We do not want to recruit too many developers and introduce a lot of management complexity into our development environment until we fully transition to an open source platform.

We have developed the following provisional high-level volunteer strategy. Our expectation is that our new full time manager will have extensive experience in this area. We expect further improvements and adjustments to the plan based on their recommendation.

Increase the recruitment of new volunteers:

- Identify volunteering needs and opportunities within QuakeAware and recruit into these
    - Examples include open source developers & architects etc.
- Advertise positions where volunteers needed on our website and online boards
- Access volunteers through:
    - Corporate volunteer programs
    - University & College volunteer programs
    - High School volunteer programs
    - Urban volunteer programs (A group of concerned citizens who are trying to help their community be prepared)
    - Virtual volunteer programs (People undertaking tasks from remote locations, assisting the organization via a computer, smartphone, or tablet through the internet)
- Work with stakeholders to identify facilitate and resource short-term volunteer opportunities
- Recruit members in international Geological organizations
- Support SFU volunteer programs with aim to recruit future students
    - Collaborate with SFU lecturers interested in our work to provide assignments to students

Implement recognition of volunteers:

Although we cannot pay volunteers we do need to introduce more recognition and acknowledgment of volunteer contributions to secure long term commitment.

- Publicly recognize volunteers on a regular basis
- Include volunteer stories and profiles in publications
- Use local media to recognize and promote local volunteers and their efforts
- Free SWAG, small gifts as tokens of appreciation

Establish effective management and governance systems for volunteer programs:

- Ensure systems are in place to accurately track donations
- Donors need to trust money given is used wisely
- Build volunteer support costs into future budgets
- Promote good management and governance practices where possible in newsletters, website and other communications

Develop the knowledge and skills of volunteers:

- Conduct a training needs analysis for board and volunteers
- Develop a training program based on areas of interest for new volunteers and skill gaps identified in needs analysis
- Work with SFU to received accredited training wherever possible

Ensure technical support is available to volunteers:

- Provide good tools to get job done quickly
- Ensure only accurate information is provided (leverage experts)
- Reimburse expenses

Continue close relationship with SFU & Beedie School of Business:

- Identify new opportunities to promote QuakeAware within the SFU community and SFU media channels
- Leverage the excellent connections the Beedie school has with government and local companies

A major challenge with our mission is that earthquakes occur (thankfully) on an infrequent basis. People in general are blasé about the risks of an earthquake and believe it will happen to someone else, somewhere else. This is a major barrier in terms of recruiting members and maintaining motivation in the current membership. One idea currently under consideration by the management team is to move into the New Zealand market next. Although this is not the most attractive commercial opportunity, (our assumption is that many in this market will have purchased kits given the numerous earthquakes in the region), it represents an excellent opportunity to recruit members in a region where the population have experienced first hard the havoc and destruction reeked by earthquakes. Alison Bird has made contact with seismologists in New Zealand and

we will meet with them via conference calls in August with an agenda of recruiting them on to the team. Our expectation is that by recruiting members who have experienced the trauma of an earthquake first hand, they will help reinforce just how important our mission is.

Our operational strategy to date has been to keep fixed costs to an absolute minimum in order to maximize funds available for marketing and product development. All efforts from an employment perspective have been on a volunteer basis. The IT, HR, and finance strategies all align with the management team's exit strategy by minimizing the impact of any change of leadership to the organization.

6: Risk Assessment

6.1 Liability Exposure and Litigation Risk

Due to the nature of our service, there is a risk of tortious liability if an individual suffers personal injury or damage to property by following our advice or instructions. We have attempted to indemnify ourselves by displaying a legal disclaimer in our application and website; however, even if the tort is frivolous, litigation is costly and could be hazardous to QuakeAware's future. Our new forum and blog sections could also lend us some exposure to slander or libel litigation as we could be held liable for defamation. We are currently manually filtering comments to defend against this; however, we will move to an automated system in the future if the comment rate increases.

A source of indemnification for QuakeAware is based in the fact that most of our information is from provincial and federal sources, and updated with the guidance of governmental subject matter experts.

6.2 Assessment of Risks

The following table outlines business risks and proposed strategies to mitigate them:

Table 6: Risk Assessment Table

Risk	Type	Risk	Response or Mitigation Strategies
Funding Ability to scale depends largely on funding for future initiatives	Operational Risk	High	• As per our financial forecasts, we need to generate at least 75K per year[8] to fund full time position and cover operations from 2012. Our first hire of business development manager is vital. • Funding from Inov8.ca has been secured to cover the expenses incurred to date as well as short term needs. • Members of GSC Canada experienced in writing grant applications will assist the team submit our application for funding to USGS. • GSC may not support the current recommendation to sell branded earthquake kits.
Market Acceptance Lack of public interest in the service	Market Risk	High	• High profile earthquakes continue to occur across the globe which continues to raise awareness. • We will participate in several high profile campaigns in 2012 to raise awareness of earthquakes such as the Get prepared program. www.getprepared.ca
Management No NFP experience	Operational Risk	High	• We aim to recruit an experience manager with not for profit experience to run the organization. • We will apply to join a SFU incubator program to support the existing management team.

[8] This number is generated from our Pro Forma in Appendix C; Expenses plus savings for future concerns.

Risk	Type	Risk	Response or Mitigation Strategies
Competition Our business model is easy to imitate.	Market Risk	Medium	• Partnership with GSC and free price point creates a barrier to entry for potential competition.
Quality Content must be accurate for public safety reasons.	Brand	Medium	• The website has established the blogs and forums in order to facilitate the information exchange on public safety matters critical in the event of an earthquake. This information must be accurate. • Information and content posted will be reviewed by experienced Seismologists.
Legal Responsibilities	Legal Risk	Low	• We could be sued by if people follow our online directions and get hurt in the process. • Unlikely given our not for profit status and limited capital. Have added disclaimers to legally protect ourselves.
Product Development We need to move to open source development model to achieve our vision	Operational Risk	Medium	• We have no experience with open source from a management or technical perspective on the current team. • We do not have the systems in place to support an open source model.
Member support We risk losing key members of the management team once the MBA is complete.	Operational Risk	High	• We aim to recruit new members from New Zealand to reenergize the team. • We will grow the organization slowly to maintain the current culture. • A top priority for a full time manager will be to develop a robust volunteer program.
Google	Market risk	Low	• Google recently launched a website to assist earthquake survivors in Japan. If they launched an Android app to integrate with this website we would be locked out of the fast growing market for smartphones. • This niche is unlikely to interest Google enough to commit to maintain a branded app.

7: Financial

7.1 History

From QuakeAware's inception in January 2010, founder's equity totalling close to $1,500 has been contributed and used for promotional and operational purposes. A breakdown of these expenses can be found in Appendix F.

7.2 Funding

Since our smartphone application and web portal content are freely available to the public, funds to sustain operations will primarily come from government or private sector funding grants. At this point in time we have secured verbal commitment from SFU's inov8.ca initiative for approximately $5,000 CAD of funding over the next 6 months. This amount will provide us the resources necessary to establish QuakeAware as a Not for profit organization, expand our marketing and fund our product development.

7.3 Revenue Projections from Survival Kits

For our demand estimation analysis, we are focusing on market segments within the province of British Columbia. Our model assumes QuakeAware can earn a margin of between 5% to 15% of the purchase price of every kit sold through our website. Therefore, we have set a target goal of 10% for accounting purposes. We are also assuming that these figures will be attained over the next 5 years. We outline our target price points for our proposed product categories below.

- Starter kit: $100
- Medium Kit: $200
- Cadillac Kit: $500

The target markets for our kits are parents and family, childcare centres and elementary schools, and governments and high safety awareness companies.[9]

We estimate a total potential market size in BC ranging between $895,776 and $2,687,328 with a target goal of $1,791,522 over five years and starting Q1 of 2012. We use this model to demonstrate how we would attempt to determine potential market sizes along other cities along the western seaboard of North America.

[9] For a detailed analysis of sales numbers, profits, and costs; please see Appendix G

Table 7: Major City Populations of the Western Seaboard of the USA

County	Population
Southern California	
Los Angeles County	9,862,049
Orange County	3,010,759
San Diego County	3,001,072
Riverside County	2,100,516
San Bernardino County	2,015,355
Kern County	800,458
Ventura County	797,740
Santa Barbara County	405,396
San Luis Obispo County	265,297
Imperial County	163,972
Northern California	
San Francisco Bay Area	7,150,739
Greater Seattle Region	
King County Washington	1,931,249
Total	31,504,602

Source: Adapted from "QuickFacts from the US Census Bureau", U.S. Census Bureau (2011).

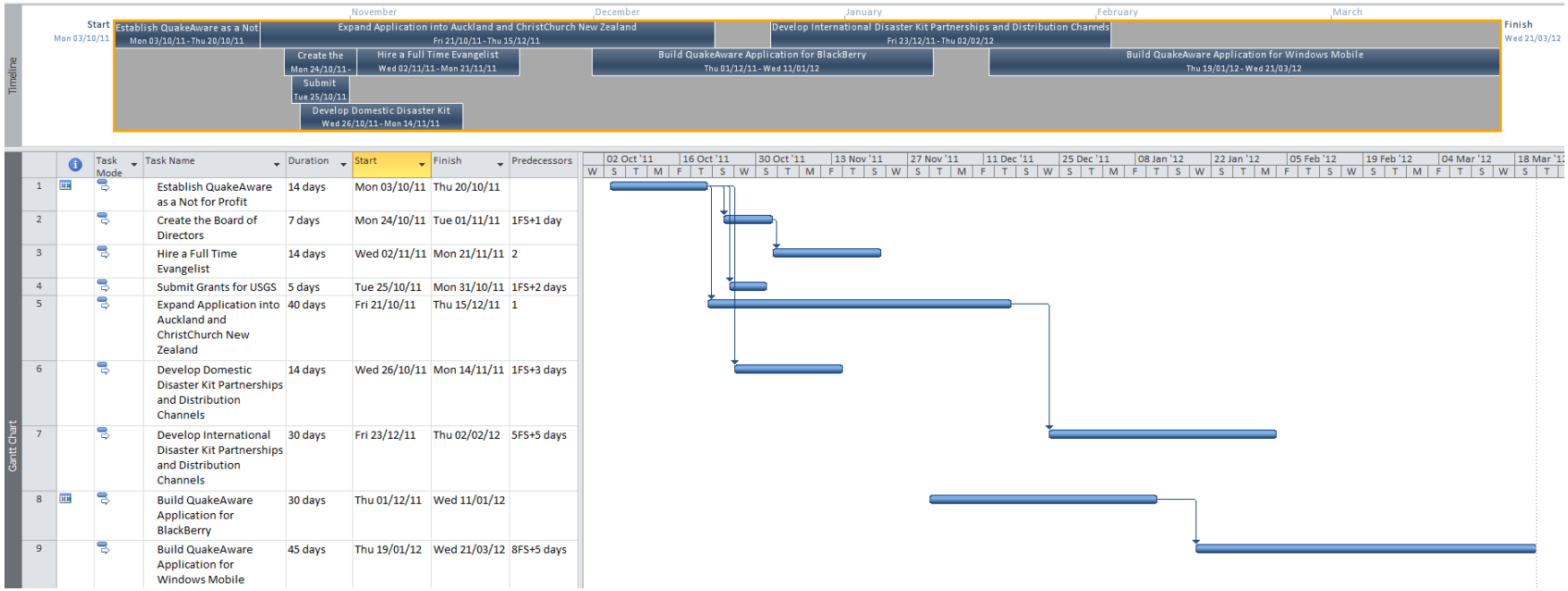
After entering New Zealand and re-positioning the QuakeAware brand as a volunteer organization, we plan to target San Francisco Bay Area, Southern California, and the Greater Seattle Region in that order. The size of this combined market in terms of population is approximately 31.5 million people. This is approximately 12.5 times the population of BC's lower mainland region. If we extrapolate the potential size of the market in our original estimates of our four target segments in the lower mainland, this suggests a potential market size of between $10 and $33.5 million dollars.

If we capture these markets we will secure the future of QuakeAware as a sustainable not for profit volunteer-driven organization for many years to come.

8: Conclusion

The team at QuakeAware are developing the first “one stop shop” for earthquake preparation in the world. Our website connects concerned citizens and seismologists across the globe and helps customers prepare for, and survive better through, earthquakes. We will extend this capability and fund our operations by selling emergency survival kits online to augment our smart phone application and website information services. This supports our mission in the most practical way. Customers can educate themselves about Earthquake preparedness and now procure the supplies necessary to survive for several days in the event a disaster strikes from one simple to use portal designed specifically for those interested in earthquakes. The revenues earned will sustain the business and help QuakeAware promote its mission across our target markets. If all plans go well, we expect our next launch of our smartphone app in January 2011. A Gantt chart of our timeline for the actions leading up to the launch is presented below. Furthermore, subject to a government grant of at least $150,000 anticipated in 2012, QuakeAware would consider an open source development in the hope of enhancing the adoption of our application more rapidly. With the help of our key partner, the GSC, and an energized and expanded volunteer team there is every reason to believe we can help many more people across the globe become `Quake Aware`.

Figure 15: QuakeAware Action Plan Timeline Gantt Chart



	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1		Establish QuakeAware as a Not for Profit	14 days	Mon 03/10/11	Thu 20/10/11	
2		Create the Board of Directors	7 days	Mon 24/10/11	Tue 01/11/11	1FS+1 day
3		Hire a Full Time Evangelist	14 days	Wed 02/11/11	Mon 21/11/11	2
4		Submit Grants for USGS	5 days	Tue 25/10/11	Mon 31/10/11	1FS+2 days
5		Expand Application into Auckland and ChristChurch New Zealand	40 days	Fri 21/10/11	Thu 15/12/11	1
6		Develop Domestic Disaster Kit Partnerships and Distribution Channels	14 days	Wed 26/10/11	Mon 14/11/11	1FS+3 days
7		Develop International Disaster Kit Partnerships and Distribution Channels	30 days	Fri 23/12/11	Thu 02/02/12	5FS+5 days
8		Build QuakeAware Application for BlackBerry	30 days	Thu 01/12/11	Wed 11/01/12	
9		Build QuakeAware Application for Windows Mobile	45 days	Thu 19/01/12	Wed 21/03/12	8FS+5 days

Source: Created by author

Appendices

Appendix A: Competitive Analysis: Strengths and Weaknesses

QuakeAware Competitive Analysis

Although the preparation and reaction to earthquakes is not a new concept at all; the development of applications and social media in the area is. QuakeAware has attracted a few competitors in the last year in both the application and the website space. We will breakdown the competition from the smartphone and the internet market; as well as explain our competitive advantage as well as where we fall short.

iPhone Application Space:

In order of first appearance on the Apple iTunes AppStore:

Figure 16: "Earthquake" by Mobeezio

Source: Adapted from "Earthquake by Mobeezio", Apple iTunes AppStore, (2011).

Cost: $1.99

Last Updated: November 9th 2010

Track and follow earthquakes around the world in real time!

Main Features:

- Live USGS earthquake data delivered quickly to your phone
- International data
- Filter options by Distance, Magnitude, and Timeframe
- Sort list by Magnitude, Location, or Time
- Full Google Map integration
- Integration within the map to the USGS website
- Report if you felt an earthquake directly on the USGS website
- Color & size coded pins to see at a glance relevant earthquakes
- Email detailed screenshots of maps and vital details anytime to anyone
- Supports metrics

Competitive Pros and Cons:

Pros:	**Cons:**
Unlike QuakeAware, they have a specific app for the iPhone and the iPad, which optimizes resolution and functionality.	It is a paid application
Has the ability to refine alerts to a specific geographic location and intensity, which will keep alerts lower	Does not inform users how to prepare or react to an earthquake
Map integration from the USGS alerts and ability to report a "Felt it" report with the USGS	Does not provide worldwide information
Ability to email friends with a specific earthquake that you are viewing	No first aid information

Threat to QuakeAware market share: 4/10 (Mainly replaces the alerting functionality)

Figure 17: "QuakeZones Pro" by AppDudes

Source: Adapted from "QuakeZones Pro by AppDudes", Apple iTunes AppStore, (2011).

Cost: $0.99

Last Updated: November 9th 2010

Earthquake Info With Push Notification

QuakeZones Pro Special Features

* Includes enhanced notification of significant earthquake events worldwide

* Tap a pushpin to see earthquake details including location, date and time

* Also see magnitude, depth, distance from your location, and more

* Manual Refresh enables you to pan, zoom, and refresh the map on demand

* Search for other locations by Region or City name with automatic look-ups

* Add and Save any map location to your personal list of MyZones

* Instantly retrieve a saved location from MyZones

* Display earthquake information for a city, state, country, or worldwide

* Watch YouTube videos with breaking and historical earthquake news

* Browse historical earthquake facts in “Did You Know?”

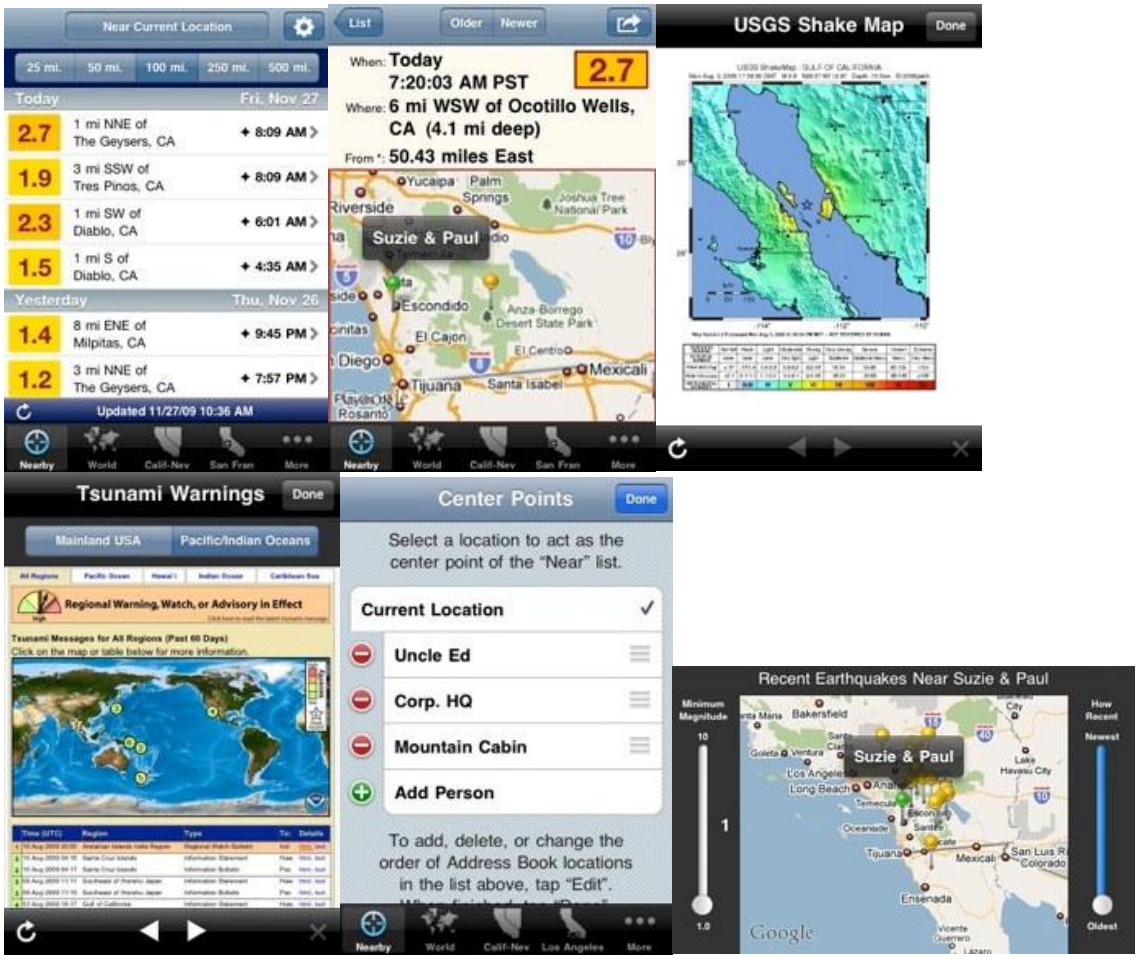
* Use Settings to create defaults for data presentation by year, magnitude, and number of earthquakes displayed

Competitive Pros and Cons:

Pros:	**Cons:**
Has historical time period and magnitude range searches	It is a paid application
Customized list of earthquakes based on time, magnitude, and proximity	Does not inform users how to prepare or react to an earthquake
Map integration from the USGS alerts	Purely research based information (historical)
Has push notifications	No first aid information
High amount of application rating survey recommendations	

Threat to QuakeAware market share: 3/10 (More for qualitative analysis of earthquake zones and threats)

Figure 18: "iFeltThat" by Danny Goodman



Source: Adapted from "iFeltThat by Danny Goodman", Apple iTunes AppStore, (2011).

Cost: $0.99

Last Updated: June 27th 2010

iFeltThat Features

iFeltThat version 2.2 is the premier earthquake information reader for your iPhone or iPod touch. This app has more detailed data and more user-centered features than other earthquake apps for the iPhone:

- Microquakes as small as magnitude 0.1 in most U.S. regions;
- Direct links to U.S. Geological Survey Shake Maps and NOAA tsunami warnings;
- Unlimited Nearby center point entries you choose from your Address Book or earlier events.

Appreview.com rates iFeltThat the highest among iPhone earthquake apps.

Competitive Pros and Cons:

Pros:	**Cons:**
Has USGS "Shake Map" integration	It is a paid application
Ability to save locations and have push alerts sent based on locations or friends, family, work, etc.	Does not inform users how to prepare or react to an earthquake
Map integration from the USGS alerts	Very focused on California in some pages
Has push notifications	No first aid information
Tsunami warning system	

Threat to QuakeAware market share: 5/10 (Larger credibility and integration features than other apps)

Figure 19: "Preparis Mobile™" by Preparis Inc.

Source: Adapted from "Preparis Mobile by Preparis Inc.", Apple iTunes AppStore, (2011).

Cost: Starting at $500 per office; part of consulting plan

Last Updated: August 27th 2010

Preparis Mobile™ connects securely with your Preparis portal, providing access to your organization's critical documents, contact lists, response protocols and more.

With Preparis Mobile:

- Get at-a-glance information on how to respond to a range of threats, from dirty bombs to workplace violence

- Make the right decisions about whether to evacuate or shelter-in-place with the "Stay or Go" tool
- Access your office's floor plans and business preparedness plans
- Find a crisis team member from your company and call or email them with one touch
- Read up-to-the minute news on trending threats
- Put critical information and tools at the fingertips of your entire workforce - even if cellular towers are not operable

Competitive Pros and Cons:

Pros:	**Cons:**
They are a consulting company with a full suite of emergency preparedness and disaster recovery protocols vastly more diverse than QA	Expensive to implement and maintain
Ability to store critical company information and coordinate a workforce after a disaster	Individuals cannot use it without a company subscription (B2B only)
Stay or go tool helps clients make decisions	Impossible to try before you buy
Holds floor plans and safety routes	
Extensive user base with Fortune 500 customers	
Uses social media to connect with clients and potential clients	
Has an extensive and very active blog	

Threat to QuakeAware market share: 9/10 (This company and anyone like it that may follow stand to be a credible threat, especially if targeting consumers)

Figure 20: "Are you Ready? – Disaster Preparedness" by ForceReadiness.com

Source: Adapted from "Are you Ready? – Disaster Preparedness by ForceReadiness.com", Apple iTunes AppStore, (2011).

Cost: $0.99

Last Updated: February 22nd 2011

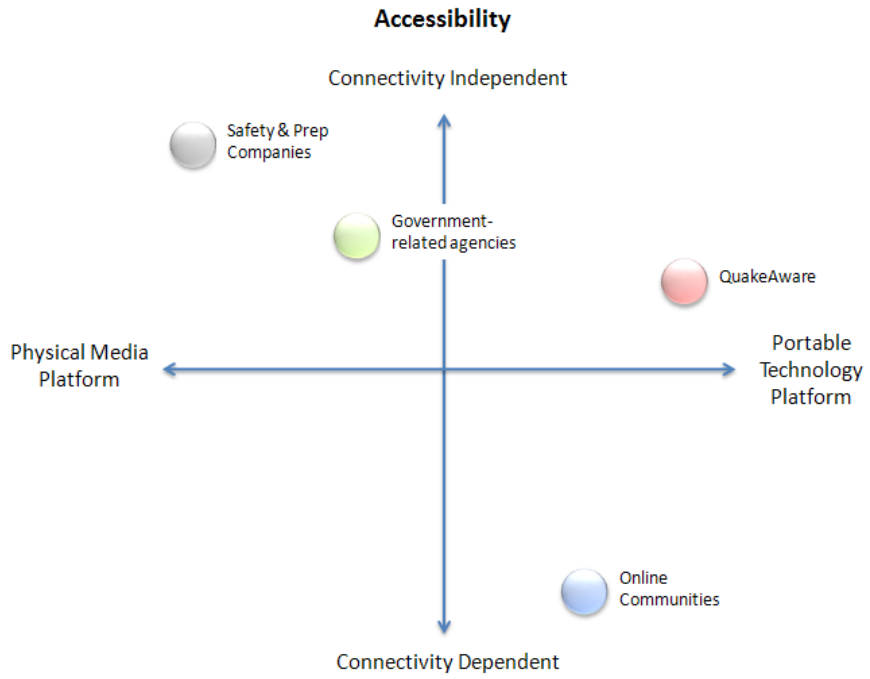
The M-Training System is a revolutionary training and reference system focused on mobile devices. It currently supports the iPhone, iPod Touch, and iPad devices. It is unique in that it has for the first time ever, empowered everyday experts in the field to create mobile training and reference applications for the benefit of all others in the field. Now the people with the most current and relevant experience can share their expertise with their peers.

Competitive Pros and Cons:

Pros:	**Cons:**
Interactive approach to training and getting people prepared for disasters	Very amateurish website without content or much of an explanation
Makes use of a lesson and test system	Impossible to use in the heat of the moment
Information ported and adapted from FEMA resources	Purely for reference
	Paid app
	Limited content

Threat to QuakeAware market share: 2/10 (This company is not a substitute now; but is in this report as they are only a month old and could very well rapidly grow to be a challenger)

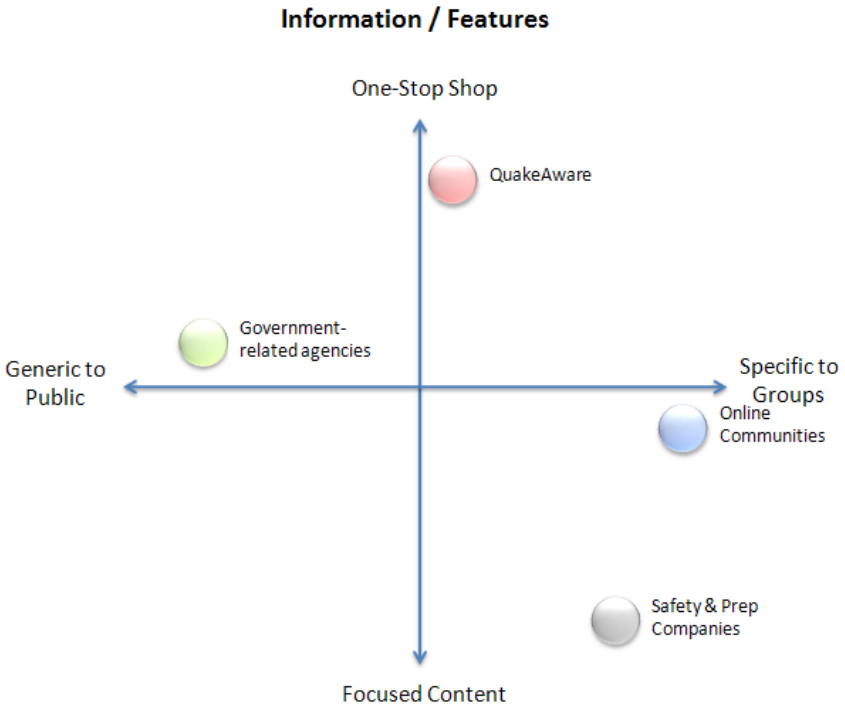
Figure 21: Ranking of Application "Accessibility"



Source: Created by author

Accessibility: Information needs to be available and accessible to users when they need it. Portable Technology (such as a smartphone) is generally readily available to a user unlike a pamphlet or brochure. Information needs to be available as needed. For example an Internet-based solution is useless if no Internet connection is available. QuakeAware's position in the upper-left quadrant demonstrates information is available on the smartphone regardless of data connectivity.

Figure 22: Ranking of Application "Information / Features"



Source: Created by author

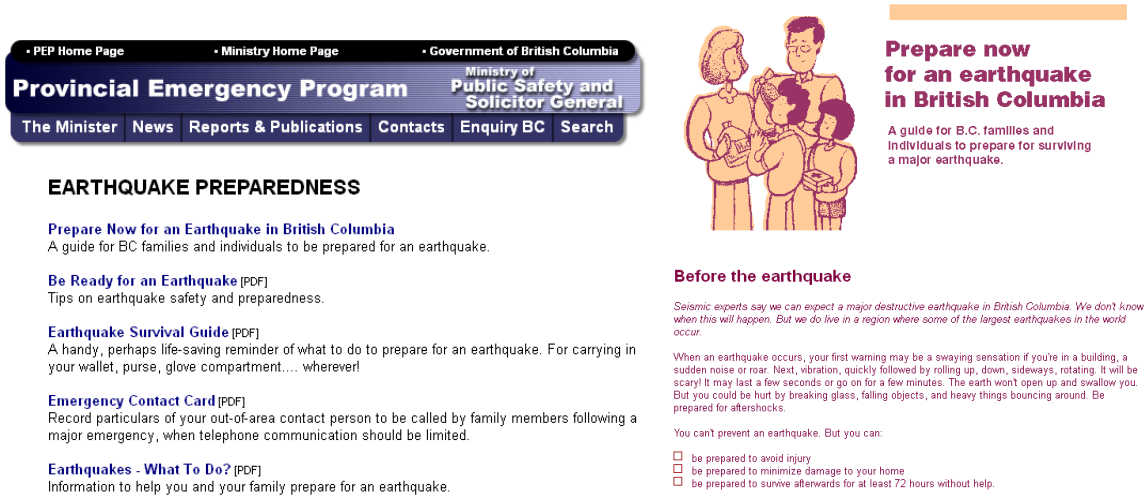
Information / Features: There is a lot of information available in the public domain about earthquake preparedness and safety. Some solutions cater to specific locations or demographics; others focus on specific aspects of earthquake safety. QuakeAware's position in the upper left quadrant near the y-axis highlights the "one-stop shop" approach - to have all pertinent information available under one simple-to-navigate app and website. Customers can order kits online directly from us. QuakeAware will also include information and features catered specifically to location and age demographics.

Earthquake Preparedness Website Space:

In order of first appeared on Google Search:

Provincial Sources:

Figure 23: "PEP Homepage" by Provincial Emergency Program of British Columbia



Source: Adapted from "PEP Homepage", Provincial Emergency Program of British Columbia, http://www.pep.bc.ca/hazard_preparedness/earthquake_preparedness.html (2011).

Last Updated: June 14th 2010

The PEP is a preparedness program specific to the province of British Columbia. Not only do they have information for numerous types of disasters; they have quite an extensive section for earthquakes.

The information on this site is predominantly digitized versions of the pamphlets that are handed out at emergency awareness meetings; the information is valid and professionally backed.

Competitive Pros and Cons:

Pros:	**Cons:**
Professional and recognizable source of information and safety	Difficult to find specific information
Government organization	No search functionality
Solid SEO	No interaction
	Digitized pamphlets
	Undigested information
	No recent updates

Threat to QuakeAware market share: 4/10 (They are a threat in that they can divert attention to our site and show up first in Google; they can also supply competition with the same information we use locally)

Federal Sources:

Figure 24: "Preparing for Earthquakes" by Natural Resources Canada

Source: Adapted from "Preparing for Earthquakes" by Natural Resources Canada http://earthquakescanada.nrcan.gc.ca/info-gen/prepare-preparer/index-eng.php (2011).

Figure 25: "72 Hours" by GetPrepared.ca and the Government of Canada

Source: Adapted from "72 Hours" by GetPrepared.ca and the Government of Canada http://www.getprepared.gc.ca/index-eng.aspx

These federal resources have the budget and the manpower to make videos and hold events to educate the public. The information is timely and relevant and these sites get updated much quicker than the provincial and city level sites.

The GetPrepared.ca initiative by the federal government of Canada is media rich resource for Canadians to prepare for any natural disaster that may occur. These sites offer to the public a free and relatively easy to digest source of authoritative information to prepare and react to multiple natural hazards.

Competitive Pros and Cons:

Pros:	**Cons:**
Professional and recognizable source of information and safety	No interaction with experts
Government organization	Information heavy, users may not spend the time
Solid SEO	Overwhelming website
Strong multimedia	
Easy to navigate	
Hold functions like Emergency Preparedness Week and ShakeOut BC	
Great search functionality	
Twitter and RSS Feeds	

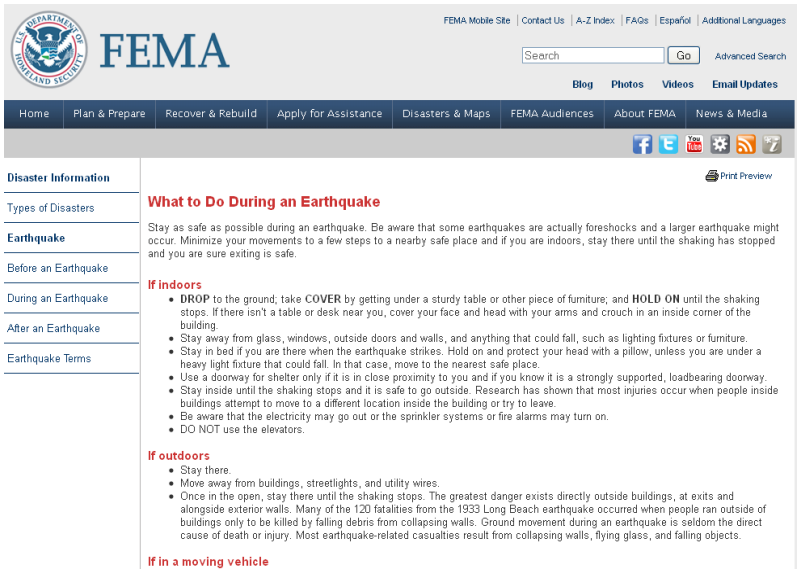
Threat to QuakeAware market share: 7/10 (They may not be a threat to stop QuakeAware; however, they can easily replace us. Coupled with the fact that they come up first on the list in Google, people may read them, and not bother reading about us)

US Sources:

Figure 26: "Earthquake Hazard Program" by USGS

Source: Adapted from "Earthquakes" by USGS http://earthquake.usgs.gov/prepare/ (2011).

Figure 27: Earthquake Hazard Program" by FEMA



Source: Adapted from "Earthquake" by FEMA http://www.fema.gov/hazard/earthquake/eq_during.shtm (2011).

The USGS represents the most state of the art and best funded geological survey team in North America. They have the funds and manpower to develop programs to specifically prepare US citizens for the case of a natural disaster.

Both the USGS and the FEMA sites have easy to navigate and clear instructions on what to do before, during, and after an earthquake.

The information is timely and relevant; however, topical to the USA as a whole.

The USGS also supplies easy to read and navigate, real-time earthquake lists and maps.

Both these groups are utilizing such social media aspects as Facebook, Twitter, Google, StumbleUpon, Delicious, Digg and traditional Email.

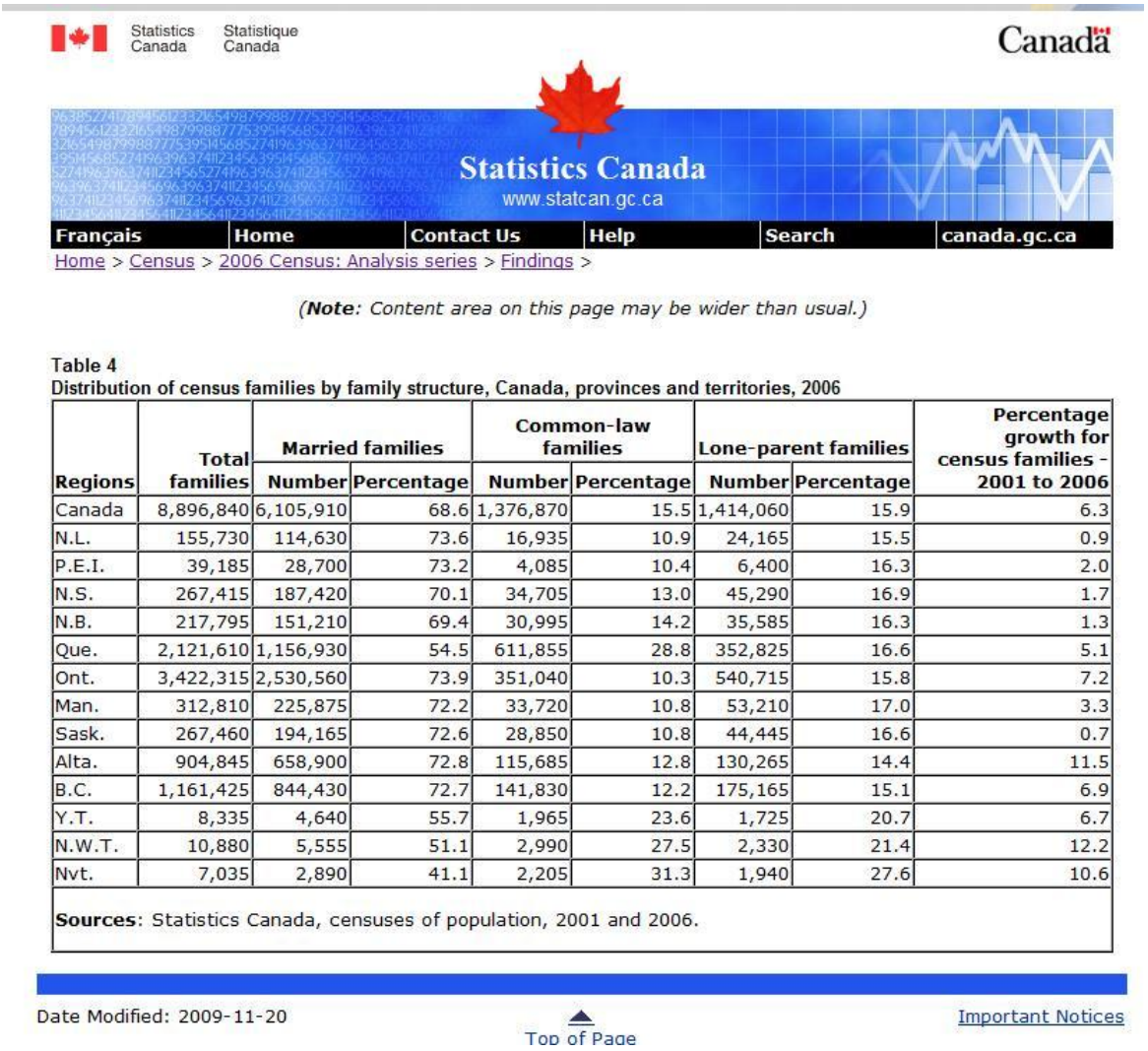
Competitive Pros and Cons:

Pros:	**Cons:**
Professional and recognizable source of information and safety	Overwhelming website
Government organization	Not specific to any one city or region other than California and Nevada
Solid SEO	No forum or blog capabilities
Strong multimedia	Currently no application
Easy to navigate	
Great search functionality	
Facebook, Twitter, Google, StumbleUpon, Delicious, and Digg feeds	
Real-time information	
Covers how to prepare and what to do during and after an earthquake	
Multi lingual support	

Threat to QuakeAware market share: 9/10 (Considering the massive manpower and budget; the USGS and FEMA may put out an application to digitize their information. They also are the premier source of earthquake information in North America. They are responsive, active, and represent to closest online replacement for QuakeAware)

Appendix B: Demand Estimation Supportive Charts

Figure 28: Distribution of family structure, Canada, 2006



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(**Note**: Content area on this page may be wider than usual.)

Table 4
Distribution of census families by family structure, Canada, provinces and territories, 2006

Regions	Total families	Married families		Common-law families		Lone-parent families		Percentage growth for census families - 2001 to 2006
		Number	Percentage	Number	Percentage	Number	Percentage	
Canada	8,896,840	6,105,910	68.6	1,376,870	15.5	1,414,060	15.9	6.3
N.L.	155,730	114,630	73.6	16,935	10.9	24,165	15.5	0.9
P.E.I.	39,185	28,700	73.2	4,085	10.4	6,400	16.3	2.0
N.S.	267,415	187,420	70.1	34,705	13.0	45,290	16.9	1.7
N.B.	217,795	151,210	69.4	30,995	14.2	35,585	16.3	1.3
Que.	2,121,610	1,156,930	54.5	611,855	28.8	352,825	16.6	5.1
Ont.	3,422,315	2,530,560	73.9	351,040	10.3	540,715	15.8	7.2
Man.	312,810	225,875	72.2	33,720	10.8	53,210	17.0	3.3
Sask.	267,460	194,165	72.6	28,850	10.8	44,445	16.6	0.7
Alta.	904,845	658,900	72.8	115,685	12.8	130,265	14.4	11.5
B.C.	1,161,425	844,430	72.7	141,830	12.2	175,165	15.1	6.9
Y.T.	8,335	4,640	55.7	1,965	23.6	1,725	20.7	6.7
N.W.T.	10,880	5,555	51.1	2,990	27.5	2,330	21.4	12.2
Nvt.	7,035	2,890	41.1	2,205	31.3	1,940	27.6	10.6

Sources: Statistics Canada, censuses of population, 2001 and 2006.

Date Modified: 2009-11-20

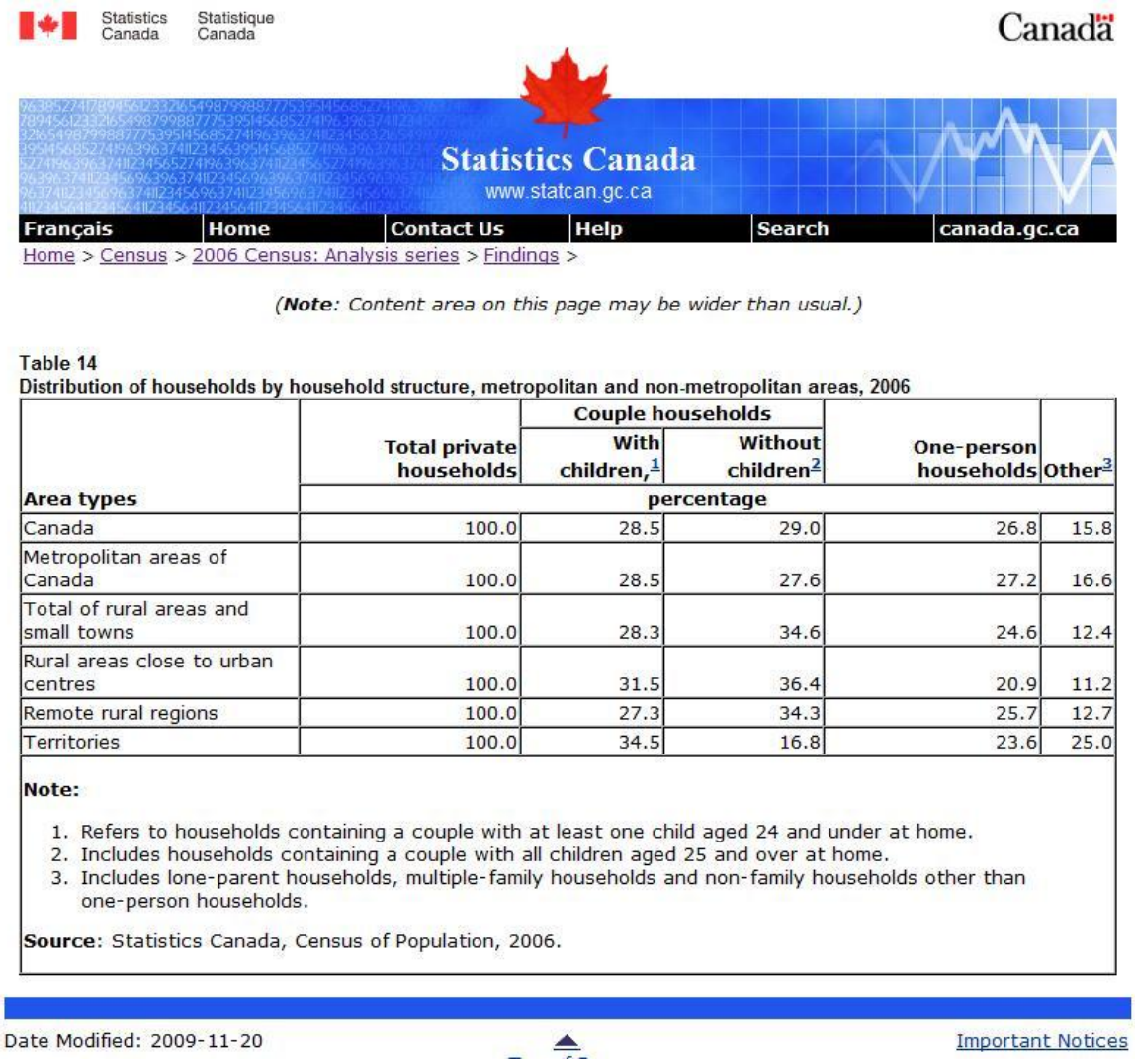
Top of Page

Important Notices

Source: Adapted from "Table 4 distribution of census families by family structure" by Statistics Canada (2011).

http://www12.statcan.ca/census-recensement/2006/as-sa/97-553/table/t4-eng.cfm

Figure 29: Distribution of household structure, Canada, 2006



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(**Note**: Content area on this page may be wider than usual.)

Table 14
Distribution of households by household structure, metropolitan and non-metropolitan areas, 2006

Area types	Total private households	Couple households		One-person households	Other[3]
		With children,[1]	Without children[2]		
	percentage				
Canada	100.0	28.5	29.0	26.8	15.8
Metropolitan areas of Canada	100.0	28.5	27.6	27.2	16.6
Total of rural areas and small towns	100.0	28.3	34.6	24.6	12.4
Rural areas close to urban centres	100.0	31.5	36.4	20.9	11.2
Remote rural regions	100.0	27.3	34.3	25.7	12.7
Territories	100.0	34.5	16.8	23.6	25.0

Note:

1. Refers to households containing a couple with at least one child aged 24 and under at home.
2. Includes households containing a couple with all children aged 25 and over at home.
3. Includes lone-parent households, multiple-family households and non-family households other than one-person households.

Source: Statistics Canada, Census of Population, 2006.

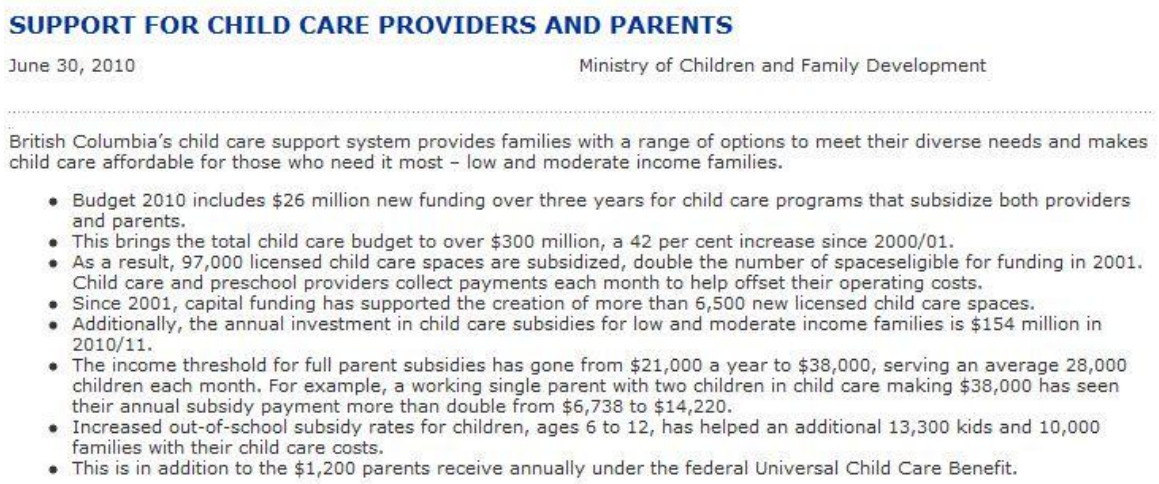
Date Modified: 2009-11-20

Important Notices

Source: Adapted from "Table 14 distribution of households by household structure" by Statistics Canada (2011).

http://www12.statcan.ca/census-recensement/2006/as-sa/97-553/table/t5-eng.cfm

Figure 30: Support for child care providers and parents



SUPPORT FOR CHILD CARE PROVIDERS AND PARENTS

June 30, 2010 Ministry of Children and Family Development

British Columbia's child care support system provides families with a range of options to meet their diverse needs and makes child care affordable for those who need it most – low and moderate income families.

- Budget 2010 includes $26 million new funding over three years for child care programs that subsidize both providers and parents.
- This brings the total child care budget to over $300 million, a 42 per cent increase since 2000/01.
- As a result, 97,000 licensed child care spaces are subsidized, double the number of spaceseligible for funding in 2001. Child care and preschool providers collect payments each month to help offset their operating costs.
- Since 2001, capital funding has supported the creation of more than 6,500 new licensed child care spaces.
- Additionally, the annual investment in child care subsidies for low and moderate income families is $154 million in 2010/11.
- The income threshold for full parent subsidies has gone from $21,000 a year to $38,000, serving an average 28,000 children each month. For example, a working single parent with two children in child care making $38,000 has seen their annual subsidy payment more than double from $6,738 to $14,220.
- Increased out-of-school subsidy rates for children, ages 6 to 12, has helped an additional 13,300 kids and 10,000 families with their child care costs.
- This is in addition to the $1,200 parents receive annually under the federal Universal Child Care Benefit.

Source: Adapted from "Support for child care providers and parents" by the Province of British Columbia (2011). http://www.gov.bc.ca/fortherecord/childcare/sc_children.html?src=/children/sc_children.html

Figure 31: Listing for child care services in British Columbia

Source: Adapted from "Listing for child care services in British Columbia" by YellowPages.ca (2011). http://www.yellowpages.ca/search/si/27/child%2Bcare%2Bservices/british+columbia/rca-00280985-Child-Care-Services

Figure 32: Student Statistics of Elementary Schools 2010

Student Statistics - 2009/10
Province - Public and Independent Schools Combined

Headcount by Grade - Elementary

	School Year	Grade K	1	2	3	4	5	6	7	EU*	Elem Total
All Students											
All Schools	2005/06	40446	41976	43121	44586	46772	48217	49950	50211	2525	367804
	2006/07	40510	41371	42365	43675	45236	47650	49022	50433	2546	362808
	2007/08	40398	41516	41735	42904	44426	46106	48292	49589	2395	357361
	2008/09	41098	41449	41805	42388	43602	45109	47018	48697	1525	352691
	2009/10	41283	42083	41833	42364	43005	44322	45768	47310	1550	349518
All Public Schools	2005/06	35315	36964	37964	39403	41476	42929	44562	44956	1456	325025
	2006/07	35177	36159	37167	38422	39838	42159	43570	44973	1573	319038
	2007/08	34979	36205	36558	37627	39032	40642	42706	44151	1278	313178
	2008/09	35411	36103	36557	37190	38223	39655	41511	43164	349	308163
	2009/10	35781	36557	36530	37028	37694	38902	40324	41880	275	304971
All Independent Schools	2005/06	5131	5012	5157	5183	5296	5288	5388	5255	1069	42779
	2006/07	5333	5212	5198	5253	5398	5491	5452	5460	973	43770
	2007/08	5419	5311	5177	5277	5394	5464	5586	5438	1117	44183
	2008/09	5687	5346	5248	5198	5379	5454	5507	5533	1176	44528
	2009/10	5502	5526	5303	5336	5311	5420	5444	5430	1275	44547

Source: Adapted from "Student Statistics of Elementary Schools 2010" by by the Province of British Columbia (2011).

http://www.bced.gov.bc.ca/reports/pdfs/student_stats/prov.pdf

Figure 33: The Number of Public Pre-K / Elementary Schools in BC

B.C. School District	Pre-K	Kindergarten/Elementary
District 034 - Abbotsford	11	38
District 070 - Alberni	9	15
District 010 - Arrow Lakes	6	4
District 051 - Boundary	8	8
District 054 - Bulkley Valley	6	12
District 041 - Burnaby	12	53
District 072 - Campbell River	4	18

B.C. School District	Pre-K	Kindergarten/Elementary
District 027 - Cariboo-Chilcotin	17	34
District 049 - Central Coast	**1**	**7**
District 023 - Central Okanagan	7	45
District 033 - Chilliwack	9	29
District 082 - Coast Mountains	4	23
District 071 - Comox Valley	4	18
District 093 - Conseil scolaire francophone	8	30
District 043 - Coquitlam	13	54
District 079 - Cowichan Valley	11	25
District 037 – Delta	7	30
District 081 - Fort Nelson	2	5
District 078 - Fraser-Cascade	3	9
District 074 - Gold Trail	3	10
District 061 - Greater Victoria	8	43
District 064 - Gulf Islands	6	9
District 050 - Haida Gwaii	5	5
District 073 - Kamloops/Thompson	6	40
District 008 - Kootenay Lake	12	23
District 020 - Kootenay-Columbia	4	11

B.C. School District	Pre-K	Kindergarten/Elementary
District 035 - Langley	10	37
District 042 - Maple Ridge-Pitt Meadows	9	26
District 075 - Mission	8	15
District 068 - Nanaimo-Ladysmith	9	35
District 091 - Nechako Lakes	15	22
District 040 - New Westminster	3	12
District 058 - Nicola-Similkameen	4	10
District 092 - Nisgaa	0	4
District 083 - North Okanagan-Shuswap	5	26
District 044 - North Vancouver	7	37
District 053 - Okanagan Similkameen	4	10
District 067 - Okanagan Skaha	4	17
District 060 - Peace River North	8	21
District 059 - Peace River South	10	23
District 047 - Powell River	8	9
District 057 - Prince George	16	39
District 052 - Prince Rupert	3	9
District 069 - Qualicum	3	11

B.C. School District	Pre-K	Kindergarten/Elementary
District 028 - Quesnel	6	17
District 019 - Revelstoke	1	4
District 038 - Richmond	5	47
District 006 - Rocky Mountain	7	13
District 063 - Saanich	3	12
District 048 - Sea to Sky	3	12
District 062 – Sooke	8	19
District 005 - Southeast Kootenay	4	18
District 087 - Stikine	1	5
District 046 - Sunshine Coast	5	13
District 036 - Surrey	20	123
District 039 - Vancouver	17	133
District 085 - Vancouver Island North	5	11
District 084 - Vancouver Island West	2	4
District 022 - Vernon	9	19
District 045 - West Vancouver	3	18
Total:	**411**	**1,429**

Source: Adapted from "Number of Public Pre-K / Elementary Schools in BC" by by the Province of British Columbia (2011).

http://www.bced.gov.bc.ca/schools/bcmap.htm

Appendix C: 3 Year Pro Forma

Figure 34: Pro-Forma Income Statement 2011

Pro-Forma Income Statement 2011					
QuakeAware					
	2011				Net Totals
REVENUES	**Q1**	**Q2**	**Q3**	**Q4**	
Advertising Revenue	$ -	$ -	$ -	$ -	$ -
Founder Equity	$ 1,484	$ -	$ -	$ -	$ 1,484
Funding Grants	$ -	$ 3,000	$ 2,000	$ -	$ 5,000
Investing Activities	$ -	$ -	$ -	$ -	$ -
Emergency Preparedness Kits	$ -	$ -	$ -	$ -	$ -
User Donations	$ -	$ -	$ -	$ -	$ -
TOTAL INCOME	**$ 1,484**	**$ 3,000**	**$ 2,000**	**$ -**	$ 6,484
EXPENSES					
Business Development	$ 200	$ 250	$ 60	$ 60	$ 570
Cost of Sales	$ -	$ -	$ -	$ -	$ -
Insurance	$ -	$ 150	$ 150	$ 150	$ 450
Interest	$ -	$ -	$ -	$ -	$ -
Marketing	$ 627	$ -	$ 4,000	$ 2,000	$ 6,627
Legal	$ -	$ 500	$ -	$ -	$ 500
Office Supplies	$ -	$ 100	$ -	$ -	$ 100
Product Development - Web	$ 260	$ 45	$ 45	$ 45	$ 395
Product Development - Smartphone	$ 247	$ 200	$ -	$ 100	$ 547
Salaries	$ -	$ 1,000	$ -	$ -	$ 1,000
Capital Expenditures		$ -	$ -	$ -	$ -
Travel & Entertainment	$ 150	$ 150	$ 1,000	$ 150	$ 1,450
Miscellaneous	$ -	$ -	$ -	$ 500	$ 500
TOTAL EXPENSES	**$ 1,484**	**$ 2,395**	**$ 5,255**	**$ 3,005**	$ 12,139
NET INCOME BEFORE TAXES	**$ -**	**$ 605**	**$ (3,255)**	**$ (3,005)**	$ (5,655)
INCOME TAX	**$ -**	**$ -**	**$ -**	**$ -**	$ -
NET INCOME	**$ -**	**$ 605**	**$ (3,255)**	**$ (3,005)**	**$ (5,655)**

Source: Created by author

Figure 35: Pro-Forma Income Statement 2012

Pro-Forma Income Statement 2012					
QuakeAware					
	2012				Net Totals
REVENUES	**Q1**	**Q2**	**Q3**	**Q4**	
Advertising Revenue	$ -	$ -	$ -	$ -	$ -
Founder Equity	$ -	$ -	$ -	$ -	$ -
Funding Grants	$ -	$ -	$ -	$ -	$ -
Investing Activities	$ -	$ -	$ -	$ -	$ -
Emergency Preparedness Kits	$ 89,576	$ 89,576	$ 89,576	$ 89,576	$ *358,304*
User Donations	$ -	$ -	$ -	$ -	$ -
TOTAL INCOME	**$ 89,576**	**$ 89,576**	**$ 89,576**	**$ 89,576**	$ 358,304
EXPENSES					
Business Development	$ 500	$ 60	$ 60	$ 60	$ *680*
Cost of Sales	$ -	$ -	$ -	$ -	$ -
Insurance	$ 150	$ 150	$ 150	$ 150	$ *600*
Interest	$ -	$ -	$ -	$ -	$ -
Marketing	$ -	$ 4,000	$ -	$ -	$ *4,000*
Legal	$ -	$ 500	$ -	$ -	$ *500*
Office Supplies	$ 100	$ -	$ -	$ -	$ *100*
Product Development - Web	$ 100	$ 45	$ 45	$ 45	$ *235*
Product Development - Smartphone	$ 100		$ -	$ -	$ *100*
Salaries	$ 12,500	$ 12,500	$ 12,500	$ 12,500	$ *50,000*
Capital Expenditures		$ -	$ -	$ -	$ -
Travel & Entertainment	$ 150	$ 150	$ 1,000	$ 150	$ *1,450*
Miscellaneous	$ -	$ -	$ -	$ 500	$ *500*
TOTAL EXPENSES	**$ 13,600**	**$ 17,405**	**$ 13,755**	**$ 13,405**	$ 58,165
NET INCOME BEFORE TAXES	**$ 75,976**	**$ 72,171**	**$ 75,821**	**$ 76,171**	$ 300,139
INCOME TAX	**$ -**	**$ -**	**$ -**	**$ -**	$ -
NET INCOME	**$ 75,976**	**$ 72,171**	**$ 75,821**	**$ 76,171**	**$ 300,139**

Source: Created by author

Figure 36: Pro-Forma Income Statement 2013

Pro-Forma Income Statement 2013					
QuakeAware					
	2013				Net Totals
REVENUES	**Q1**	**Q2**	**Q3**	**Q4**	
Advertising Revenue	$ -	$ -	$ -	$ -	$ -
Founder Equity	$ -	$ -	$ -	$ -	$ -
Funding Grants	$ -	$ -	$ -	$ -	$ -
Investing Activities	$ -	$ -	$ -	$ -	$ -
Emergency Preparedness Kits	$ 89,576	$ 89,576	$ 89,576	$ 89,576	$ *358,304*
User Donations	$ -	$ -	$ -	$ -	$ -
TOTAL INCOME	**$ 89,576**	**$ 89,576**	**$ 89,576**	**$ 89,576**	$ 358,304
EXPENSES					
Business Development	$ 500	$ 60	$ 60	$ 60	$ *680*
Cost of Sales	$ -	$ -	$ -	$ -	$ -
Insurance	$ 150	$ 150	$ 150	$ 150	$ *600*
Interest	$ -	$ -	$ -	$ -	$ -
Marketing	$ -	$ 4,000	$ -	$ -	$ *4,000*
Legal	$ -	$ 500	$ -	$ -	$ *500*
Office Supplies	$ 100	$ -	$ -	$ -	$ *100*
Product Development - Web	$ 100	$ 45	$ 45	$ 45	$ *235*
Product Development - Smartphone	$ 100	$ 200	$ -	$ -	$ *300*
Salaries	$ 12,500	$ 12,500	$ 12,500	$ 12,500	$ *50,000*
Capital Expenditures	$ 5,000	$ -	$ -	$ -	$ *5,000*
Travel & Entertainment	$ 150	$ 150	$ 1,000	$ 150	$ *1,450*
Miscellaneous	$ -	$ -	$ -	$ 500	$ *500*
TOTAL EXPENSES	**$ 18,600**	**$ 17,605**	**$ 13,755**	**$ 13,405**	$ 63,365
NET INCOME BEFORE TAXES	**$ 70,976**	**$ 71,971**	**$ 75,821**	**$ 76,171**	$ 294,939
INCOME TAX	**$ -**	**$ -**	**$ -**	**$ -**	$ -
NET INCOME	**$ 70,976**	**$ 71,971**	**$ 75,821**	**$ 76,171**	**$ 294,939**

Source: Created by author

Appendix D: Income Sources

Figure 37: Chart of Income Sources

Funding Grants	Funding Available	Application Deadline	Funding Date	Link
US Geological Survey Grants	$ 150,000	12-Mar-12		http://earthquake.usgs.gov/research/external/
Inov8.ca	$ 5,000	End of 2011	01-Apr-11	http://www.inov8.ca
Other Sources:				
Advertising Revenue				
Founder Equity				
Investing Activities				
User Donations				
Sales Funds	**Low Range**	**High Range**	**Target**	
(Estimated Funds Available Over Years)				
Emergency Preparedness Kits	$ 895,776	$ 2,687,328	**$ 1,791,522**	

Source: Created by author

Appendix E: Ad Revenue Estimation

Figure 38: Chart of Advertising Revenue

	2011				2012				2013		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Website hits/quarter	3,000	3,750	4,688	5,391	6,199	7,129	8,198	9,428	10,842	12,469	14,339
Ad Clicks	30	38	47	54	62	71	82	94	108	125	143
Revenue from Ad Clicks	$ 7.50	$ 9.38	$ 11.72	$ 13.48	$ 15.50	$ 17.82	$ 20.50	$ 23.57	$ 27.11	$ 31.17	$ 35.85

Website Growth First 6 months	25%
Website Growth After 6 months	15%
Ad Click %	1%
Ad Revenue per Click	$0.25

Conclusion: ad revenues insignificant to consider as a sizable revenue stream in the first 3 years.

Source: Created by author

Appendix F: Expenses to Date

Figure 39: Chart of Expenses to Date

QuakeAware Expenses - To-Date					Total:	$ 1,483.70			Date Snapshot	24/03/2011
Date	**Item**	**Item Category**	**Quantity**	**Item Cost**	**Total Cost**	**Total Cost (taxed)**	**Purchaser**	**Reimbursed to spender? (Y/N)**	**Reimbursed by funding?**	**Comments**
2010	Apple Developer Program	Product Development - Smartphone	1	$ 99.00	$ 99.00	**$ 110.88**	Terrence	Y	N	
2010	iStock Photos	Product Development - Web	1	$ 35.44	$ 35.44	**$ 39.69**	Eliza	Y	N	Graphics for website version 1
2010	QuakeAware T-Shirts	Marketing	6	$ 25.15	$ 150.90	**$ 169.01**	Eliza	Y	N	Donal, Dylan, Eliza, Kelvin, Ryan, and Terrence
2010	QuakeAware Business Cards (set of 250)	Marketing	5	$ 36.25	$ 181.25	**$ 203.00**	Eliza	Y	N	Donal, Dylan, Eliza, Kelvin, and Ryan
2010	Big Poster	Marketing	1	$ 73.51	$ 73.51	**$ 82.33**	Eliza	Y	N	
2010	Website Hosting	Product Development - Web	16	$ 10.95	$ 175.20	**$ 196.22**	Dylan	N	N	2010 + Jan-April 2011 (16 months)
2010	QuakeAware T-Shirts	Marketing	2	$ 25.15	$ 50.30	**$ 56.34**	Eliza	Y	N	Lisa and Colin
2010	BC Innovation Entry	Business Development	1	$ 178.57	$ 178.57	**$ 200.00**	Donal	N	N	
2010	Meeting with GSC (Vancouver Island)	Travel	1	$ 133.93	$ 133.93	**$ 150.00**	Ryan	N	N	
2011	Indulge Living coupons for magnets	Marketing	1	$ 17.86	$ 17.86	**$ 20.00**	Vivien	N	N	
2011	Indulge Living coupons for magnets	Marketing	1	$ 17.86	$ 17.86	**$ 20.00**	Eliza	N	N	
2011	Indulge Living coupons for magnets	Marketing	1	$ 17.86	$ 17.86	**$ 20.00**	Ryan	N	N	
2011	iStock Photos	Product Development - Web	1	$ 21.43	$ 21.43	**$ 24.00**	Eliza	N	N	Graphics for website version 2
2011	QuakeAware T-Shirts	Marketing	2	$ 25.15	$ 50.30	**$ 56.34**	Greg	N	N	Greg and Vivien
2011	Apple Developer Program	Product Development - Smartphone	1	$ 99.00	$ 99.00	**$ 110.88**	Dylan	N	N	
2011	Android Marketplace	Product Development - Smartphone	1	$ 22.32	$ 22.32	**$ 25.00**	Dylan	N	N	
	Tax Rate	12%				$ 1,483.70				

Source: Created by author

Appendix G: Revenue Projections from Survival Kits

Parents:

- 1,161,425 (Number of Families in BC) * 28.5% (households with children) = 331,006 families (Statistics Canada, 2007)
- The percentage of these families with earthquake kits is unknown, but is likely to be no more than 5%. Therefore, the potential market size is 331,006 * 95% = 314,456 families
- Assume 15% market penetration = 314,456 * 15% = 47,168 families
- With the 5-15% margin and a conservative assumption that each family will merely purchase the Starter kit, the potential revenue potential for this segment will be:
    - 47,168 * $100 * 5~15% = $235,842 ~ $707,526

      With a 10% target goal of: $471,684

Child-Caring Facilities (Child Care Centres, Elementary Schools)

This segment has a duty of care for children in attendance, should a disaster such as an earthquake strike. The childcare / elementary school facility will need to provide living necessities for the children until it is safe for them to return to their parents. We

have focused on facilities with young children, who would be generally dependent on their facility guardians, as follows:

- Child Care Centres in BC
- Public Elementary Schools in BC
    - We are focusing on elementary schools based on the premise that the children are not mature and developed, hence would need extra attention and care from facility guardians compared to secondary aged students.
    - We are focusing on public elementary schools since enrolment comprises 87.3% of all students in the province (Ministry of Education, 2011); furthermore, it is more efficient to reach public schools since district school boards govern them.

Child Care Centres – Demand Estimation

- There are 1,611 listed child care service centres in BC (YellowPages.ca, 2011) and 97,000 subsidized licensed child care spaces (Ministry of Children and Family Development, 2011)
    - 97,000 / 1,611 = 60 licenses spaces per listed child care centre
        - Conservative estimate since some childcare centres may not be listed in YellowPages.ca, and that the government may not subsidize some childcare spaces in the market.

- Assume 15% penetration and Cadillac level based on centre size, revenue potential:
  - 15% x 1,611 = 484 centres
  - 484 x $500 x 5% ~ 15% = $15,100 ~ $36,300

    With a 10% target goal of: $30,200

Elementary Schools – Demand Estimation

- Total number of students in all public elementary schools was 304,971 (BC Ministry of Education, 2009/2010)
- There are 63 districts and 1840 total schools (BC Ministry of Education, 2010)
  - 1429 are elementary K-7 schools and 411 are pre-K
- Total number of classes = (1429 * 8) + 411 = 11,843 (assumption: one class each grade = 8 classes for elementary K-7 school; one class for pre-K)
- Average class size = 304,971 / 11,843 = 25 students (BC Ministry of Education, 2010)
- Each class should have a kit at the ready. Assume 15% penetration and Cadillac level based on class sizes, the revenue potential:
  - 11,843 classes * 15% = 1,776 classes will buy a kit
  - 1,776 * $500 * 5% ~ 15% = $44,411 ~ $133,233

    With a 10% target goal of: $88,822

Total segment revenue potential:

$15,100 ~ $36,300 + $44,411 ~ $133,233 = $59,511 ~ $169,533

With a 10% target goal of: $119,022

Government

- Market Potential (In-application/web site advertisement)
    - 189 Local government entities in BC
    - 22 local government entities with population of 75,000 or more
    - 26 local government entities with population of 25,000 – 75,000
    - 27 local government entities with population of 10,000 – 25,000

- Forecast model
    - Simple demand estimation model. As a rule, we can assume 15% adoption with municipalities of sizes of 25,000 or higher.
    - 48 municipalities have 25,000 or more residents in BC. This sized local government will be likely candidates for partnership.
    - 15% of 48 municipalities equates to 14 local government entities being interested in adopting QuakeAware as a legitimate preparedness resource for residents.

- 14 municipalities with avg. population of 50,000 = 700,000 residents (civicinfo.bc.ca)
- 700,000 / 2.5 residents per household (Statistics Canada, 2007) = 280,000 households
- Assume 15% penetration and Starter kit based on unit size – revenue potential:
  - 280,000 * 15% * $100 * 5% ~ 15% = $210,000 ~ $630,000

    With a 10% target goal of: $420,000

High Safety Awareness Companies

There are 176,124 registered businesses in BC with employees (BC Stats, 2010).

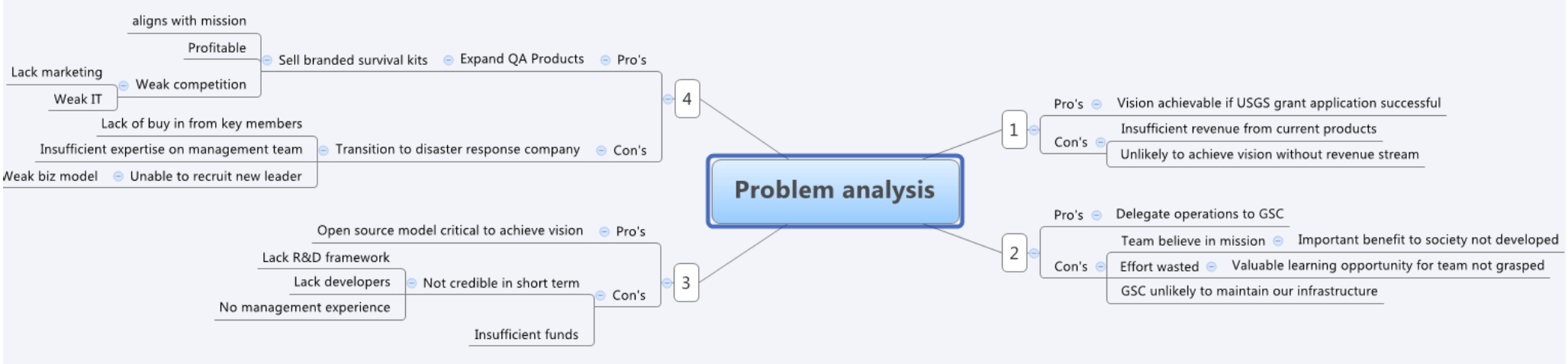
- 156,169 are sized between 1-19 employees.
- 13,078 are sized between 20 & 49 employees.
- 6,968 have greater than 50 employees.

With a 10% penetration rate into an install base of 156,169, we forecast a revenue potential of:

- 156,169 * 10% * $500 * 5% ~ 15% = $390,422 ~ $1,171,267
- With a 10% target goal of: $780,844

Appendix H: Decision Tree Analysis

Figure 40: Decision Tree Analysis



Source: Created by author

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