

# LSM PROJECT FINAL REPORT

**TOPIC – Healthcare and Safety System In Vehicles**



**Submitted to :**

Dr. Saju B  
Professor Senior  
School of Business (VITBS)

# **Executive Summary**

**Title of Project:** Healthcare and Safety system in vehicles

**No of Students:** 4

**Name:**

Kshitiz Goyal – 19MIS1009

Naman Jain – 19MIS1040

Balraj Agrawal – 19MIS1132

Swetaswa Basak – 19MIS1049

## **Brief description about the project:**

WHO states cardiovascular diseases as the number one cause of deaths across the whole world.

India has witnessed an alarming rise in the occurrence of cardiovascular diseases, strokes, diabetes and cancer diagnoses in the past 25 years. The chance of these conditions occurring in a manner which is disruptive and dangerous is also high while driving. This situation requires our attention as both the driver and others around them are at risk. Severe injuries may mask the role of a health ailment.

This hypothesis is supported by the data collected on sleeping and background accidents. Reducing the risk or at the very least, minimizing the consequences of the accident would greatly increase the chance of survival for the victims.

## **Outcome of project:**

A Health and Safety System Device which monitors the driver in a constant, consistent and accurate manner, which could potentially save lives by alerting all passengers in the car that the system detects something wrong with the driver.

## **BONAFIDE CERTIFICATE**

Certified that this project report entitled “Healthcare and Safety System in Vehicles” is a bonafide work of the following Students:

<b>S.No</b>	<b>Registration No</b>	<b>Name</b>
<b>1</b>	<b>19MIS1009</b>	<b>Kshitiz Goyal</b>
<b>2</b>	<b>19MIS1040</b>	<b>Naman Jain</b>
<b>3</b>	<b>19MIS1049</b>	<b>Swetaswa Basak</b>
<b>4</b>	<b>19MIS1132</b>	<b>Balraj Agrawal</b>

Who carried out the Project work under my supervision and guidance.

Dr. Saju B  
Professor Senior  
School of Business (VITBS)  
VIT UNIVERSITY, CHENNAI  
Chennai – 600 127

## **ACKNOWLEDGEMENT**

We would like to express our special thanks of gratitude to our teacher Dr. Saju B without whom we could not have completed the project as well as VIT University for giving us this wonderful opportunity to learn and research about our line of interest and showcase our talent.

Our sincere gratitude to Sir for his invaluable time, acknowledging that, this project would not have been possible without his assistance and support.

We also take this opportunity to thank all the faculty of the School for their support and their wisdom imparted to us throughout the course.

We thank our parents, family, and friends for bearing with us throughout the course of our project and for the opportunity they provided us in undergoing this course in such a prestigious institution.

## **Team Members**

**Kshitiz Goyal – 19MIS1009**

**Naman Jain – 19MIS1040**

**Balraj Agarawal – 19MIS1132**

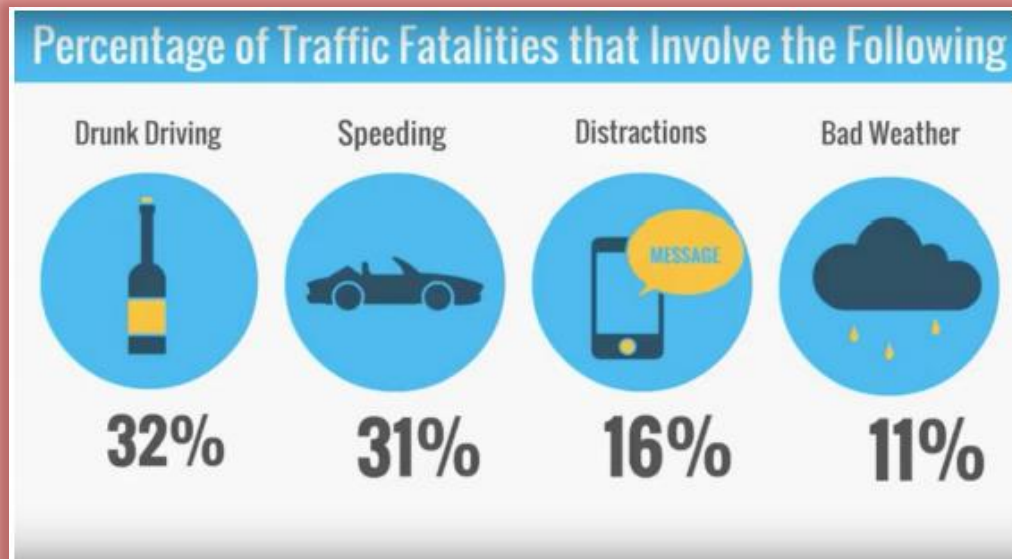
**Swetaswa Basak – 19MIS1049**

## Opportunity Identification:

Every year there is about 151k fatalities due to accidents.

Cardiovascular diseases are a major contributing factor to vehicular accidents. Drivers put themselves and others at risk. Driving while tired or inebriated also increases the likelihood of an accident. Momentary loss in control is enough to turn the situation into something far more dangerous. Inability to call for assistance decreases the chances of survival for the driver.

Thus we got an opportunity to reduce the number of fatalities due to road accidents by our product.



## **Idea Generation and Brief Description:**

WHO states cardiovascular diseases as the number one cause of deaths across the whole world. India has witnessed an alarming rise in the occurrence of cardiovascular diseases, strokes, and diabetes and cancer diagnoses in the past 25 years. The chance of these conditions occurring in a manner which is disruptive and dangerous is also high while driving. This situation requires our attention as both the driver and others around them are at risk. Severe injuries may mask the role of a health ailment. This hypothesis is supported by the data collected on sleeping and background accidents. Reducing the risk or at the very least, minimising the consequences of the accident would greatly increase the chance of survival for the victims.

Our solution is a Health and Safety System Device which monitors the driver in a constant, consistent and accurate manner, which could potentially save lives by alerting all passengers in the car that the system detects something wrong with the driver. An imaging device would be placed in front of the driver, and will be responsible for detecting whether or not they are awake. If the response is negative, an alarm will be activated in a bid to wake the driver up. In the case of automated cars and vehicles, if the driver is sleeping, then the car will automatically shift to the emergency lane and stop. Strokes or other cardiovascular related emergencies are dealt with by informing the nearest hospital that the driver has suffered from an attack, and if the car possesses an autopilot feature, it will slow down and eventually stop in order to prevent further damage. The sensors provided in the driver's seat will check the driver's blood pressure, heart rate etc. <sup>3</sup> We can also integrate existing technology to obtain more accurate data about the driver. Smart watches and other devices which have inbuilt sensors that monitor these parameters can be linked and utilized to reduce the hardware required for its implementation.

We need to evaluate the potential risk of a driver's acute incapacity to drive, and compare the risks with other major risks related to fatal motor vehicle accidents. Using our product, we wish to create a safer world for all drivers and motorists, in order to drive on the roads to a better future.

### **Target Audience:**

1. Automobile manufacturers
2. Distributors and suppliers of automotive safety systems
3. Industry associations and automotive experts
4. Automotive safety feature manufacturers
5. Automotive component manufacturers
6. Autonomous vehicle software providers



## **Market Condition and size:**

- The growing vehicle fleet and the consequent rise in the focus on vehicle safety are the key factors driving the demand for safety systems in automobiles.
- As a rise in the number of vehicles leads to an increase in the risk of road fatalities, the governing authorities in both the developed and developing regions are introducing stringent regulations for enhancing road safety.
- In line with this, automotive manufacturers are launching safety features in cars and are also investing in R&D activities to incorporate the latest technologies in these systems.
- Moreover, the growing demand for autonomous vehicles is further driving the market as active safety systems form a crucial component in these vehicles.
- So according to all these market opportunities our product will be success.



## **Technology Trends:**

When the concept of driving came into existence, no one had imagined that one day; these vehicles would be rife with technology. Today, technology has revolutionized the way vehicles function, making customer safety extremely important.

Nowadays, following safety protocols are strictly monitored:

### **1. ABS for 2-wheelers below 125cc**

The new safety policy mandates all 2-wheelers above 125cc to be equipped with ABS system. However, we expect the trend to trickle down to 2-wheelers below this category as well. There are technologies available that are light and cost-effective, making this a reality in 2021.

### **2. Electronic Stability Control (ESC)**

Now that ABS is a mandatory requirement, we need to look towards what's next. The ESC system continually evaluates the data from the wheel speed sensors, steering angle sensor, yaw rate, and lateral acceleration sensor. It compares the driver's input with the vehicle's actual behavior.

### **3. ADAS Features**

The future is about autonomous driving. While we are still some time away from a fully autonomous vehicle on our roads, the next natural step is Advanced Driver Assistance Systems (ADAS).

### **4. ARAS Features**

With an increase in awareness about safety features, the year 2021 will also witness a rise in the demand for the Advanced Rider Assistance System (ARAS). Some of these technologies are available in higher-end 2-wheelers globally, but the low-cost models could be considerable in India.

### **5. Passive Safety Features**

Airbags, seatbelts, and child-lock systems are the norm. However, the Passive Safety Systems - the technologies in action during and after the crash - will continue to be the focus in 2021.

## **Startup Vision:**

1. To provide an efficient healthcare and safety system in vehicles.
2. To reduce the number of fatalities caused by road accidents every year.
3. To provide a seamless and real-time interaction between the user and the system.
4. To make the product budget friendly and inclusive.
5. To prevent the deaths caused by accidents due to late discovery of the accident.

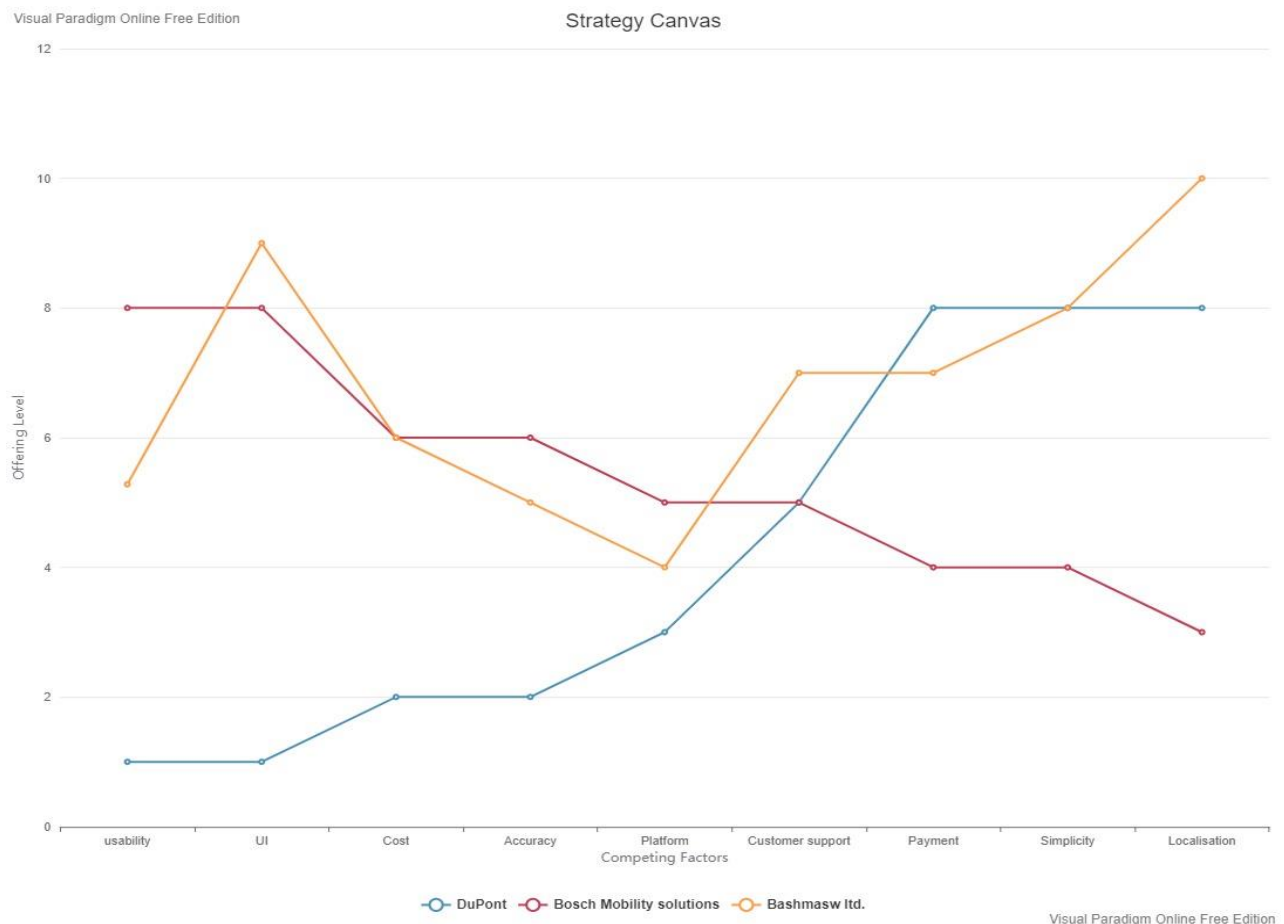
## **Customer Value proposition:**

1. Monitoring the driver's vital signs and behavior recognition and check for irregularities.
2. We create awareness about customer's safety.
3. Our system will instantaneously react towards any situation to ensure customer safety.

## Blue Ocean Strategy Canvas

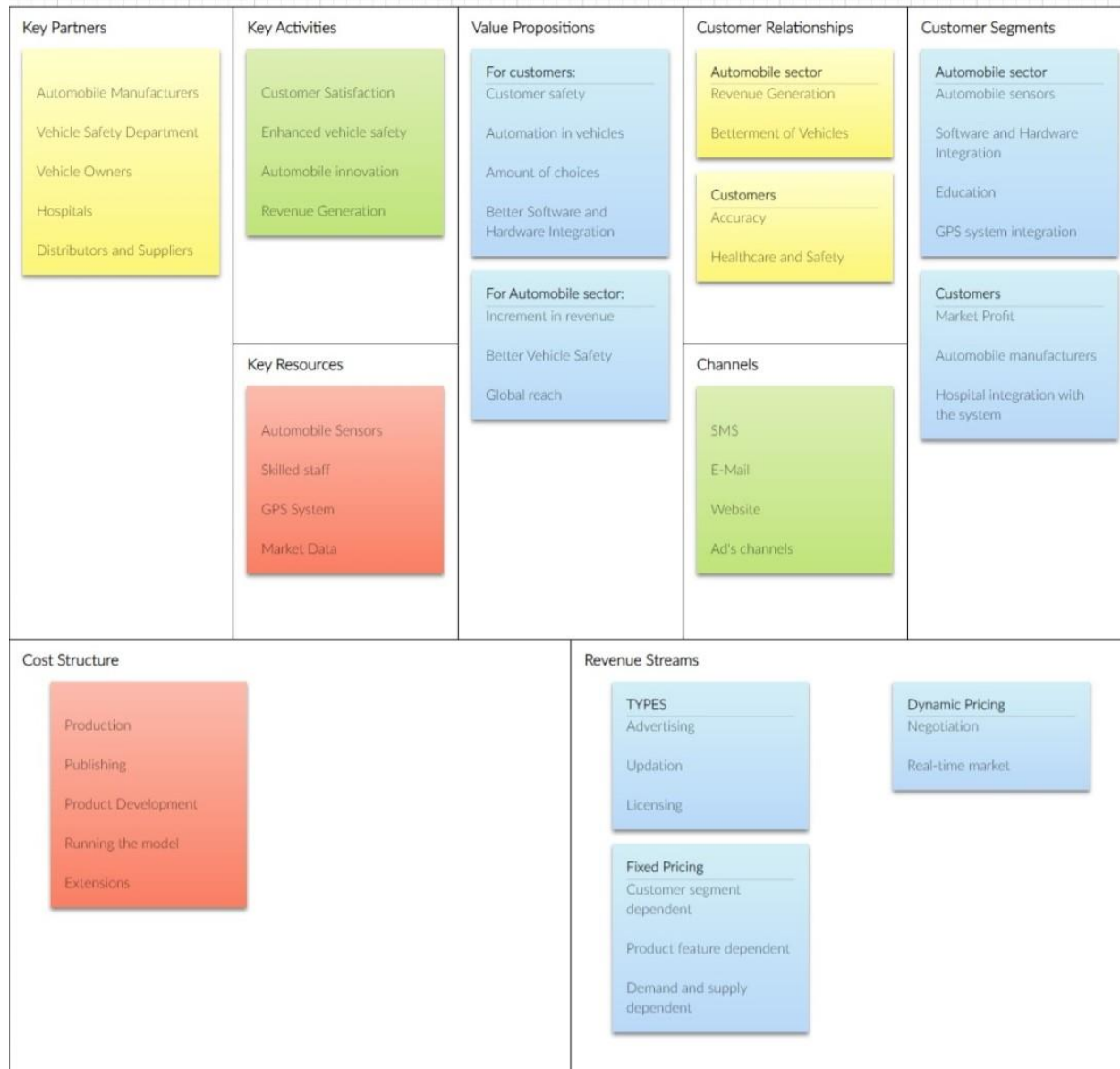
A Blue Ocean strategy canvas is a line graph that plots functions/factors against importance for a company or an organization and then overlays competitors or industry benchmarks. In this way, information can be built to help formulate a competitive strategy.

The business model for our healthcare and safety system can be depicted using the following Blue Ocean Strategy Canvas:



# Business Model Canvas

## Healthcare and Safety System in Vehicles



## **COST STRUCTURE :**

Production - The required application we are supposed to be programming will require developers. We are willing to hire developers who can easily handle the ups and downs as well as creating a minimal interface for the interaction with the consumers,

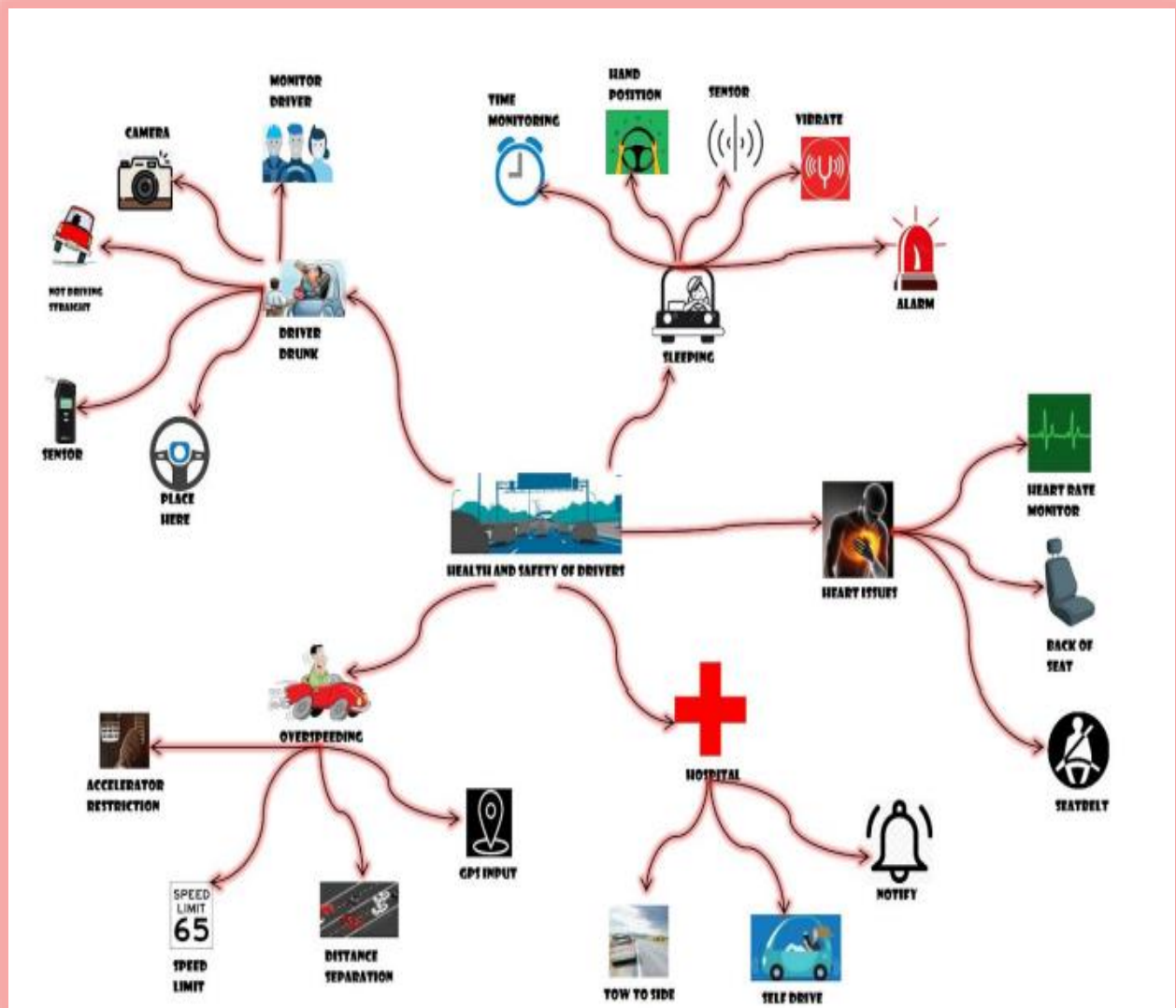
Publishing - The publishing of this business model will require less effort as the audience we are targeting will mostly be educated and will be well aware about their safety while driving.

Product Development - In step-by-step process we will increase our area of work as the programme will become trustworthy in the eyes of the people. We will step up the work by working on the entire district and then some states.

Running the model - We will be investing certain expenses composed of fixed and variable costs right from the beginning. The investment will be done to various branches of people we will be hiring. The business may go through high or low stages but providing the best experience to the customers will always be our priority.

Extension – If this business model will run seamlessly we will be extending our reach, thus profiting the automobile sector.

# MIND MAP



## **Minimum Viable Product (MVP)**

Key features of our MVP are:

- 1) Heart rate monitor on the seat belt or back of the driver's seat which will be checking the heart rate at regular intervals and will give an immediate update to the nearest hospital in case of cardiovascular failures to the driver with help of GPS location of the vehicle.
- 2) Facial recognition software utilized to identify patterns in sleepy drivers which uses alarms for alerts in case of sleepy and drowsiness; this can also be disabled with the help of a touch button.
- 3) Use of ultrasonic distance sensors for cars on highways to avoid collision between vehicles, this feature also has automatic braking which can be enabled and disabled with the help of buttons. Since this feature would avoid over speeding on highways, we have kept it in two ways, one is an alarm alert and the other is automatic braking. The automatic braking feature can be disabled also.



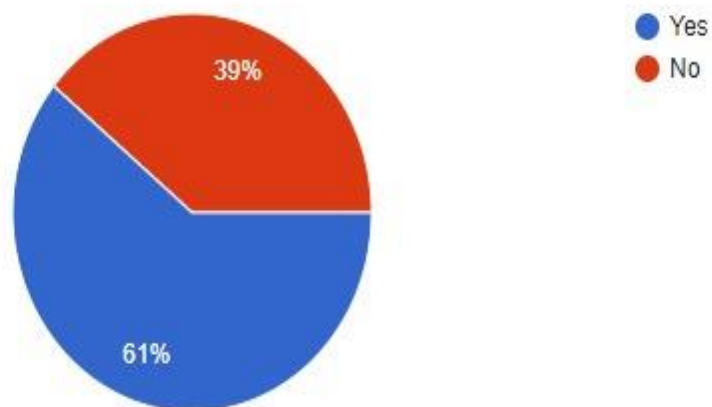
## **Experimental Refinement**

We have refined our terms and strategies for potential customers through an opinion survey using the process as indicated: First, we pitch an idea to the public as a survey and based on the opinions and feedback we do background research on that idea and present it to the public after the research is done Based on the background research and survey a hypothesis is constructed and we test (apply in real world) and check if the procedure is working or not.

### **SURVEY:**

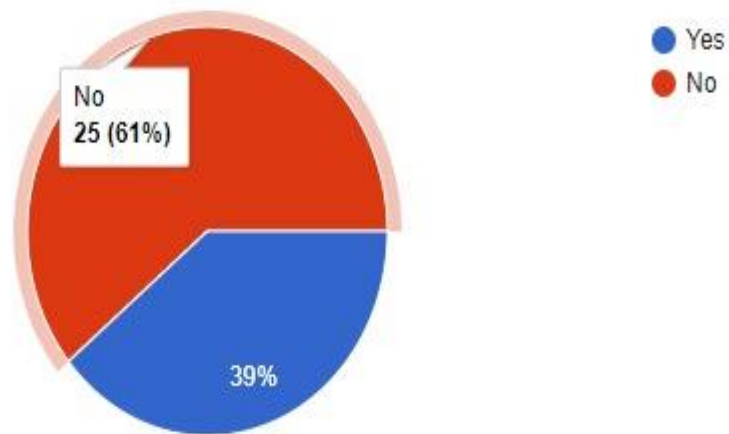
Are you using any safety assistance in your vehicles?

41 responses



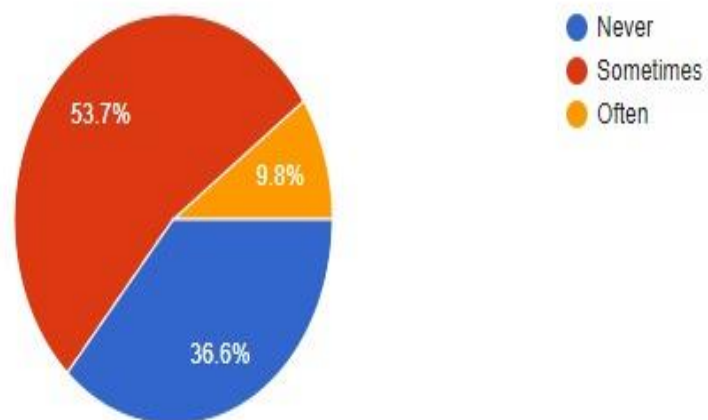
Have you met with an accident?

41 responses



Have u ever felt drowsy or sleepy while driving?

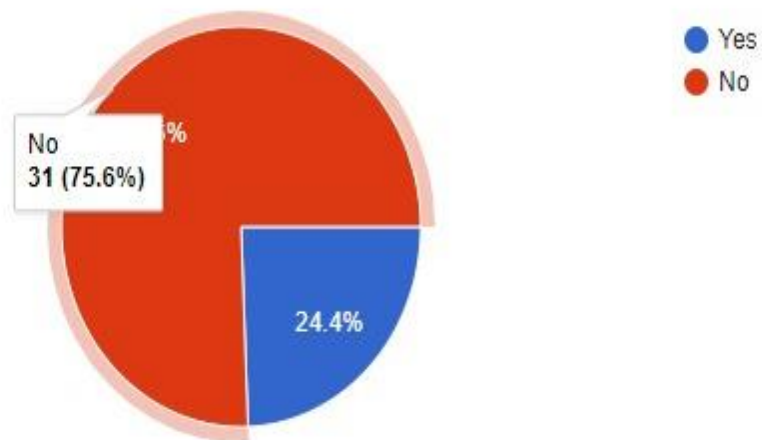
41 responses



---

Have you paid fine for over-speeding?

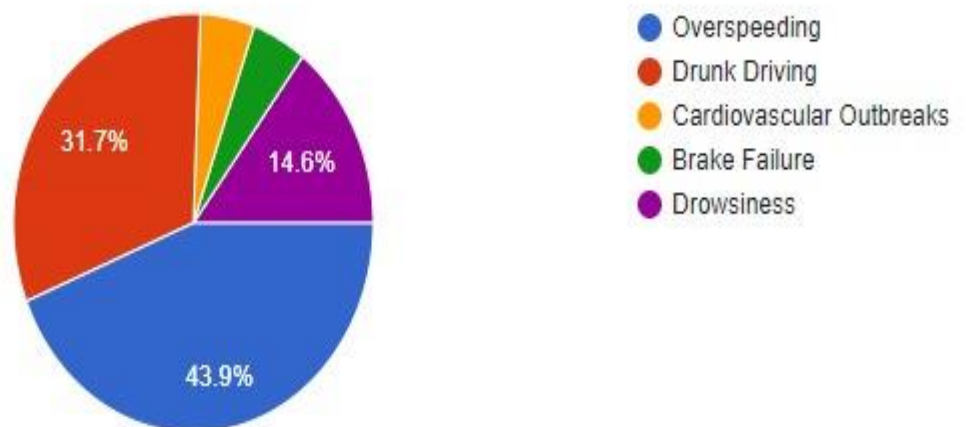
41 responses



---

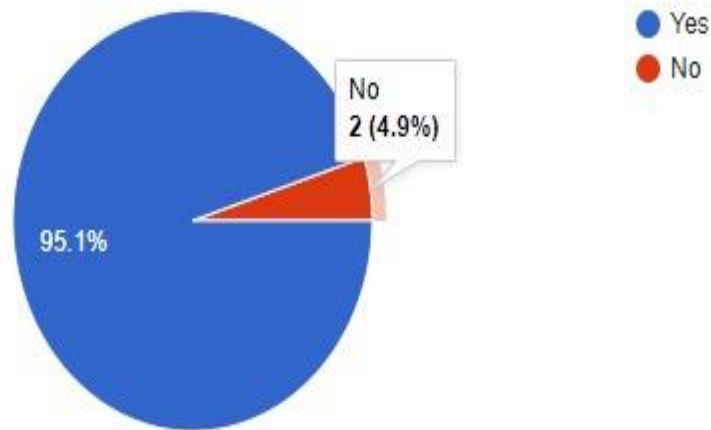
What do you think that why accidents occur?

41 responses



Do you think that the automobile sector needs a safety system?

41 responses



### **Insights from Survey:**

As from the survey we can see that people are using some or other safety assistance but a large part which is around 40% is still not using it so we need to create awareness about using our safety systems in vehicles for their own safety.

Around 40% of the people already met with an accident this shows that there is an alarming need of healthcare and safety system and our product will prevent these accidents from happening.

Around 95% of the people want a safety system in their vehicles so keeping it in mind we can target big vehicle manufacturers to collaborate with us or we can directly target the audience by the features of our system for their safety.

From the survey we can see that people think there are many reasons for a accident and our safety system has all the features required to tackle all the reasons and prevent the accidents.

## **REVENUE STREAM:**

1. Product based advertisement i.e. the company of components we are using for developing our product.  
For example: If we are using only Cameras of Bosch security systems in our product for image recognition in a way we are advertising it.
2. Advertisement of different products on our online platform.
3. Charge of 5-10% of the total price paid by the customer for our product.
4. Brand Endorsement: Automobile manufacturing brands may collaborate with us to provide assistance and financial help.

## **MARKETING PLAN:**

### **Why People Will Buy from Us -- Not our Competitors**

1. The marketing strategy for our mart would be to promote our company's name on some famous youtuber videos like REALSHIT, BB ki Vines. Some of the trending channels on YouTube can promote our company's name on their videos. These Youtubers are mainly followed by youth. And as we know, today's youth believe in trying new things.

2. SEO, acronym of Search Engine Optimization is the process of affecting the visibility of a website or a web page in a web search engine's unpaid results. As we all know, Google is the highly used search engine worldwide. SEO makes your website to come on the search results earlier than other websites.

### **Marketing strategies for online service center:**

The biggest challenge that online store owners face is increasing traffic to their e-commerce store. Knowing where to start and how to stand out from the thousands of other shops that are competing for the same traffic is a daunting challenge.

The explosion of growth in the e-commerce world has only made it tougher for e-commerce sites to attract the critical mass of visitors needed to stay in business. Now the concept of marketing is very simple, it includes how to increase the number of buyers for our product and how to maximize the revenue so generated.

It's going to take constant work and promotion if we want regular customers, and part of that is going to be a willingness to try new tactics, some that might even be out of our comfort zone. We won't know what works for we till we try it, and just like a physical location, customers won't show up if they don't know we're there. Now, here are some of the ways that we figured out to be suitable for our pushing the marketing limits of our shop.

### **❖ Use Email Marketing to Remind Customers to Buy :**

When you first open your web store, you'll want to send out an email announcing it to your database. Make sure it links directly from the email to your store.

Once you've done this, start sending out weekly (if possible) **newsletters that highlight your products** with great images and persuasive, yet succinct, content that links directly to each product for easy purchasing.

When you have sales, be sure to announce and promote them via email so customers can take advantage of your exclusive pricing right away. MailChimp is a free, easy-to-use option for small business owners.

And while the inclusion of your products isn't guaranteed, you can up your chances by taking amazing photos of your products and writing descriptive, typo-free product descriptions.

## ❖ START A BLOG :

A blog is more than a great way to **establish yourself as a leader** in your industry, it's also an indirect way to help promote your online service.

Include one relevant link back to your store in each blog post (either link the home page of your store or link directly to a product) and make sure each blog is informative and helpful. (Don't forget to link any images back to your web store or a specific product too!)

If the content isn't strong, it's not going to do you any good. Quality blog posts will help you grow your online business, however, so if you have the time, it's a great project to invest in.



## ❖ Branch Out with Social Media :

Social media is essential if you want to promote your online service effectively. But, as with anything, **it takes effort and time to build followers.**

Depending on what you have time for (or if you can delegate tasks to anyone else to help you), you will want to check out the following sites to help market your store: (And continually try new sites to figure out what bests works for your business.)

- Facebook
- Twitter
- Instagram
- Pinterest
- YouTube
- Google+
- LinkedIn
- StumbleUpon (Mix)
- Quora
- Periscope





### ❖ Google Ads :

Using Google Ads for search engine marketing gives you an opportunity to bid on keywords, so that you can show up first in search engine results pages. Getting the coveted “top spot” is what search engine optimization is all about — but, a head’s up, Google Ads will still show up first.

Search engine marketing is a great way to advertise your website because it doesn’t require any design and can be very effective in driving new traffic. You’ll get results in real time and can adjust your campaign strategies based on performance as you go.



### ❖ Get Customers to Review you :

Word of mouth is a **very powerful marketing tool**. Review sites like Yelp, Google Local, and Yahoo Local are very popular with consumers, and you should aim for your business to have as many reviews on them as possible.

When a customer makes a purchase, send them a follow-up email asking them to review their experience with you on ‘x’ review site of your choosing.

Don’t bribe them with free things for a positive review; focus on outstanding customer service and fast shipping instead and let your business’ great reputation build organically.

## **FUNDING PLAN:**

### **1. Venture capital:**

The business of venture capital is frequently misunderstood. Many start-up companies resent venture capital companies for failing to invest in new ventures or risky ventures. People talk about venture capitalists as sharks—because of their supposedly predatory business practices, or sheep—because they supposedly think like a flock, all wanting the same kinds of deals.

This is not the case. The venture capital business is just that—a business. The people we call venture capitalists are business people who are charged with investing other people's money. They have a professional responsibility to reduce risk as much as possible. They should not take more risk than is absolutely necessary to produce the risk/return ratios that the sources of their capital ask of them.

Venture capital shouldn't be thought of as a source of funding for any but a very few exceptional startup businesses. Venture capital can't afford to invest in startups unless there is a rare combination of product opportunity, market opportunity, and proven management. A venture capital investment has to have a reasonable chance of producing a tenfold increase in business value within three years. It needs to focus on newer products and markets that can reasonably project increasing sales by huge multiples over a short period of time. It needs to work with proven managers who have dealt with successful start-ups in the past.

If we are a potential venture capital investment, we probably know it already. We have management team members who have been through that already. We can convince our self and a room full of intelligent people that our company can grow ten times over in three years.

If we have to ask whether our new company is a possible venture capital opportunity, it probably isn't. People in new growth industries, multimedia communications, biotechnology, or the far reaches of high-technology products, generally know about venture capital and venture capital opportunities.

## **2. Commercial lenders:**

Banks are even less likely than venture capitalists to invest in, or loan money to, startup businesses. They are, however, the most likely source of financing for most small businesses.

Startup entrepreneurs and small business owners are too quick to criticize banks for failing to finance new businesses. Banks are not supposed to invest in businesses, and are strictly limited in this respect by federal banking laws. The government prevents banks from investment in businesses because society, in general, doesn't want banks taking savings from depositors and investing in risky business ventures; obviously when (and if) those business ventures fail, bank depositors' money is at risk. Furthermore, banks should not loan money to startup companies either, for many of the same reasons. Federal regulators want banks to keep money safe, in very conservative loans backed by solid collateral. Startup businesses are not safe enough for bank regulators and they don't have enough collateral.

Why then do I say that banks are the most likely source of small business financing? Because small business owners borrow from banks. A business that has been around for a few years generates enough stability and assets to serve as collateral. Banks commonly make loans to small businesses backed by the company's inventory or accounts receivable. Normally there are formulas that determine how much can be loaned, depending on how much is in inventory and in accounts receivable.

A great deal of small business financing is accomplished through bank loans based on the business owner's personal collateral, such as home ownership. Some would say that home equity is the greatest source of small business financing.

## **3. The Small Business Administration (SBA):**

The SBA makes loans to small businesses and even to startup businesses. SBA loans are almost always applied for and administered by local banks. You normally deal with a local bank throughout the process.

For startup loans, the SBA will normally require that at least one third of the required capital be supplied by the new business owner. Furthermore, the rest of the amount must be guaranteed by reasonable business or personal assets.

The SBA works with “certified lenders,” which are banks. It takes a certified lender as little as one week to get approval from the SBA.

#### **4. Other lenders:**

Aside from standard bank loans, an established small business can also turn to accounts receivable specialists to borrow against its accounts receivables.

The most common accounts receivable financing is used to support cash flow when working capital is hung up in accounts receivable. For example, if our business sells to distributors that take 60 days to pay, and the outstanding invoices waiting for payment come to \$100,000, our company can probably borrow more than \$50,000. Interest rates and fees may be relatively high, but this is still often a good source of small business financing. In most cases, the lender doesn’t take the risk of payment—if our customer doesn’t pay us, we have to pay the money back anyhow. These lenders will often review your debtors, and choose to finance some or all of the invoices outstanding.

Another related business practice is called factoring. So-called factors actually purchase obligations, so if a customer owes us \$100,000 we can sell the related paperwork to the factor for some percentage of the total amount. In this case, the factor takes the risk of payment, so discounts are obviously quite steep.

## **CONCLUSION:**

Our product will have following advantages:

- It provides an efficient way to reduce the number of fatalities caused by accidents.
- Our product is user friendly and automated.
- Our product can be scaled up nationally.

Hence these features will ensure a successful deployment and maintenance of our product. The fact that presence of this automation in our system coupled with extra ordinary features like sleep monitoring, vital sign check and many more will really help in developing a “Healthcare and Safety System” in automobile industry.

Hence, we are committed to play our part in making our vision a reality.

## **References:**

<https://www.electronicsspecifier.com/products/sensors/active-and-passive-automotive-safety-systems>

<https://roadsafetyfacts.eu/active-safety-systems-what-are-they-and-how-do-they-work/>

<http://toolkit.irap.org/default.asp?page=treatment&id=43>

<https://www.calljacob.com/top-5-most-important-safety-features-for-cars/>

[http://yadda.icm.edu.pl/yadda/element/bwmeta1.element.baztech-03bedeea-1a1d-4f93-967d-86cf644197ac/c/Wozniak\\_Modern.pdf](http://yadda.icm.edu.pl/yadda/element/bwmeta1.element.baztech-03bedeea-1a1d-4f93-967d-86cf644197ac/c/Wozniak_Modern.pdf)