

LIFEPRESERVER

START-UP BUSINESS PLAN (ESB)

WOODLANDS DECA

THE WOODLANDS SCHOOL

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I. EXECUTIVE SUMMARY

COMPANY OVERVIEW

LifePreserver is a mobile personal medical alert system device that automatically detects and responds to medical emergencies. The global trend of an aging population means that there is a rapidly growing senior population. These seniors are more vulnerable to health risks, and often unexpectedly find themselves in an emergency, unable to contact help. *LifePreserver* is a smart-waistband that is equipped with various sensors that continuously monitor for any signs and symptoms of an emergency. Using its on-board cellular chip, it can automatically recognize the emergency, and call the appropriate emergency services, with or without any user input.

Mission Statement: “*LifePreserver* aims to utilize its automated sensing technology to ensure that everyone has peace of mind regardless of where they are or what happens.”

PROBLEMS

LifePreserver addresses 3 problems that current medical alert technology cannot handle:

Isolated Emergencies: Emergencies can happen at any time, often away from home and others, causing difficulty in requesting help, thus leaving the emergency untreated and left to escalate.

Undetected Emergencies: Serious emergencies can be prevented with early detection, but too often symptoms of serious emergencies can be hard to notice, due to misdiagnosis or confusion.

Incapacitated Emergencies: Serious emergencies such as a spinal injury or a stroke may leave the user unable to push a physical button and get help, which current devices can't handle.

CUSTOMER SEGMENTS

Primary Segment: Seniors aged 65+ living in North America, who are retired and likely to experience health difficulties, looking for ways to ensure their safety during an emergency

Secondary Segment: Adults who are living alone, and are mindful of their safety and seek technological solutions to help during emergencies or potential dangers in their daily lives.

UNIQUE VALUE PROPOSITION

Comprehensive: Will automatically react to any potential emergency, even without user input

Portable: Can be carried discreetly, and cellular technology allows for use anywhere

Reliable: Utilizes a variety of sensors to monitor vital signs and reliably detect emergencies

SOLUTIONS

Contacting Help: Built-in cellular chip will contact emergency services from anywhere

Vital Signs Monitoring: Sensors constantly monitor vital signs for potential emergencies

Automatic Fall detection: Detects when falls have occurred, automatically reacts accordingly

CHANNELS

Direct: Online Stores

Indirect: Traditional brick-and-mortar retailers

FINANCIALS

With an initial market share of 0.01% of the primary Canadian market and a monthly growth in customers of 7%/month, we will make a 100% return on investment and a gross profit of \$350,000 in the first year

KEY METRICS

- User Volume
- Customer Satisfaction
- Emergency Detection Accuracy

COMPETITIVE ADVANTAGE

Cost-effective and more flexible emergency response solutions when compared to competition

Frequent software updates ensure that units are as reliable and as user-friendly as possible

The data, algorithms, and testing used will not be easily copied by competitors.

REQUEST FOR FINANCING

LifePreserver is requesting \$75,000 in seed capital for a 25% stake in *LifePreserver*

II. PROBLEM

As the senior population in Canada and the rest of the world rises, the need for a product that can help seniors in peril has increased. Medical alert system technology that dates to the late 1980s is now outdated, and doesn't leverage the technology available to us in the 21st century. *LifePreserver* deals with three major problems unhandled by old systems:

1. Isolated Emergencies

People will always find moments when they will be alone inside or outside of their home, whether that be while travelling, taking a walk, or running an errand. Emergencies can happen at any time, and isolated people will have trouble contacting others for help. Without a way to seek help, the problem is untreated, and the isolated emergency escalates. Traditional medical alert systems rely on landlines, and will not work when the victim is outside of their home.

2. Undetected Emergencies

Some of the most serious emergencies can be prevented with early detection and treatment. Unfortunately, these emergencies are often hard to notice, as they involve complications within the internals of the body and have symptoms that are hard to notice or are easily confused with more benign issues. For example, the symptoms of a heart attack may include fatigue, nausea, shortness of breath, or dizziness, which are also symptoms of a fever, an allergic reaction, or just aerobic exercise. Just observing symptoms is simply not effective enough.

3. Incapacitated Emergencies

A victim in an emergency is usually unable to seek help, even if all they need to do is make a call or push a button, as most traditional medical alert systems require. The victim may find themselves incapacitated by a spinal injury or stroke, but they will nearly always have shock, a condition in which they have insufficient blood flow. Shock clouds a victim's conscious thinking and take their focus away from the treatment of their emergency.

III. CUSTOMER SEGMENTS

LifePreserver will compete in the mobile personal emergency response systems (PERS) market. As of 2017, the global PERS market is valued at \$8.24 billion, and is expected to grow to \$13.83 billion by 2025 at a compound annual growth rate (CAGR) of 6.7%. We will focus on two segments of our target market: a primary market consisting of seniors aged 65+ and a secondary market consisting of older or more technologically inclined adults.

A. Primary Segment

Seniors (people aged 65+) at risk of emergencies will be our primary segment due to their massive market size and their need and desire for a device that can give them independence, safety, and peace of mind. The senior population is rapidly expanding as the baby boomer generation starts to retire. The total senior population in North America is at 57.2 million (5.9 million Canada, 51.3 million United States), and is projected to grow to about 89.4 million by 2035 (10 million Canada, 79.4 million US).

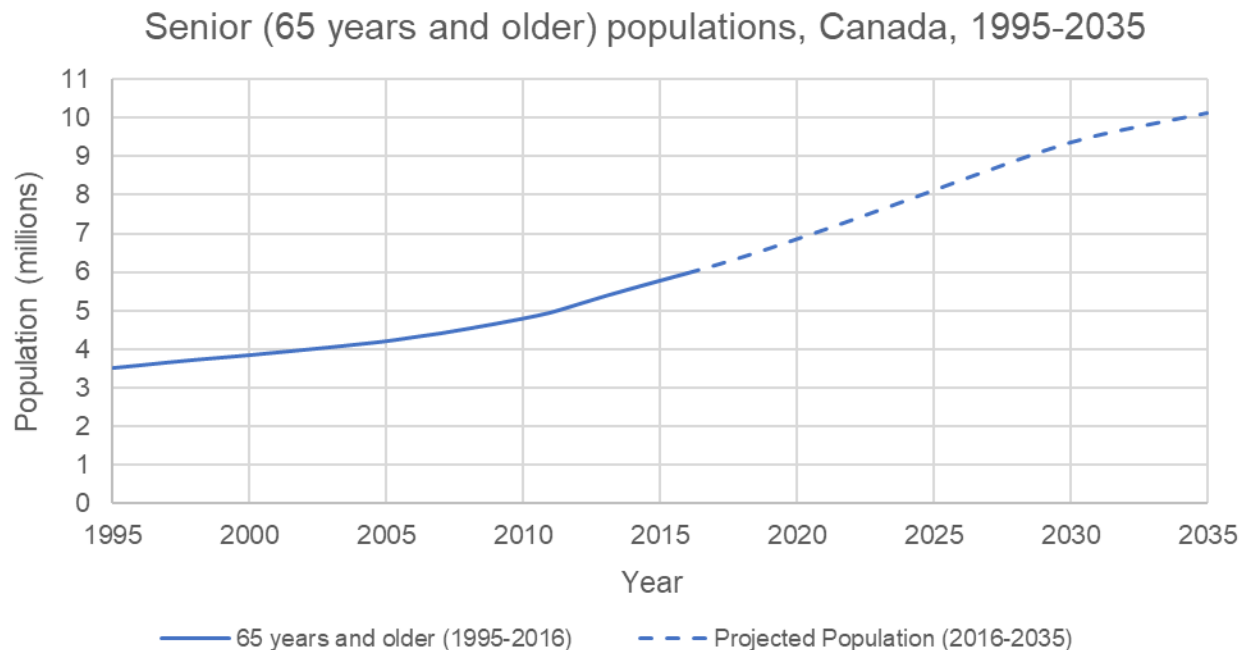


Figure 1: Graph of senior populations in Canada from 1995-2016, and a projection for 2016-2035. *Source: Statistics Canada, Population estimates and projections programs.*

B. Secondary Segment

Adults who are independent and not always in the company of others who are able to help will be our secondary market. They are mindful of their safety and seek technological solutions to potential dangers in their everyday lives.

While we are looking to reach our target market segments regardless of their geographic location, during the initial launch and market penetration of the product, the market will need to be limited to domestic customers. Scaling too quickly can cause issues with supply chain, support reach, and localization.

IV. UNIQUE VALUE PROPOSITION

LifePreserver is a comprehensive, portable, and reliable medical alert system for independent adults who want peace of mind. Keep a safety net for yourself for any kind of medical emergency by just carrying a device on your waist that won't get in your way.

Comprehensive. *LifePreserver* will react to any potential medical emergency involving the user, even if the user is unaware of it or is unable to respond. If you injure yourself and fall unconscious, or have a heart attack without knowing, the medical alert system will know activate automatically. You can manually activate the device to contact for help at any time.

Portable. *LifePreserver* can be carried discreetly and without interference as a waistband.

Cellular technology allows you to be in contact from anywhere, unlike similar landline or Wi-Fi based medical alert systems.

Reliable. *LifePreserver* is built to last and uses a variety of sensors, including proximity sensors, heart rate sensors, and breathing sensors, to monitor your vitals and watch for anomalies. 24/7 customer support and frequent software updates will ensure that the product is up to date, unlike other systems that require you to purchase a new device every year.

V. SOLUTIONS

LifePreserver is a smart waistband that integrates the following three major functions:

1. Contacting help

In the event of an emergency, the *LifePreserver* has a built-in internal Global System for Mobile communication (GSM) chip that will be able to call and notify the appropriate authorities, such as emergency medical services (EMS) and in a caretaking environment, doctors or caretakers. Using a GSM chip, the *LifePreserver* will also be able to provide crucial and potentially life-saving information, such as location, time, identity, and medical information. This would help significantly lower response times and ensure appropriate action such as treatment is given as soon as possible.

2. Vital signs monitoring

LifePreserver integrates sensors that will be able to monitor various vital signs, and detect if a medical episode is occurring. These sensors will include a breathing and heart rate sensor, which can sense if the user's breathing and heartbeat is abnormal or has stopped entirely, signaling that the user needs medical help. A galvanic skin response monitor will also be employed, which can detect changes in the skin and can signal various emergencies such as severe allergic reactions, and insufficient insulin levels in users with diabetes.

3. Automatic fall detection

LifePreserver integrates various sensors that will be able to automatically sense whether the user has fallen or needs help. The combination of an accelerometer and a gyroscope will be able to determine whether a fall has occurred, and if further action is needed. In the event of a false alarm, users can inform the waistband that they are fine simply by pressing a button. By leveraging artificial intelligence (AI) and machine learning, false alarms can be prevented through learning what causes false alarms, and thus preventing them in the future.

VI. CHANNELS

LifePreserver will be distributed via both direct and indirect channels.

A. Direct Channels

Deploying an online store allows for customers to easily and quickly reach our company. The website will be hosted using Amazon Web Services for reliability and scalability. To implement e-commerce services, the website will utilize Stripe and will register a Secure Sockets Layer (SSL) Certificate for secure access and payment. Stripe will charge 2.9% of the amount charged and \$0.30 for each transaction. *LifePreserver* can be distributed directly to the customers across North America via Canada Post at a rate of \$6.70 per parcel and will take 3-7 days to deliver once shipped.



Figure 2: Stripe logo

B. Indirect Channels

A one level channel with a retailer as an intermediary allows customers to interact and see the product prior to purchasing it. Retailers allow us to expand our geographical reach at lower shipping and inventory costs, while giving us the expertise of the middle man for local distribution. Our company can work with major tech retailers, including Best Buy, Staples, the Source, and Walmart. For international expansion in the future, the use of an agent will be needed to help enter foreign markets.

VII. REVENUE STREAMS

A. Revenue Model

LifePreserver will employ the use of both production and subscription models. There will be a one-time fee of \$89.99 to purchase the product, plus a recurring service fee of \$20 per month. The one-time fee will be used to offset the costs of manufacturing and customer acquisition, while the recurring service fees will offset the personnel costs for customer support and cellular data plans for the devices.

B. Lifetime Values

The average lifespan in North America is 79 years old. Some customers may start using the *LifePreserver* several years after becoming 65 years old, while others may start using it earlier. This gives us an average customer lifespan of about 14 years. Since the *LifePreserver* should be replaced every 4 years by the customer, the lifetime value of a customer is about \$3630.

C. Revenue and Gross Margin

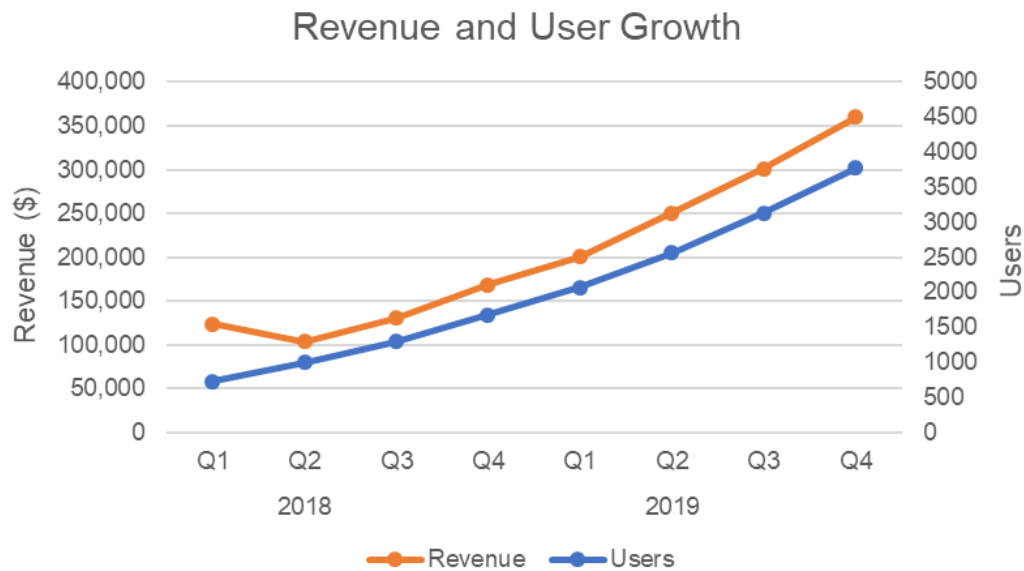


Figure 3: Graph of revenue and no. of users for a two-year projection. An initial user base of 0.01% of the Canadian market with a mean growth rate of 7%/month is estimated.

Year	Quarter	Users	Revenue	COGS	Gross Profit	Gross Margin
2018	Q1	729	\$123,930	\$38,637	\$85,293	69%
	Q2	996	\$103,710	\$16,338	\$87,372	84%
	Q3	1293	\$130,170	\$18,729	\$111,441	86%
	Q4	1676	\$168,550	\$24,178	\$144,372	86%
2019	Q1	2066	\$200,380	\$25,698	\$174,682	87%
	Q2	2566	\$250,280	\$32,698	\$217,582	87%
	Q3	3128	\$300,820	\$37,484	\$263,336	88%
	Q4	3774	\$360,060	\$43,622	\$316,438	88%

Figure 4: Income projections for users, revenue, cost of goods sold, gross profit, and gross margin. The gross margin is expected to be very high as most expenses come from customer acquisition, distribution, utilities, and administrative expenses.

VIII. COST STRUCTURE

A. Customer Acquisition Costs

To effectively target seniors, who might not be as technologically inclined as other market segments, we plan on leveraging the use of more traditional forms of advertising media such as advertisements in newspapers and magazines, which would be more familiar and commonly used by seniors. Simultaneously advertising in 12 print publications will cost \$12,000/month. In addition, social media usage is rising among seniors and adults, with 79% using some form of social networking site. By creating social media accounts and using pay per click targeted ads, we will focus on advertising to those who need the *LifePreserver*. Google AdWords will initially cost approximately \$3,000/month, with advertising easily scaled up as the business grows. Finally, due to paid advertising and a positive brand image, family members and health care providers will consider *LifePreserver* for their clients or loved ones.

With 729 users in the first quarter, the customer acquisition cost per customer will be \$61.73.

B. Distribution Costs

Shipping will be done via Canada Post, which will cost \$7.10/unit (\$6.70 shipping, \$0.40 box).

C. Human Resources Costs

As joint owners, we will both oversee general business operations, with annual salaries of \$50,000 each. To staff the customer support services, we plan to employ one employee to serve every 200 users. At startup, this would require three employees working full-time with an hourly wage of \$14, which will initially cost \$6,720/month. As the business grows, more personnel will be hired and a management structure will likely be necessary.

D. Additional Costs

Production costs will be a variable cost of \$43 per unit (\$23 materials, \$20 labour).

Online transactions will be handled by online payment company Stripe, costing \$0.30 + 2.9% of the total transaction value per transaction. This results in a variable cost of \$3 per unit.

To house operations, a warehouse will be leased for a fixed cost of \$15 000/month.

IX. KEY METRICS

1. User Volume

The number of users of the *LifePreserver* is crucial to its success. This will allow us to monitor the performance of the business against prior projections and expectations, and help identify any problems, areas for improvement, and future opportunities.

2. Customer Satisfaction

As most of the revenue generated by the *LifePreserver* will come from the service charge, it is imperative that customer satisfaction is kept high so that the customer will see the value in paying a recurring monthly fee of \$20 for our service. If we discover lowered customer satisfaction, rapid and effective response is needed to minimize subscription cancellations.

3. Emergency Detection Accuracy

The reliability and efficacy of the *LifePreserver* is important to promoting a positive brand image, and ensuring that future customers will be able to see the value in investing in a product that will serve them well. We will need to gather data on times an emergency occurred versus times the *LifePreserver* alerted for help to identify the causes of false negatives and false positives.

X. COMPETITIVE ADVANTAGE

Our main competitor in the personal emergency response systems (PERS) market is *LifeAlert*. *LifeAlert* and other similar competitors offer a home solution for medical, shower, and intrusion emergencies. Compared to *LifePreserver*, these solutions require a tedious and expensive landline installation in the customer's home, and don't even work outside the home. Customers seek PERS to give themselves independence and freedom, and *LifePreserver* allows them to move freely while staying protected with a hidden waistband, without a tacky necklace and home only solution. Competitors' solutions also require users to press a manual button to be activated, which is clearly not always possible. *LifePreserver* uses its fall detection and vitals monitoring to activate emergency services in the case the user is unable to.

LifePreserver maintains competitive advantage over its competitors through its proprietary automated software and advanced sensor technology. To automate detection, high quality accurate sensors and well-developed computer algorithms are required. As the product is developed, extensive testing and data mining will be done to optimize and tune these sensors and algorithms to make the most reliable and accurate user experience. This information will be kept as a trade secret and will not be able to be easily copied or bought by competitors.

XI. CONCLUSION

LifePreserver offers a new and innovative means for seniors and safety-conscious adults to obtain help during an emergency, even if they may not have the ability to. With unparalleled emergency-sensing capabilities, portability, and reliability, it can gain an unfair competitive advantage. The multitude of sensors and software support will ensure that it will be able to effectively respond to emergencies with or without human intervention, and contact the appropriate emergency services to provide the help needed.

We are requesting \$75,000 in seed capital for a 25% stake in our business. This seed capital, along with our own personal investment of \$75,000 and a bank loan of \$150,000 will help cover the costs of various startup expenses, including rent, recruiting, payroll, marketing, production and shipping.

With the growing market of seniors, even if we initially capture only 0.01% of the primary market segment and experience a modest growth of 7%/month, we will have a customer base of nearly 4000 in two years, and a quarterly revenue of over \$120 000. This high revenue will result in breaking even and making a 100% return on investment with a gross profit of \$350 000 in the first year of operation.

Thank you for your continued interest and we look forward to working together in the future to fulfill our mission of ensuring that everyone can always have peace of mind!

XII. BIBLIOGRAPHY

Canada, Government of Canada Statistics. "A Year in Stats." Government of Canada, Statistics Canada, 28 Sept. 2017, www.statcan.gc.ca/eng/blog-blogue/cs-sc/year_stats.

Greenwood, Shannon, et al. "Social Media Update 2016." Pew Research Center: Internet, Science & Tech, 11 Nov. 2016, www.pewinternet.org/2016/11/11/social-media-update-2016/.

"Life Alert Protection Services." Life Alert, www.lifealert.com/protectionservices.aspx.

"Life Expectancy in North America in 2017." Statista, 2018, www.statista.com/statistics/274513/life-expectancy-in-north-america/.

Markets, Research and. "Global \$11.1 Billion Personal Emergency Response System/Medical Alert System Market to 2025." PR Newswire, 24 Nov. 2017, www.prnewswire.com/news-releases/global-111-billion-personal-emergency-response-systemmedical-alert-system-market-to-2025-300561524.html.

"Medical Alert System/Personal Emergency Response System Market Worth 9.22 Billion USD by 2023." Market Research Firm, MarketsandMarkets, Aug. 2017, www.marketsandmarkets.com/PressReleases/personal-emergency-response-system.asp.

"Stripe Logo." Stripe, stripe.com/img/v3/home/social.png.