

Oluso

Confidence through Connection

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Executive Summary

Oluso is a new startup offering affordable, inexpensive technology to empower the individual. Our product is designed to keep the user in contact with someone close to them in emergency situations. Over the course of the past several months we have performed interviews with both individuals who may be interested in this product as well as organizations who may be interested in purchasing this product for their members. Our product is nearing completion and all of the companies we have interviewed have displayed a significant amount of interest in our product. The combination of easy communication and peace of mind bundled into a non-intrusive device proved captivating to our interviewees. At the conclusion of this course we have met all the requirements necessary to move our product from development to production.

Milestones

1. [achieved] MVP testing with 100 individuals (February 15th)
 - a. register domain
 - b. launch landing page
 - c. launch mailing list
2. [achieved] Acceptance testing of battery life (March 14th)
 - a. test peak current, extrapolate out for full battery life
 - b. test average current, extrapolate out to full battery life
 - c. retrieve information from currently available data sheets
3. [achieved] Encased prototype completed (April 10th)
 - a. 3D print case for prototype
 - b. Build prototype with standalone SOC
 - c. Build working app to connect to prototype
4. [achieved] Ready for pre-sale (May 9th)
 - a. Support email accounts ready
 - b. Mailing list for more information
 - c. Web site ready for customers

Budget

Purchased

Date	Item	Price
10-01-2015	Arduino Uno Kit	\$88.00
01-19-2016	RedBear BLE Mini	\$11.90
01-22-2016	USB Cable	\$4.99
02-02-2016	Domain Name	\$60.00
02-10-2016	CR2032 Batteries	\$3.15
04-18-2016	CAP CER 1PF 50V NPO 0402 (10)	\$1.04
04-18-2016	CAP CER 15PF 50V NPO 0402 (10)	\$0.12
04-18-2016	CAP CER 18PF 50V NPO 0402 (10)	\$0.12
04-18-2016	CAP CER 12PF 50V NPO 0402 (10)	\$0.28
04-18-2016	RES SMD 1K OHM 5% 1/16W 0402 (10)	\$0.13
04-18-2016	RES SMD 56K OHM 5% 1/16w 0402 (10)	\$0.13
04-18-2016	CRYSTAL 32.00 MHZ 12PF SMD (10)	\$7.26
04-18-2016	CRYSTAL 32.7680 KHZ 12.5 SMD (5)	\$10.05
04-18-2016	FIXED IND 1NH 300 MA 120 MOHM SMD (10)	\$0.50
04-18-2016	FIXED IND 2NH 400MA 90 MOHM SMD (10)	\$2.48
04-18-2016	FIXED IND 3NH 300MA 180 MOHM SMD (10)	\$0.50
04-18-2016	CAP CER 1UF 6.3v X5R 0402 (10)	\$0.21
04-29-2016	PCB (2)	\$66.00
05-03-2016	IC SOC BLUETOOTH SMART 40VQFN	\$11.34
05-03-2016	ANTENNA 2.4GHZ 50 OHMS SMD	\$7.08
05-25-2016	PCB	\$33.00
-----	TOTAL COST (WITH SHIPPING & HANDLING)	\$308.28

Background

The concept of a safety related device is not an entirely new concept. Many products related to personal safety already exist and are in production. Our product aims to become a low cost, discreet alternative to the products of our competitors.

Competitors

Our competitors have changed with the change in our target market. Beginning with our earliest competitor research, we will outline a wide assortment of potential competitors of Oluso.

Name	Price	Key Difference(s)
Safelet	\$129 1u	Dials 911, stylish
CUFF	\$60 1u	Stylish, modular
Silent Beacon	\$90 1u	Waterproof, dials 911
Revolar	\$100 1u	Price
Shadow	\$30 1u	Price
React Sidekick	\$80 1u	Real-time tracking
Printed Selfie Button	\$10 250u	Function

Customer Development

Initial

The initial value proposition our group created was based off of the consumer's desire to feel connected with friends and family. After researching numerous competitors in our safety wearable domain we found that the companies focusing on consumer fear were not having success in selling their product. We did find, however, that companies whose marketing message was advocated towards consumer confidence were finding more success in their early development stages.. This lead to the evolution of our value proposition away from fear and towards consumer confidence.

Our initial customer archetype was the female college student. However, as we got out of the building and interviewed our main archetype, we decided to not only limit ourselves to students but to also include women outside of a college campus, specifically in urban environments. Our current main user archetype are women between the ages of 18-28. Furthermore, other customer segments that we have indicated on our Business Model Canvas (BMC) include: seniors, grade school students, and parents.

As we started developing our customer interview questions, the MOM test helped us create a more objective set of interview questions. When formulating our interview questions, we ensured we were asking questions that would give us an indication about how much these individuals cared about personal safety. We wanted to know specifically what situations and in what places the individuals felt insecure. This would allow us to gather information about general and specific situations which could correlate into MVP features and product use cases. We also asked questions that would help us create and validate customer archetype assumptions. Our goal was to find out if our product is something consumers would use and if there is a large enough market to make this as a scalable business venture.

The three main assumptions about our product were:

1. Our product will require a lot of features including gps, LED Lights, a watch, audible alarm, phone charger, distress button.

2. Once triggered, the distress button would notify authorities (police) with a call center as an intermediary
3. Develop a fashionable product paired with a mobile app.

Of our three main assumptions, only the third was validated after conducting customer interviews and market research. The first two assumptions were changed accordingly..

Through our customer interviews we found that instead of a product with many features, customers wanted something consolidated and easy to use with a limited number of features. The main and most important feature being a direct line of communication to an individual close to the user, such as a roommate, significant other, a parent, or just someone who they have been in contact with. Furthermore, the interviewees did not bring up or express interest in having a device send a distress call to higher authorities. This was a common insight and take away from just about every customer interview.

Key interview insights include:

Elsie: Avoids unsafe areas and leaves quickly if feeling unsafe. Wears jewelry, but no bracelets.

Analia: Very independent individual. Constantly walks at late hours on their own. Cell phone is primary safety device in-case of an emergency. She is okay with using her phone as her primary safety device.

Julihanna: Communication with someone is key. Our product should contain some method of communication.

Nancy: Travelling at night (when it's dark out) brings a sense of uneasiness to this individual. Especially travelling via subway.

Amanda: Communication via cellphone with someone they trust provides a major sense of security.

Krizia: Personal awareness (awareness of surroundings) is crucial for this individual. Communication via cellphone is important.

Tracy: Communication during "uneasy" times is key. Also, trends are important to keep up with.

Shweta: No motivation to buy pepper spray (combative, not trained properly, etc) or current tracking applications (wants something free, easy to use and set contacts, prefers through something a lot of people have like Facebook). Doesn't mind wearing an extra accessory for security. Would like something to clip onto her so it doesn't limit her choice of outfits.

Raadhika: Raadhika feels as though most people are not educated on the topic of assaults and personal safety and if they were more aware they would take more precautionary steps. However, she personally is aware and takes precautionary steps to ensure personal safety.

Emily: Emily wants people to know about her situation before it even happens, not during or after. She would feel safer if she could update friends/family on her status while walking home.

Annelise: She carries mace just in case something happens. She feels concerned when walking from school to her car in the evenings.

Kiley: A consistent network of friends/roommates provides a sense of security.

Kinsey: Kinsey's go-to action when walking alone is to make and keep contact with someone close, usually with a phone call.

After cohesively analyzing our customer interviews and key insights, we were able to evolve our Value Proposition and Business Model Canvas as well as direct our product development based on these insights. As we move forward we will continue to conduct customer interviews to better understand customer behaviors and how to improve our MVP to suit their needs.

First Update

Our initial customer development revolved around marketing our device to the individual user. This became problematic due to the difficulty in being able to market and sell our device as a fashion item that they would actually want to wear in their day to day lives. Throughout the course of our interviews, we noticed that

some of our interviewees did like the concept of being able to be connected, but some didn't see themselves purchasing the product.

Our group decided to look deeper into the possible reasons why some of our competitors with similar product design ended up being unsuccessful. We realized that they all relied very heavily on being an appealing item that the user would want to wear. From this discovery we became more aware of fashion versus function.

All of our competitors had to fight with relevant trends in fashion and actually create a product that the user would want to buy. As a group, we felt that fashion will always trump function. So, we decided to shift focus into producing a simple and inexpensive item that can be sold for large scale distribution. This shift in product design changes the target buyer for our product.

Our customer aim has now been changed to market our product towards large organizations, institutions, corporations, and schools. Our goal is to market our product to these organizations as a free promotional item advocating safety and well being. A few institutions that come into mind are PULSE, SAFER, greek organizations, women's shelters, and even new student school orientations.

Additional interviews with various directors of these organizations will need to be conducted in the coming weeks, but the hope is that these organizations will be in favor of the idea of handing out these safety devices to its members. The advantage that this will have over our previous customer developments is that the user won't need to be convinced to purchase the safety device. Instead, it will be given to the user for free. Our hope is that since the product was given to them for free, the user will be more inclined to use it.

In turn, our buyer will now have an item that they can hand out to show that they advocate for the safety of others. In retrospect, all the organization needs to do is think that our product is a good idea and that their persons of interest will use the product for their own benefit.

Second Update

User Update

After we shifted our customer development in regards to targeting organizations, we were able to gather new data from our new organization interviews. Our latest series of interviews included a women's shelter counselor, PULSE professional

health educator, and sorority social chair. Each interview was able to give valuable info for shifting our safety device design.

Our first interview was with Maia Kiley, a counselor at the Santa Maria women's shelter. She expressed an interest and excitement over our safety product on its ability to help assault victims. She explained to us that our product went beyond just the physical aspect of calling for help, but that our device would provide a psychological boost to the user. Maia explained to us that statistically, if a victim gave an assailant any kind of resistance, the chances of the assailant being scared away would increase dramatically. She felt that our device would give the victim a mental edge to promote a stronger tendency to defend themselves and scare off their attacker.

Another potential user of our product was the Cal Poly PULSE organization. PULSE is an organization that supports the health and well being of students. We met with Theresa Fagouri, a professional health educator at Cal Poly. During our meeting with Theresa, we also had people from her staff join us to give us feedback of our safety device. When we concluded our presentation along with a few of the prototypes of our product, they gave us strong feedback on the aesthetics of our design.

The first thing the members of PULSE showed concern for was the possible legalities involved with our product, including liabilities for physical and/or mental trauma. The second concern they had was the aesthetics of our design. They felt that our product would not be associated with a positive image if they were to advertise their logo on our product. They pulled out some of their current promotional items, such as pencils, water bottles, and flash drives that had positive spins on serious topics such as contraceptives and depression. PULSE wanted items that would promote a fun spin of their organization. This convinced us to design our safety device to look exactly like an ordinary chapstick to create a more positive image on safety.

Last interview conducted was with a Nimisha Patel, the sorority social chair of AΩE at Cal Poly. The job of the social chair at a sorority is to schedule and organize chapter, but also have input of some sorority merchandise. When we told her about our product she was simply excited that it was a new gadget to promote her sorority as well as promote safety for her sisters.

A future interview we would like to conduct is with the WOW organization at Cal Poly. Our hope is to get their input on how we could convince Cal Poly to invest in

our safety device as a welcome aboard sway bag item to incoming students in the Fall. Our desire is that Cal Poly, and other colleges around the country, would like to show that their school likes to promote safety to their student body.

Buyer Update

Our buyer has shifted from the individual user to large organizations. Through our interviews we came to understand that many individuals value personal safety, but very few are willing to invest large amounts of money or change their existing habits to improve personal safety. This is likely the reason why many of our competitors who marketed to the individual were not nearly as successful.

Danny Sweeney was able to interview Jay Fox, president and CEO of Jay It Forward - a promotional items distribution firm. Jay expressed interest in our product and offered insight on how we should be designing and marketing our product. One piece of advice that stood out in particular was that we should place a heavy emphasis on the usability of our device - we want individuals to be using our product. Previously we were under the impression that as long as our product is purchased we should be indifferent at whether or not our product is used. Jay suggested that if individuals are actively using our product it will result in more exposure of our product, increasing demand. Because of this key insight we have taken the overall design of our product into heavier consideration.

Jay also suggested, in addition to marketing our product toward communities looking to promote personal safety, to market our product to companies. Large corporations will spend a significant amount of money on products for their employees to promote personal wellness - there is a large potential market for our product in the domain of corporations.

Jay has expressed excitement with our product and has offered to provide his input on any issues we may have in the future. We plan on approaching him in the upcoming quarter when our final design has been produced to discuss how to move our product from design to mass production.

Third Update

Senior Project Expo Feedback

We noticed that the parents that came to our table gave Oluso very positive feedback and felt strongly that this should be something that's implemented in the

welcome aboard swag bags that colleges give to incoming students. If the parents felt this strongly about our product, it would've been possible to generate enough interest that schools would feel obligated to show parents that they care about the safety of their students, and thus help Ol

We also noticed that students who came to our table were not as interested in the product, which was expected. Other individuals who expressed interest in our products also provided suggestions on how to expand on our product, such as making an invisible child leash (if a child with an Oluso is too far from a parent with a smartphone, the Oluso will send a message to the parent), or a button for non-safety purposes (i.e. to pester a user's friends or to place an order for a pizza).

Our product did meet its milestone markers in customer development, but it does need another iteration of meeting the desired size of a chapstick and further outreach to campuses and organizations. The product would be easier to showcase to these organizations if we had our ideal functioning design for them to hold and operate, We think that this would help expand to more interested parties who would be invested in purchasing our device.

Formal Product Definition

Hardware

#	Parameter Description	Target	Tolerance	Risk	Compliance
1	length	1"-2"	+/- .5"	med	A
2	thickness	0.5-1.0"	+/- 0.25"	med	A
3	battery life	9-12 months	+/- 1 month	high	T, A
4	width	1"	+/- 0.5"	med	A
5	impact test	5 m. drop	+/- .5m	high	T
6	protection provided against intrusion (IP)	5	min.	high	T
7	weight	3 oz.	+/- 0.5 oz.	med	A, T
8	make cost	\$5 1ku / 1 month	max.	med	A
9	distance to signal loss	31'	+/- 2'	med	T
10	voltage (battery)	3.0 V	3.6 V max.	med	A, T
11	peak current	12.5mA	max	med	A, T
12	avg current (1 press/1 day)	6.4 μ A	min	med	A, T

Why?

1. Discrete, less cumbersome.
2. Discrete, less cumbersome.
3. Don't need another device to charge.
4. Discrete, less cumbersome.
5. Don't have to be careful with it.
6. Take it anywhere.
7. Take it anywhere, discrete, less cumbersome.
8. Translates to more profit -> cheaper selling cost.

9. Constant disconnects and reconnects.
10. Uses less power -> longer battery life.
11. Uses less power -> longer battery life.
12. Uses less power -> longer battery life.

Software

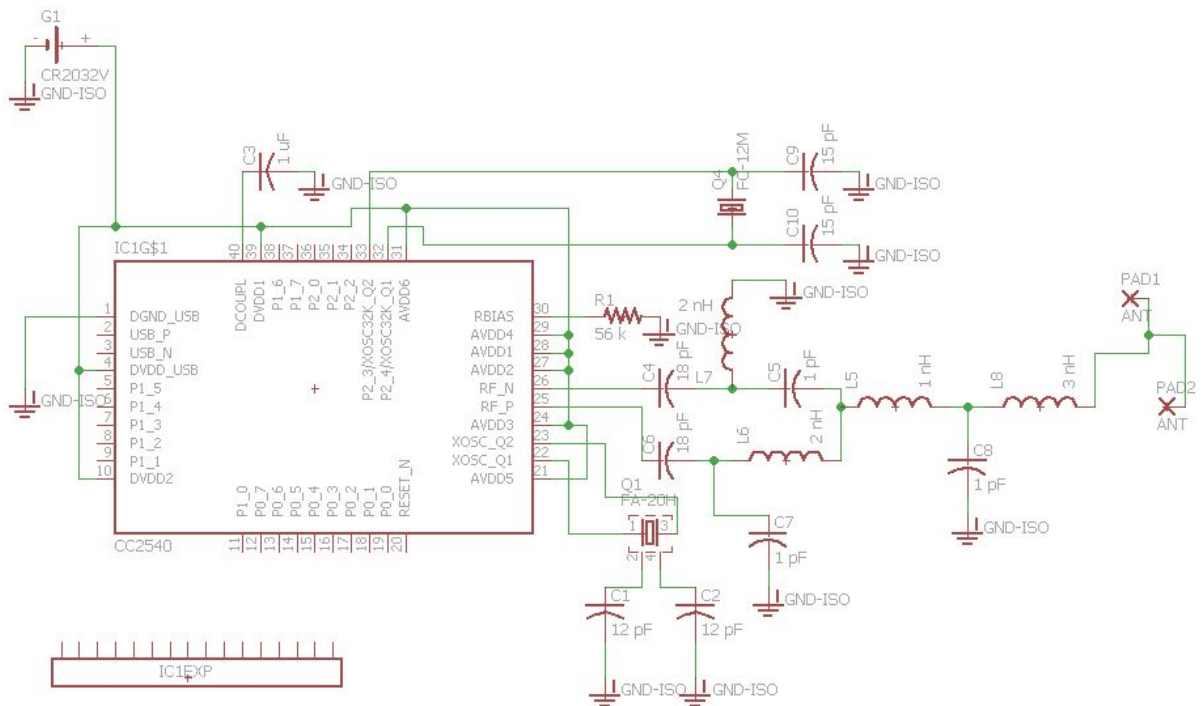
#	Parameter Description	Target	Tolerance	Risk	Compliance
1	app size	25 MB	max.	low	A
2	button press to text send time	3 sec.	+/- 3 sec.	med	T
3	data usage	1MB	+/- 1MB	low	A
4	availability	Android SDK 15+, iOS 9+, Windows Phone 10+	min	low	T

Why?

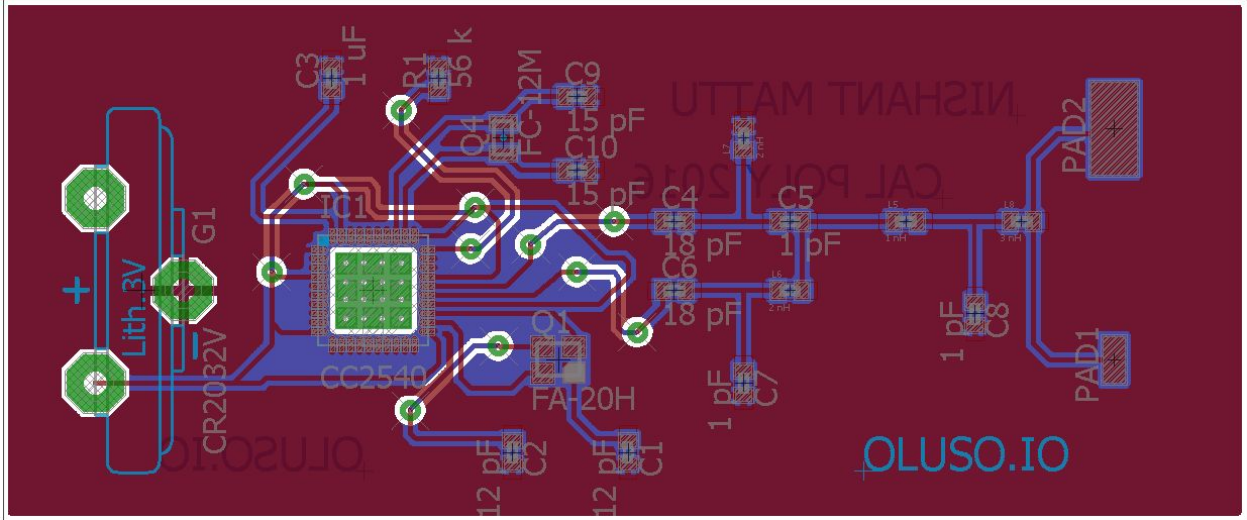
1. People with small-storage phones can still install our app.
2. Faster response -> product feedback makes customer feel confident (in product and selves).
3. Data costs money.
4. Reaching the optimal number of customers to make a profit.

Printed Circuit Board

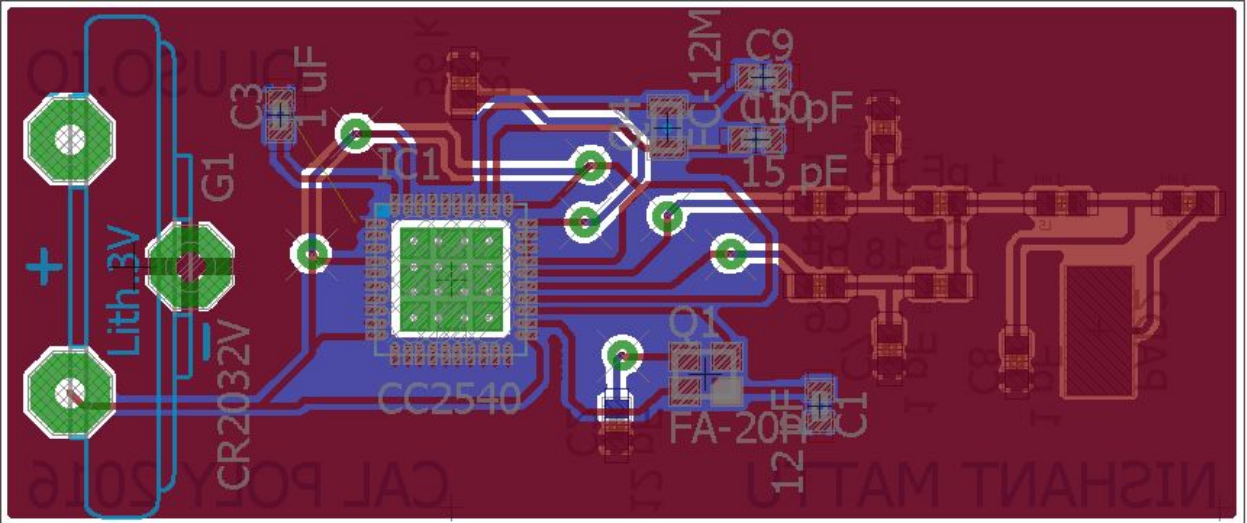
The PCB schematic was created using EagleCAD 7.5.0 freeware. The circuit design is a reference provided in the TI 2541 datasheet. A 3V source was added to power the device (CR2032). The pads at the far right are for the antenna component.



EagleCAD also has a PCB layout function. The first version of the PCB board is one-sided. It is a two layer board with both planes grounded. The dimensions of the board are 2.7 x 1.324 inches. The PCB was manufactured by Advanced Circuits, and the components required were bought through Digikey. The components were soldered onto the board.



The original version of the board was too big to fit into the case designs. As a result, a smaller board was created. This board has two layers and is double-sided, meaning the components occupy both sides of the board. The dimensions of the smaller board are 1.976 x 0.855 inches.



Further improvements to this design can potentially be made, but we determined this design to be sufficient for our current needs.

Bill of Materials

Per unit cost at 5,000 units per month:

TI CC2541	\$2.05
CR2032	\$0.165
EEPROM	\$0.398
Button	\$0.01
LED	\$0.116
Antenna	\$0.20
Plastic	\$0.025
PCB	\$4.00
Total	\$6.964

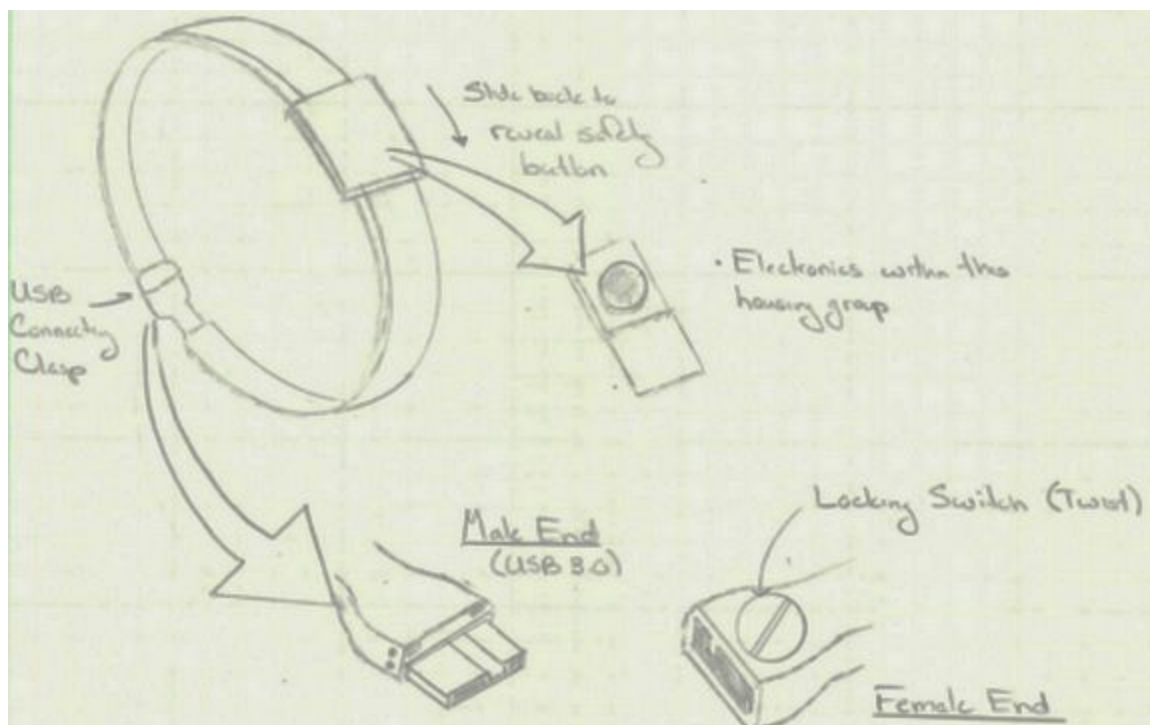
This cost estimate is conservative. This cost estimate represents the cost of our current PCB configuration and does not account for having the entire PCB assembly manufactured in the same facility. Taking these considerations into account, we can expect the actual cost of our product to be lower than what we currently anticipate.

Initial Design Development

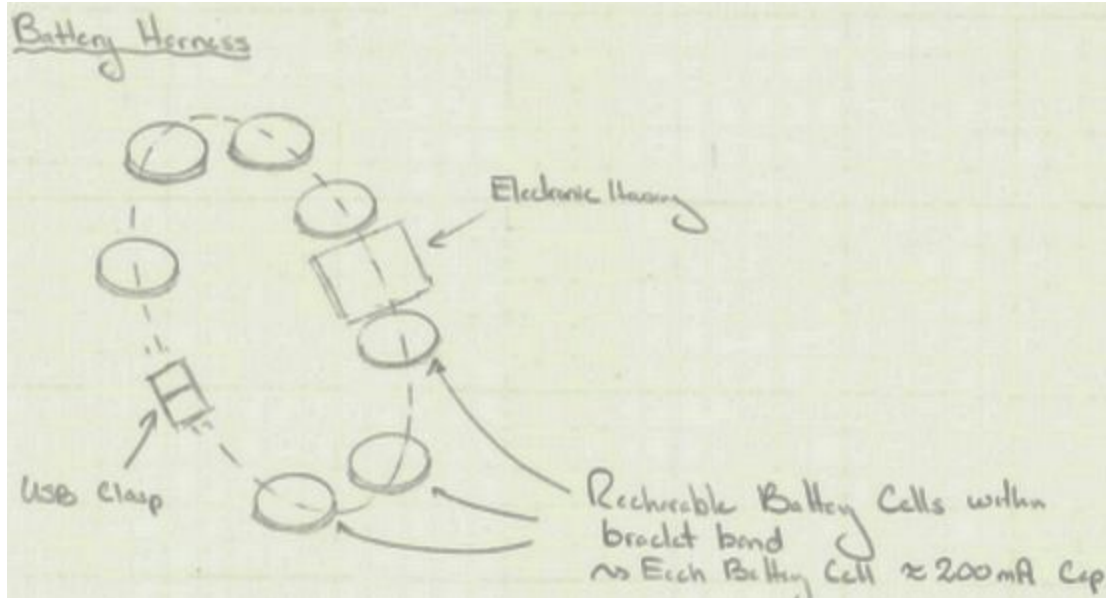
Grouped together under the wearable domain, our team decided to design a safety based item that our wearer could keep on them at all times. We created a large list of possible features that could be incorporated into a device that could help the user feel safe. The list included direct deterrents such as mace, a loud pitched siren, and debilitating strobe light. The list also incorporated informational features such as a heart rate monitor, accelerometer, gps tracker, and the ability to make phone calls through an app that would connect to the device.

In our initial concept designs, we knew that we wanted to keep our device small and discreet enough on the wearer in order to not attract attention. Secondly, we wanted it to be large enough in order to incorporate all the electronics needed for the features that we wanted to offer. Lastly, according to our customer development, we needed something fashionable for our female customers. We felt that a bracelet (Oluso) would be the ideal accessory that could meet our design parameters.

In our first design concept sketches we combined multiple features as seen below.



Oluso initial design sketch with battery pack



Initial design sketch battery harness

This design sketch combined a battery pack distributed within the band to give the user extra power to charge their phone when needed. This design also incorporated a panic button that would initiate our device to connect to an app installed on the user's smartphone to alert loved ones or emergency services of their distress.

During our interview process, we were able to collect information that helped dictate the features that would be designed into the Oluso. From our interviews, we learned that our prospective customers wanted simplicity in their product and did not care for a multipurpose tool. This prompted us to scale down our concept design to a bracelet with only a panic button that connects to a phone application.

This shifted our design focus toward the user interaction with the panic button itself. We wanted to design different ways that our user would be able to activate the panic button. We will need to collect more data through customer testing to find the most efficient method for someone to trigger the panic button.

Several Computer Aided Design (CAD) mock-ups were created for initial prototyping of the Oluso as seen below.



Oluso CAD design with simple button

One initial concern for this design is that a panicking individual may excessively and repeatedly push the button



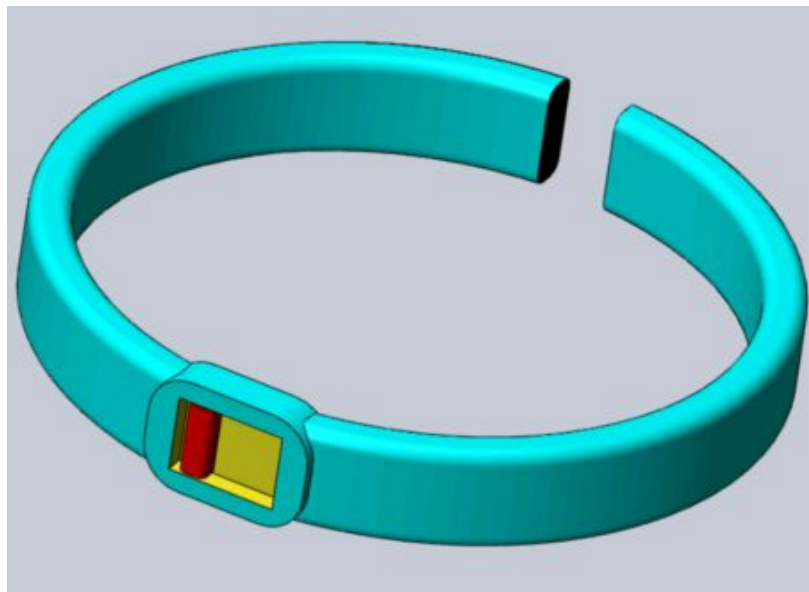
Oluso CAD design with discrete panic button

This design with a press and twist watch bezel gives the user the functionality of a watch while keeping the panic button completely discrete.



Oluso CAD design with pull string activation

Concern with this design is the higher probability of the pull string getting caught and accidentally triggering panic button. Pull string is also more prone to breaking through excessive force/repeated use.



Oluso CAD design with switch

This design (switch cover not shown) would give a panicked user positive feedback that the device is correctly in the right position and connection with their phone application.



3D printed prototype of Oluso

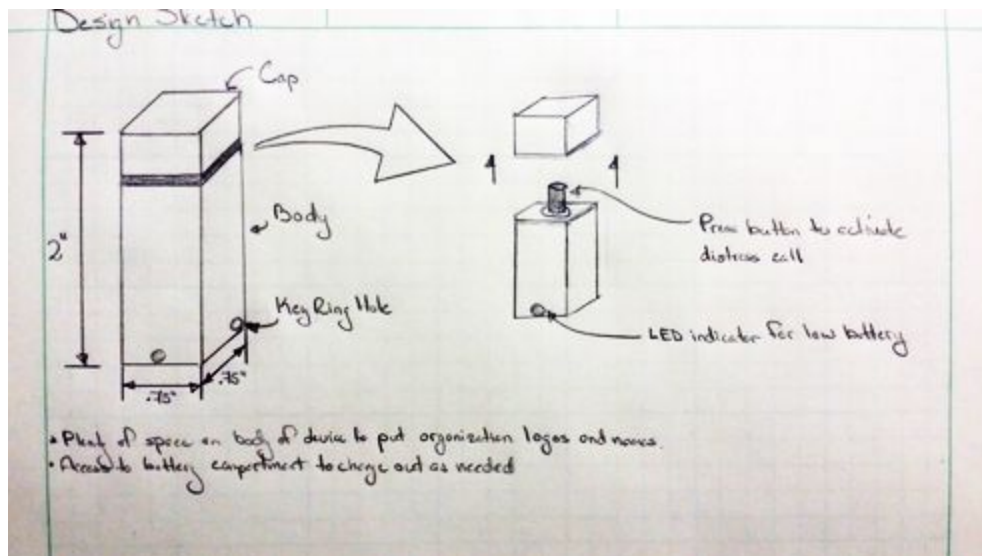
The main objective of the Oluso will be to help young women never feel alone. By always keeping an available mode of communication, young women will feel more comfortable traveling alone in unfamiliar locations. As we approach the working prototype phase, one of the largest obstacles we face is to have our product accepted by our customer. This will require us to do more extensive research and information gathering to ensure the best probability of success for our first working prototype.

Updated Design Development

After conducting more market research we determined that our product would likely be better suited as a promotional item. We came to understand that for products revolving around fashion and function, fashion is always the selling point for a product. Because of this concept, we decided to focus purely on the functional aspect of our product.

Rather than having our product in the form of a wristband, we are now designing our product as a functional keychain. Because we are now marketing toward organizations, rather than individuals, we are seeking to create a functional and inexpensive panic button that can be given away at promotional events advocating personal safety.

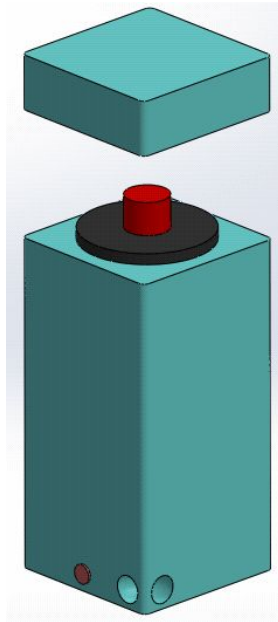
Our new design will be a keychain with a focus on the trigger mechanism. It will have a sleek, but simple design with a single panic button that can be used to send a distress signal to friends and family of the user.



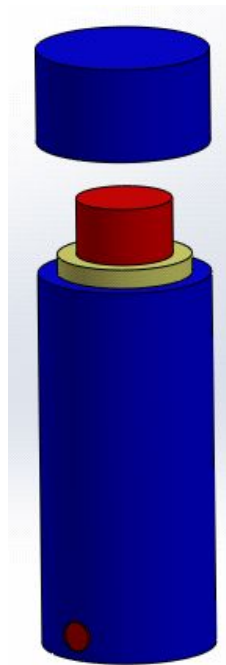
Initial Keychain Concept Design

The figure above depicts the original concept design of the new keychain distress beacon. It features a single button covered by a cap. The design is simple enough to

be customized - the logo of any organization or any message can be placed on the sides of the keychain.



Keychain Concept Design - Rectangle CAD File



Keychain Concept Design - Cylinder CAD File

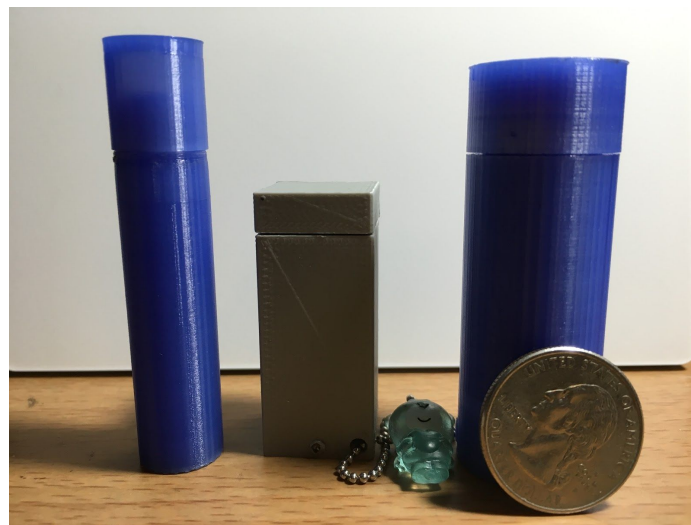
The figures above are early concepts of the new promotional item prototype. These concepts have a single push button to place an alert the user's designated call list.

We want to provide different styles and shapes to give the user several options for purchase.



Keychain Concept Design - Chapstick CAD File

The figure above is a design concept that was developed after speaking to PULSE. This design is an attempt to make our safety device look like an ordinary chapstick. The background of this design is to give a fun factor appearance to our product and make it more appealing to the user while still promoting a more positive image.



Initial 3D Printed Concepts

Team Development

At the beginning of the first quarter, all team members shared a common interest in the field of wearable technology with a goal to improve the quality of life for college students. Since then, we have maintained this purpose throughout the various stages of customer development. However, despite a lack of change in the field we have chosen, there have been vast improvements in our value proposition and design process.

When developing the team contract, the one rule we truly enforced was to ensure that everyone was on the same page throughout the course of this project. Updates are constantly shared through email and text; this steady stream of communication has so far led to quick decision making and stronger consensus between members. When it comes to the difficult decisions, we allow everyone to share their cases before making a final decision. However, this decision is usually made with the customer's or company's best interest in mind. For example, when deciding on what features to integrate into the band, we initially argued over what to include but came to the consensus that we needed to conduct more customer interviews before making any major decisions.

In the second quarter we picked up an additional business member, Daniel (Danny) Sweeney. Danny was an excellent addition to the group and contributed greatly to both our customer development and provided great feedback about our product that allowed Oluso to become the product that it is today.

In the last quarter, sadly only Nishant, Tyler, Michael and Diego remained. As a team, we worked very well together - we all had similar work styles and schedules. Janel and Danny both expressed their continued interest in our project and offered their assistance in any future issues we may have.



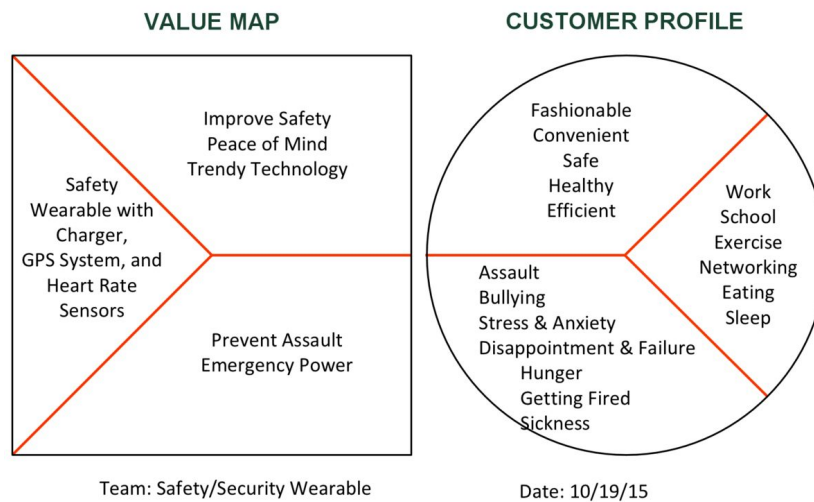
The last remaining team members

Appendices

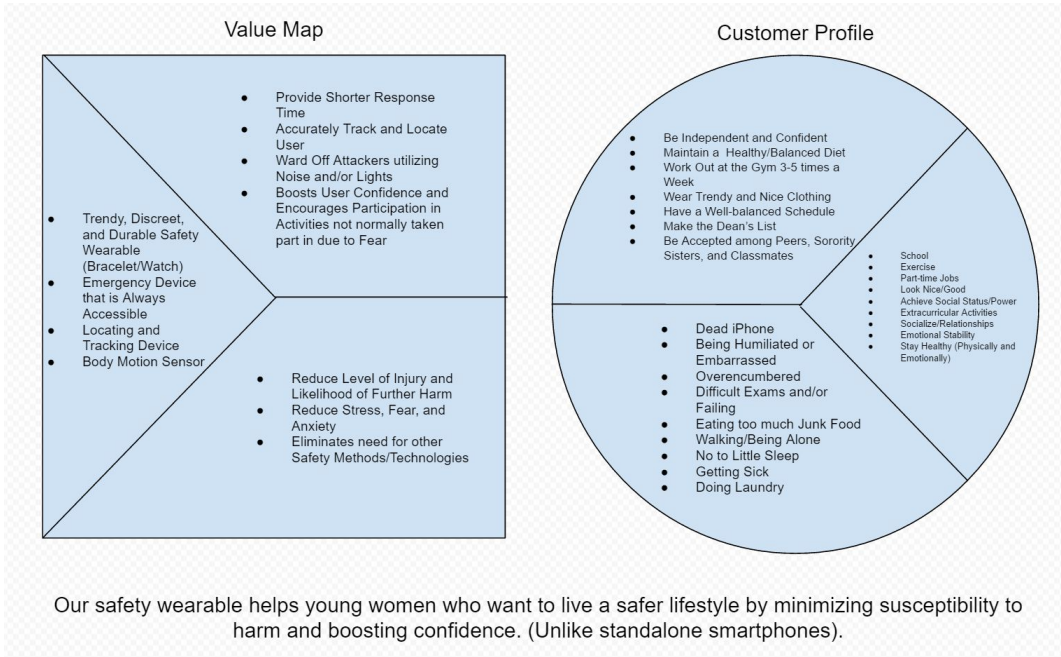
Links

Website: <http://oluso.io>

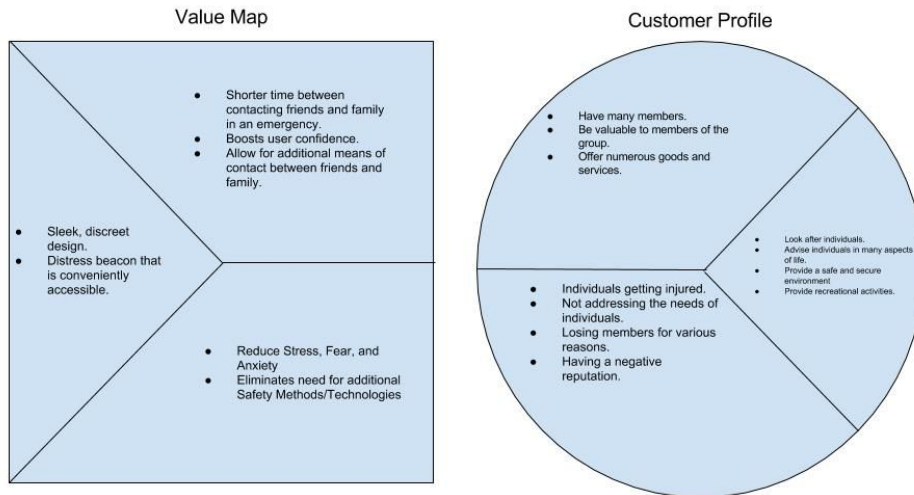
Value Proposition Canvases



Value Proposition Canvas (Version 0)



Value Proposition Canvas (Version 1)

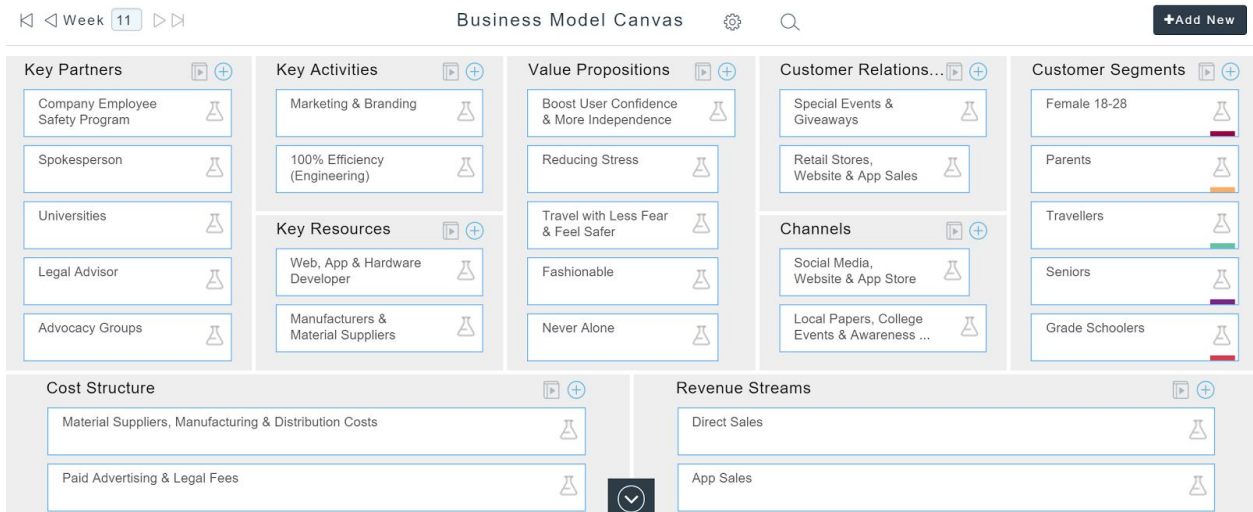


Value Proposition Canvas (Version 2)

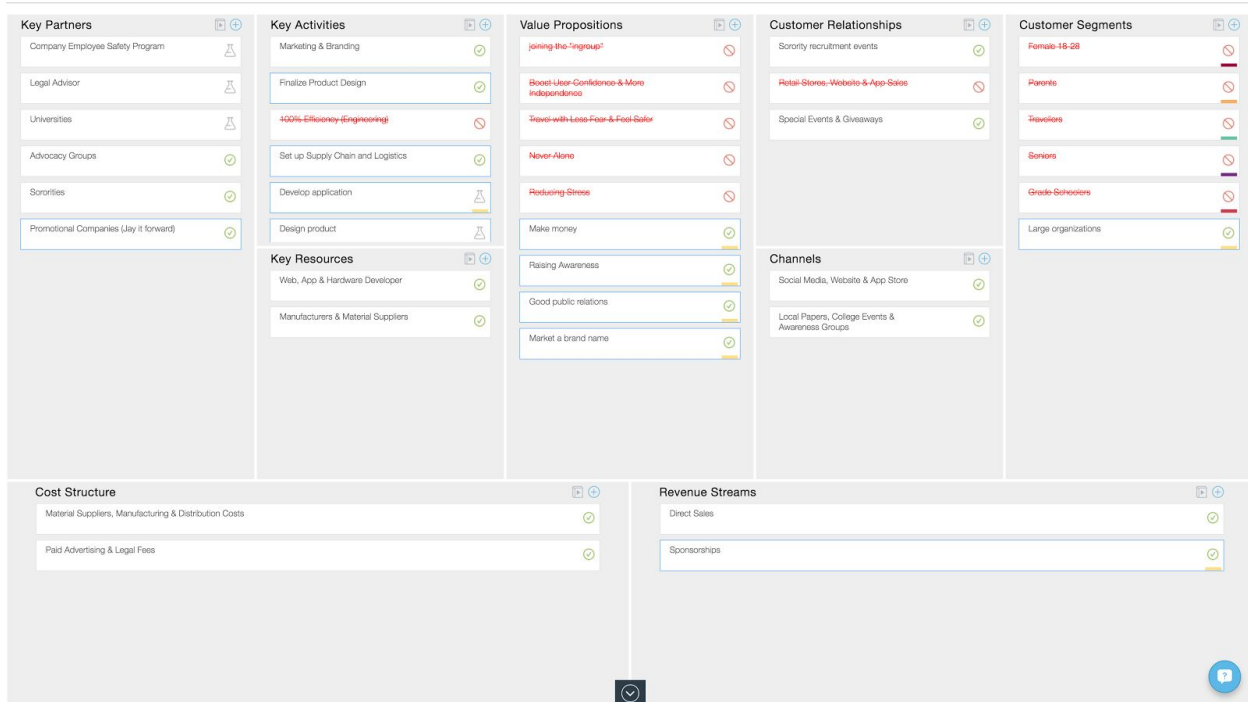
Business Model Canvases



Business Model Canvas (version 0)



Business Model Canvas (version 1)



Business Model Canvas (Current)

Interviewee List

- Elsie- Student, Cal Poly, SLO
- Analicia Rogel- Student, Cal Poly, SLO
- Julihanna Mandeville- Student, Cal Poly, SLO
- Nancy- Student, New York, NY
- Amanda- Employed, Manhattan, NY
- Krizia- Employed, Manhattan, NY
- Tracy Lowy- Employed, Manhattan, NY
- Shweta Panditrao- Employed, Santa Clara, CA
- Raadhika Shah- Student, Cal Poly, SLO (PULSE Peer Advisor)
- Emily Spurgeon- Student, Cal Poly, SLO
- Annelise Barbieri- Student, Cal Poly, SLO
- Kiley Rucker- Student, Cal Poly, SLO (PULSE Peer Advisor)
- Kinsey- Student, Sonoma State University
- Maia Kiley - Women's shelter counselor
- Theresa Fagouri - Professional health educator at Cal Poly (PULSE)
- Nimisha Patel - sorority social chair of AΩE at Cal Poly
- Jay Fox - president and CEO of Jay It Forward, promotional items distribution firm

Current Interview Transcript Format (Large Organizations)

1. Are you concerned about the wellbeing of your members?
2. Are you actively looking to improve the wellbeing of your members?
3. What products do you currently use to advocate your organization's mission?
4. How do you choose your awareness product?
5. How do you market your promotional items?
6. What is your budget for public relation items?
7. How do you measure return on a promotional item?
8. What is your favorite promotional item?
9. What is the typical order size for a promotional item?
10. How important is cost of the promotional item?

Old Interview Transcript Format (Focused on User)

Introduction


"Hi, my name is _____, and I am part of a group in an entrepreneurial class working on our senior project, and we are interested in the area of personal safety. We appreciate your time, it shouldn't take more than 15 minutes."

Initial 10 Questions for Customer Development

1. When was the last time you travelled alone at night?
 - What was the situation?
 - How often?
2. When was the last time you felt unsafe/concerned about your personal safety?
 - Why, where did you feel unsafe? Tell me more about it. How often?
3. How do you react to feeling unsafe?
 - What actions do you take?
4. When was the last time you were lost/in an unfamiliar location?
5. How late do you stay out on weekdays? Weekends?




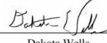


- What are you doing during those times? With who?
- 6. How do you feel and react to nearby emergencies?
 - What would prompt you to take action?
- 7. What kind of accessories and jewelry do you wear? Watches? When? Why? (Observe)
 - When was the last time you wore your accessory?
 - When was the last time you took it off?
- 8. Who is the closest person to you in your life?
 - When is the last time you contacted them?
- 9. How often do you buy the newest phone? (financial, trend question)
- 10. Is there anything else you would like to mention?

Original Team Contract



Senior Project Team Contract

ENGR 459
Fall 2015
October 9th

 <hr/> Diego Fernandez	 <hr/> Michael Roesch
 <hr/> Janel Takeda	 <hr/> Dakota Wells
 <hr/> Nishant Mattu	 <hr/> Tyler Heucke

Instructors:
 Thomas Katona Lynne Slivovsky Jonathan York
 Engineering and Business Departments
 California Polytechnic State University
 San Luis Obispo

Senior Project Team Contract

October 9, 2015

Roles and Responsibilities

Engineering

- Tyler: Digital Software Architect (DSA)
- Nishant: Chief Electrical Engineer (CEE)
- Diego: Structural Integrity Lead (SIL)
- Michael: Product & Production Lead (PPL)

Business

- Janel: Chief Creative Officer (CCO), *Team Leader for Fall 2015*
- Rebecca: Chief Operating Officer (COO)
- Dakota: Business Analyst – Enterprise Resources Planning (ERP)

Commitment and Accountability

The team will hold weekly meetings on Tuesdays from 11:10 am to 12:00 pm and Wednesdays from 6:10 pm to 9:00 pm. Prior to each meeting an email will be sent out with topics to be discussed and tasks to be accomplished during the meeting. Meeting minutes will be sent by email after each meeting covering what was discussed, what tasks were completed and any other need that should be addressed.

Communication Pathways

For direct communication, the Kik app will be used. Reports and other documents will be uploaded via the team Google Drive.

Conflict Resolution

If conflict arises or there is disagreement among the team, a meeting will be held prior to the interference of an advisor. A majority vote of four is required for any major decisions.

Competitor Details

Initial Competitors

We found that all of our competitors encompassed many of the same features and concepts. The designs of our competitors' either resembled a wristband or a keychain, both of which had a feature that resembled a panic button. By researching the companies behind each product, we came to understand that the products resembling jewelry or fashionable accessories did better than the products resembling keychains or other trinkets. What we noticed regarding all of our competitors is that they were all marketed toward individual users, rather than organizations. Our competitors focused largely on the aesthetics of the product which resulted in overall higher prices for the consumer.

Safelet

Safelet is a 'safety bracelet' that lets you alert family, friends, and the police when in danger.



Safelet Wristband

Features: Sends alerts and your location to your guardian network.
Dials an emergency number.
Connects via bluetooth to a smartphone and utilizes a phone application.

Price: \$129

Safelet closely resembled the product we are aiming to create. One feature that it utilizes that our product will not be using is the ability to dial an emergency number: such as 911. Through our customer interviews we have come to understand that users do not always want to have immediate access to the authorities, but would rather be connected to someone close to them.

Another factor of importance is the price. The device resembles a piece of jewelry and the design is reflected in the price of the product.

CUFF

CUFF is a smart device that works with stylish jewelry to keep you feeling safe and connected.



CUFF

Features: In an emergency, can be pushed for two to three seconds to send a text message to predefined contacts.
Connects via bluetooth to a smartphone and utilizes a phone application.
Modular. CUFF can be incorporated into many jewelry styles.

Price: \$60 (Classic Package)

CUFF was one of the most successful competitors we could find. Their product is fashionable, inexpensive, and has the ability to be used in a variety of CUFF accessories. The device resembles a small block that can be inserted in different pieces of compatible jewelry. The block will vibrate when your phone receives a notification and doubles as a safety device for when the user is in danger.

Our product aims to be a discreet fashionable accessory, one that will not be a target for theft. Although less expensive than other competitors, CUFF jewelry resembles high end accessories.

Silent Beacon

The Silent Beacon is a personal emergency alert system that is both wearable and waterproof. The device connects wirelessly to your smartphone allowing you to instantly alert loved ones with your GPS location. It can call emergency personnel, such as 911, in an emergency situation without needing to grab your phone.



Silent Beacon

Features: Alerts user when phone is stolen or missing.
LED lights for visual enhancements and notifications.
Can communicate with phone and trigger alarms.

Price: \$90

Among the keychain designs, the Silent Beacon was the most successful. It has a wide variety of features to meet the needs of several different customers.

The drawback to this product is the initial investment. Many customers found it difficult to invest in a \$90 keychain unless they had a strong need for a safety product.

Revolar

The only purpose of Revolar is to keep the user safe. If the user is ever in danger, the button on the Revolar device can be pushed to send emergency alerts and location information to people close to the user.



Revolar

Features: Alerts emergency contacts when you are feeling unsafe.

Price: \$100

The revolar functions in the same way our device will function: it contacts friends and family of the user. The design allows the user to send two messages: the first for feeling unsafe and the second for emergency situations. The way we plan to differ from this product is by designing our product to resemble a wristband and we plan to offer our product for a lesser price.

Shadow

Shadow is a panic button that allows the user to send emergency notifications to predefined contacts. The device can be used as a keychain, necklace or watch.



Shadow

Features: Panic button that connects to phone application.

Price: \$30

This product was developed by a group of students and was ultimately unsuccessful. It functions in the same way that our product functions: it contacts individuals close to the user.

This product was unsuccessful because of its design. The design itself is unattractive, and the product only has one push button. This prevents the user from cancelling an action if the button was pushed by mistake. We will make sure not to make the same mistakes in our design.

React Sidekick

The React Sidekick is "the world's smallest personal panic button". The React Mobile application allows emergency contacts to track your location in real time as well as receive notifications when you are in an emergency situation.



React Sidekick

Features: Panic button with two settings - "follow me" and emergency.
Device Pairs with phone application.

Price: \$80

The React Sidekick functions similarly to the rest of our competition in the sense that it has two settings: a distress setting and a danger setting. It pairs with the phone app to allow individuals close to the user to be notified of the user's location.

New Competitors

As stated previously, our competitors shifted with the change of our target buyer. Because we are now marketing towards larger organizations, rather than individuals, our new competitors are cheap, massively made promotional items that have some bluetooth capabilities.

Printed Bluetooth Selfie Buttons

Features a remote bluetooth shutter with a CF2032 battery, works with IOS and Android operating systems. Also features an on/off switch on the side, easily pairs with Bluetooth, by simply pressing and holding shutter button for two seconds, key ring attachment. Comes with a small profile and organic shape fits well into pockets.



Bluetooth button

Features: Shutter button and on/off switch

Price: \$10/250u

This bluetooth button is similar to our product in that it is a single-function bluetooth appcessory sold as a promotional item.