

*Project for the subject*

# **INNOVATION & ENTREPRENEURSHIP (UTA012)**

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**Group No.: ECE8\_1**  
**Project Title: AirHelm | Safe and Hassle-free Helmets**

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**THAPAR INSTITUTE**  
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(Deemed to be University)

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# CERTIFICATE

This is to certify that the project report on, "*AirHelm – Safe and Hassle-free Helmets (GROUP NO. 1)*" being submitted by **Mr. Saptbir Singh, Mr. Shouvik Misra, Ms. Shrutika Gupta, Mr. Shubham Chawla, Mr. Shubham Mittal and Ms. Anubhuti Gupta** to the Venture Lab, Thapar Institute of Engineering and Technology, Patiala for the fulfillment of the course requirement of **INNOVATION & ENTREPRENEURSHIP (UTA012)** is a bonafide record of work carried out by us in conformity with the rules and regulations of the institute.

The results presented in this report have not been submitted, in part or full, to any other University or Institute for the award of any degree or diploma.

Dated: 7/04/2018

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We would like to extend our gratitude to **Dr. Shenna Chhabra** for helping us along and giving us important insights during the research and Business Model Canvas.

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# NOMENCLATURE AND ABBREVIATIONS

List of Abbreviations:

Fig.	Figure (Illustration)
Tab.	Table
BSI	British Standards Institution
ISI	Indian Standards Institute
TV	Television
i.e.	That is
USP	Unique Selling Point
App	Mobile Application
Ad.	Advertisements

# Chapter 1 – Opportunity Analysis

## 1.1 Opportunity Identification

### Safety Issues

A lesser known fact is that helmets that we traditionally use can protect our skull from breaking but there are not very effective against preventing serious congestions in brain. Head congestions are very harmful as they could lead to brain hemorrhage. A person can even get paralyzed due to congestions So the helmets we traditionally use are not the safest solution to prevent all kinds of head injuries. A second concern is the neck pains that sometimes arise after long use of these helmets owing to the bulky nature of them.

### Handling Problems

Traditional helmets also cause a significant amount of peripheral blockage of vision and for a people who wear spectacles the bulky nature and traditional design of helmets leads to more handling problems.

These problems faced by many individuals led to the evolution of our new product that is a kind of Air helmet. So, for fixing all these problems and recognizing it as an entrepreneurial opportunity we have decided to start AirHelm.

## 1.2 Solutions Proposed

Regular small and light weight helmets. These helmets are not much different from the traditional bulky helmets but are little easier to handle from previous ones. But some issues of vision hindering especially for individuals wearing spectacles still prevail.

Air helmet is modern style helmet where you have wear a strip like instrument under your shirt and provides a practical solution to all of the problems mentioned above by blowing up by air and forming a protective covering around the user's head on detection of impact.

This solution was first introduced by Hovdings whose sales are limited in countries like Europe and Japan, therefore AirHelm shall be the first to implement this idea in India.

## 1.3 Uniqueness of solution

It's one of the safest helmet one can ever wear till date for two wheelers, as it could also protect from brain congestions. AirHelm goes under very strict BSI standard testing, therefore it can absorb up to three times more shocks under heavy impacts.

Easy to wear and doesn't hinders the vision moreover doesn't mess with the hairstyle as it could just be fixed at collars of your shirt, AirHelm brings all of that in one place. Certainly, vital for young drivers who want to become a fashionable and safe at the same time.

Even children could wear it while sitting at back with their parents. It's seen that children are reluctant to wear helmets but now parents and children both would be happy as they need not to wear bulky helmets.

#### **1.4 What problems in market is solved by your solution?**

Currently, there is a constant decline in the number of cycle sales. This is due to the fact that urban cyclists do not find Indian roads safe for long commutes and even for casual strolls. With safe and hassle-free design of our helmets, there will be a growth of cyclists and we will start to see a green revolution in India as well.

#### **1.5 Identification of users and customers**

Due to rash driving and no proper lanes for cyclists in India, cyclists don't feel safe to ride cycles as they are more prone to accidents. Other than that motor cyclists often don't wear helmets as they hinder vision and are bulky in nature.

Our product also targets the formula one drivers as traditional helmets tend to obstruct their view and also come with added weight. Racers often feel claustrophobic wearing heavy helmets at high speed.

There are no proper size for small children as well. Due to this fact also, many of the kids don't find helmets comfortable to wear. But with our AirHelm, they don't have to worry about size as it will automatically wrap around their head.

#### **1.6 How will the target users be benefited by the solution?**

Our AirHelm will increase the convenience for users as it comes with weightless design and no vision-hinder problems. People who feel claustrophobic wearing the traditional helmets, our product will be a perfect solution for them.

Very important aspect of our product is that it provides the user protection against head congestion whereas traditional helmets fail to do so which has been the reason of many casualties according to our research.

Available in many shapes and sizes. People belonging to any age group can wear our AirHelm as they will have minimal weight.

#### **1.7 How will users discover and adopt the solution?**

The major fraction of our target customers will discover and tend to adopt our solution through the mode of advertisement through TV, newspapers and magazines and people encounter with digital media all the time.

Also, we will be conducting public surveys that will tend to educate people about the pros of AirHelm and why is it more useful and safer.

Digital marketing will also be our major mode of advertisement as everyone today has a digital account or is connected to the world.

## 1.8 How the market segment will get affected by the solution?

With Make-in-India having its rise time in India, our regular need of custom airbag solution will cause a demand in airbag industry. As time passes and with product maturity, many more company shall arise in this market and this will indeed help airbag industry grow in India.

This may even affect the sales of traditional helmets and soon there will be a rise in cyclists' number in India contributing to greener and cleaner environment.

## 1.9 Opportunity Canvas

Opportunity Canvas		Title: AirHelm   Safe and Hassle-free Helmets	Date: _____	
			Iteration: _____	
<p><b>Users &amp; Customers</b> What type of users and customers have the challenges your solution addresses? Look for differences in user's goals or uses that would affect their use of the product. Separate users and customers into different types based on those differences that make a difference. It's a bad idea to target "everyone" with your product.</p> <p>General Audiences - Urban Cyclists - Motor Cyclists - Small children</p> <p>Specific Audiences - Formula one drivers - Off Road drivers</p>	<p><b>Problems</b> What problems do prospective users and customers have today that your solution addresses? What needs, goals, or jobs-to-be-done should your solution address? - Traditional Helmets are bulky and heavy therefore uncomfortable to use. - Hinder vision of driver. - Doesn't protect against head congestions.</p> <p><b>Solutions Today</b> How do users address their problems today? List competitive products or work-around approaches your users have for meeting their needs. - Traditional bulky and heavy helmets. - Hovding air helmets, currently active in europe and japan only.</p>	<p><b>Solution ideas</b> List product, feature, or enhancement ideas that solve problems for your target audience. - Light weight. - Protection against head congestions. - Trice better in absorbing shocks. - Doesn't hinder vision.</p>	<p><b>How will users use your solution?</b> If your target audience has your solution, what will they do differently as a consequence? And, how will that benefit them? - Convenient to use. - Can cover head of all sizes and shape. - Easy to carry. - Tracks user activity and presents on app.</p> <p><b>Adoption Strategy</b> How will customers and users discover and adopt your solution? - Basic Advertisements. - Regular Surveys. - Digital Marketing. - Brand Ambassador.</p>	<p><b>User Metrics</b> What specific user behaviors can you measure that will indicate they try, adopt, use, and place value in your solution? - Database of our customers will be maintained on the time of purchase. - Daily activity will be monitored using linked app. - Monitoring their frequency of use will allow us to improve our product.</p>
<p><b>Business Challenges</b> How do the customers' and users' and their challenges above impact your business? If you don't solve these problems for your customers and users, will it hurt your business? How? - Research and Development. - Reluctance to try new product by Indian market. - Testing under government regulations and standards for BSI/ISI Certification. - Rasing funds using Kickstarter programmes and angel investors.</p>	<p><b>Budget</b> 1. What might cost your organization if you don't create this solution? 2. What might your organization earn or save if you do? 3. Given that, what would your organization budget to create this solution? - Initial investment of 15 crores required to setup capital and initial raw materials. - 10 crores of recurring cost will be recovered by product sales in under two years.</p>	<p><b>Business Benefits and Metrics</b> What business performance metrics will be affected by the success of this solution? These usually change as a consequence of users actually buying and using your solution. - With regular demand of airbags, there will be a boom in airbag industry. - scope of improvement and cheaper products. - A boom in number of cyclists encouraging greener and cleaner India. - Creation of a completely new market.</p>		

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(Fig. 1 – Opportunity Canvas Model)



# Chapter 2 – Customer Validation Survey

## 2.1 Sample from used for customer survey

In the options provided below selecting

- 1 - Means that you strongly disagree with the statement
- 2 - Means you disagree to some extent
- 3 - Means you are neutral about the statement
- 4 - Means you agree to certain extent with the statement
- 5 - Means you strongly agree with the statement

Q1. What's your age?

Below 15 years	15-25 years	25-45 years	Above 45 years
----------------	-------------	-------------	----------------

Q2. Do you ride any two-wheeler?

a. Yes	b. No
--------	-------

Q3. How often do you use helmets?

1	2	3	4	5
---	---	---	---	---

Q4. How safe do you feel using traditional helmets?

1	2	3	4	5
---	---	---	---	---

Q5. Do you find traditional helmets comfortable?

1	2	3	4	5
---	---	---	---	---

Q6. How serious injuries you have faced while wearing traditional helmets, if any?

1	2	3	4	5
---	---	---	---	---

Q7. How willing will you be to buy a slightly expensive but safe and hassle-free helmet?

1	2	3	4	5
---	---	---	---	---

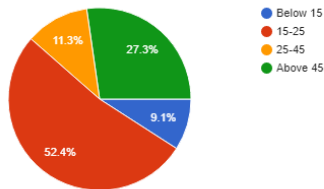
## 2.2 Size of the customer survey and it's documentary proof

The final number of respondents to our survey turned out to be 550 out of which 510 did ride some kind of 2-wheeler.

The summary of complied results in the form of pie charts is as follows-

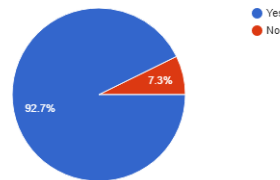
Age

550 responses



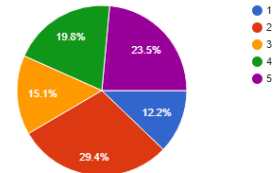
Do you ride any two wheeler?

550 responses



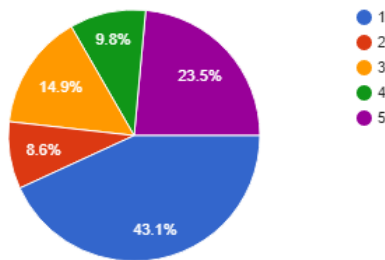
How often you use helmets:

510 responses



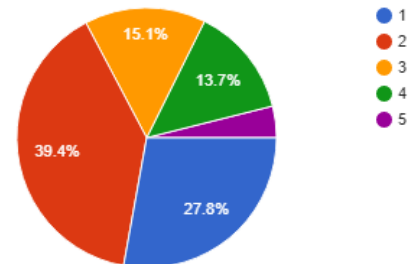
how safe you feel while using traditional helmets :

510 responses



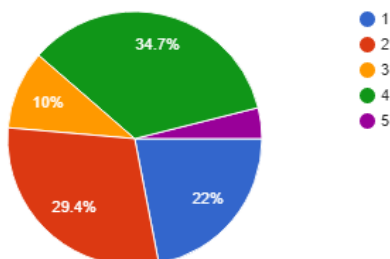
Do you find traditional helmets comfortable?

510 responses



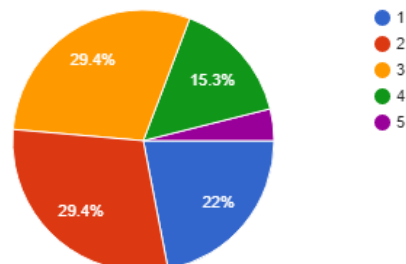
How serious injuries you have faced while wearing traditional helmets,if any?

510 responses



How willing will you be to buy a slightly expensive but safe and hassle free helmets

510 responses



### **2.3 Results of the survey (Question wise)**

As mentioned above, a total of 550 responses were recorded by us in the survey.

The first question which asked respondents about their age led us to the result that almost half of our respondents (**52.4%**) were between the age group **15-25**. The other half was dominated by people who were more than **45** years of age (**27.3%**) followed by **11.3%** of answerers being between ages **25-45** and rest below the age of **15**.

The second question asked the interviewees if they had ridden any two wheelers to which **92.7%** i.e. 510 of the total number of the people replied Yes. The rest 40 people (**7.3%**) were then exempted from rest of the questions.

The next set of questions were only asked from people who had ridden 2-wheeler.

The third question asked the respondents about the frequency of their use of the helmet. **23.5%** of the respondents said they used it very often whereas **19.8%** of the interviewees said they used it significantly, **15.1%** were neutral about use of the helmet. A staggering **29.4%** said they didn't use helmet all that often while **12.2%** said that they didn't use it more times than they did.

The fourth question enquired about the level of safety that answerers felt while using traditional helmets. It was indicated that almost half the people (**43.1%**) felt unsafe with the traditional helmets and only about **23.5%** respondents strongly felt that traditional helmets were safe. **14.9%** of the interviewees said they were neutral about the issue.

The fifth question was about the level of comfort people felt with the use of traditional helmets. About **27.8%** people said they did feel comfortable with **39.4%** agreeing to some level of comfort with the use of traditional helmets. Only about 20 people (**3.9%**) found the use of traditional helmets to be cumbersome.

Sixth question asked the interviewees if they had faced any serious injury with the use of traditional helmets if any. To which only **3.9%** disagreed, implying they hadn't. About **22%** of the respondents replied with a strong Yes, saying they had faced serious injuries and **29.4%** told about somewhat serious injuries.

The last question enquired about the willingness of people towards buying slightly expensive but rather safe and hassle-free helmets. A total of **19.2%** showed recorded reluctance towards the idea with **15.3%** being somewhat against it. **22%** of the people were in strong support, **29.4%** somewhat agreeable and about **150** of the total respondents (**29.4%**) remained neutral on the subject

## 2.4 Detailed analysis of the survey

The first question that was asked by us in the survey was about the age of the respondents. This question was intended to get an idea of the demographic that we are dealing with in the survey and how well it matches our target customers for AirHelm. We found a little over half of our interviewees were aged between 15-25 years of age and lowest percentage was of children below the age of 15 only 9.1%. This leads us to believe that we have collected the data for most users of 2-wheeler motor vehicles and adult cyclists. So, we can in fact rely on these results for the further adjustments and betterment of the product.

The second question quite obviously asked the respondents about their use of 2-wheeler. In case they didn't they were exempted from the next part survey. This gave us an idea about how much percentage of the people used 2-wheelers in current scenario so as to estimate the volume of production accordingly. The number turned out to be 510 respondents of the total 550, which is a pretty promising percentage.

The next set of questions was responded to by 92.7% of the respondents who had ridden 2-wheeler.

The third question enquired people about the frequency of their use of helmet while riding a 2-wheeler. The results were quite contrary to our expectation in this regard. We found only 12.2% of the respondents checked the option corresponding to the strong agreement with the use of helmet whereas 29.4% said they sometimes used it making a total of 41.6% of regular users. 15.1% of the people remained neutral in the regard. The cause of this result will be examined later.

The fourth question asked the respondents about the level of safety that they themselves associated while using traditional helmets. 120 people of the 510(23.5%), felt strongly that they were unsafe whereas 43.1% strongly believed in the safety of traditional helmets. Since one of the USPs of our product is the enhanced level of safety that it offers, the response to this question was one of the more crucial results. On the whole 33.33% of the people weren't so sure about the safety offered by traditional helmets, which is a positive indicator for the market of our product.

On similar lines, the next question asked people about the level of comfort that people felt with current design of helmet. The response to this question was once again something which hadn't quite expected. Only a very small percentage (3.9% of people in strong agreement and 13.7% in somewhat agreement) towards the idea that traditional helmets were uncomfortable for use. On the other hand, a total of 67.2% of the interviewees were actually okay with the level of comfort provided by traditional helmets.

Fifth questions enquired respondents about any kind of serious injuries faced by riders while riding a 2-wheeler with traditional helmets. Here, only a very small percentage of people (3.9%) actually answered with the option implying that had never actually had any serious injury whereas 262 people tended towards admitting a case of serious injury. These statistics would actually work in the favor of our product's sales.

The last question of the survey was designed to measure the tendency of people to buy a slightly expensive helmet which would provide higher safety and hassle-free handling to compensate for the higher cost. Here again almost half the people were somewhat agreeable to the idea with

almost 22% strongly agreeing. One of the interesting results in this question was the neutral percentage was as high as 29.4%, which is rather understandable given the ambiguity of the question as it doesn't specify exactly how higher the cost would be.

## **2.5 Conclusion of the survey**

In this section of the report we shall see the final conclusions drawn by the statistics presented by the survey conducted and analyse its effects on the business model for our product AirHelm.

It was indicated by the survey that the use of helmets wasn't as common amongst the riders of 2-wheeler as one would've thought. About 221 of 510 people were in fact the inclined towards not using helmets. This could've been because of a variety of factors including but not limited to the feeling of safety, comfort and availability of various sizes in regards to traditional helmets. These stats indicate a considerable market for a different product and a significant entrepreneurial opportunity to be exploited.

While the feeling of safety provided by traditional helmets was on the high half of the statistics, the results weren't compatible the amount of serious injuries faced by the people while using the same helmet. Almost half of the people felt that traditional helmets were in fact safe but further in the survey half of the people also agreed to having faced a serious injury. This might be attributed to the general conditioning of people by various infomercials and current information available to people. If people were shown pitfalls of traditional helmets this might change.

The same reasoning can be applied to the results obtained to the question of comfort level in the traditional helmet.

Finally, when asked point blank about the inclination to buy more safer and less cumbersome helmets at an economic cost the result was rather agreeable for the market for AirHelm. Near half people said they'd be somewhat definitely interested with another 30% of the people remaining neutral about the issue which as mentioned above is to be expected given the ambiguity with regards to the actual cost of product and the level of safety and comfort provided by it.

It is to remembered we didn't have a huge number of respondents below the ages of 15years so the picture of market for young cyclists is not completely and correctly indicated by these results

Overall, we could argue that the end results indicate a considerable market for a AirHelm and a significant entrepreneurial opportunity to be exploited.

## Chapter 3 – Financial Model

In this chapter we shall be analyzing the financial model of AirHelm covering areas like Cost Structure, Revenue Structure, Profit Loss Statements and Cash Flow Statements in the following sections.

Some of the assumptions that are considered while preparing the following model and simulation software\* to predict future sales numbers are listed below in Tab. 1. Refer to the table for further sections as well.

	Justification	Assumption
Product Sales 1 <sup>st</sup> Year	As a new startup, our initial production limit is to manufacture and package 100 pieces per week which leads to 4800 pieces per year.	4800
Initial Cost of Product	A lump sum amount that shall cover our startup's recurring expenses. Further details mentioned in following sections.	₹18,999/-
Profit Per Product	Other than the recurring expenses, our profits will be used to pay back the initial investment and help us reach the break-even point.	₹2,000/-
Target Audiences & Type	Our Target audience shall be broadly classified as Medium, Rich & Highly rich class. These are evenly distributed in our simulation.	1,00,000 (Medium, Rich and Highly rich class)

(Tab. 1 – Initial Assumptions)

### 3.1 Cost Structure

A capital-intensive manufacturing firm has significant amortization costs. These are mainly classified as Fixed or one-time investment and recurring or variable cost. For a product-oriented firm, capital investment and setup along with research and development comes as first when talking about fixed cost. While they are a one-time investment, they certainly do need maintenance and constant upgrades. Other than that, office expenses, insurance and licensing of these products comes as a recurring investment and have to be recovered from product sales itself.

With that said, similar considerations are taken into account while preparing the cost structure of our startup, AirHelm. With a product-oriented mindset, following Tab. 2 lists our fixed and recurring cost and their detailed structure.

\*Simulation Software developed by Team AirHelm.

Source: [www.github.com/shubham1chawla/Product-Simulation](https://www.github.com/shubham1chawla/Product-Simulation)

<b>AirHelm Cost Structure (1st Year)</b>				
Fixed / One Time Investment	Workspace / Manufacturing Plant & Warehouse		23000000	
	App & Website (Building & Launch)		10000	
	BSI & ISI Certification		10000	
	Research & Development	Product Development		25000000
		Intern Salaries		
		Initial Kickstarter Program Cost		
	Miscellaneous		2000000	
<b>Total Fixed Cost</b>		<b>50020000</b>		
Recurring / Variable Cost	Manufacturing Cost	Labor	28000000	
		Raw Materials		
		Packaging/Storing		
	Services	Maintenance	19000000	
		Customer Services		
	Office Expenses	General Expenses	37000000	
		Salaries		
	Licensing & Taxation		100000	
	Insurance		150000	
	Advertisement & Website/App Updating		10000000	
<b>Total Recurring Cost</b>		<b>94250000</b>		
<b>Total Initial Investment</b>		<b>144270000</b>		

(Tab. 2 – Cost Structure)

Many of the recurring cost depends on the location of the plant, such as labor cost and transportation charges along with licensing and taxations. While a lump sum of 15 crores is required to kickstart the program, as observed in the cost structure tabulated in Tab. 2.

Above mentioned lump sum amount is to partially raised by a Kickstarter program and initial angel investors. Location of the plant is expected to be outskirts of Bangalore, with cheap labor and near vicinity to tech hub of India.

Product basic manufacturing cost, as assumed in Tab. 1 are taken into account after analyzing the recurring cost of cost structure. The further section focuses on recovering the recurring cost as mentioned above.

### 3.2 Revenue Structure

<b>AirHelm Revenue Structure (After 4800 unit sales)</b>			
<b>Section</b>	<b>Quantity</b>	<b>Rate</b>	<b>Amount</b>
Product Sales	0 - 1000	20999	20999000
	1000 - 2000	21999	21999000
	2000 - 3000	22999	22999000
	3000 - 4000	23999	23999000
	4000 - 4800	24999	19999200
	<b>Total Sales Revenue</b>		<b>109995200</b>
App/Website Monetization	1		1000000
Sponsor & Brand Visibility	800	5000	4000000
<b>Total Revenue</b>			<b>114995200</b>

(Tab. 3 – Revenue Structure)

A close look at the revenue structure tabulated in Tab. 3, reveals a marginal increase in the selling price of the product. This is directly proportional to the product popularity and sales number. This factor is taken care in our simulation software in interpolating estimated sales number and revenue generation. Other sources of income are via website/app hits as well other brand's visibility as sponsorships.

Recurring cost referred to cost structure (Tab. 2), approximately 9.5 crores are required to keep up the production of Air Helmets. By observing revenue structure (Tab. 3), by product sales and other incomes, we are able to recover our recurring cost.

Nearly 2 crores of profit are generated by the end of the year which is partially satisfying the future manufacturing needs as well as payback to the initial market investment required earlier for capital installation (Loans and amortization costs).

### 3.3 Profit & Loss Statement

<b>Income</b>	
Product Sales	109995200
Advertisements & Monetization	1000000
Sponsorships & Brand Visibility	4000000
<b>Total Income</b>	<b>114995200</b>
<b>Expenses</b>	
Manufacturing Cost	28000000
Services	19000000
Office Expenses	37000000
Licensing & Taxation	100000
Insurance	150000
Advertisement & Website/App Updates	10000000
<b>Total Expenses</b>	<b>94250000</b>
<b>Profit/Loss</b>	<b>20745200</b>

(Tab. 4 – Profit and Loss Statement)



Profit and Loss statement (Tab. 4) gives us a detailed analysis of our recurring cost and per product revenue generation. An initial assumption of sales of 4,800 product per year (Forecasted) safely allows us to recover our expenses (refer to Tab. 4).

A net profit of 2.07 crores shows that we will be able to be self-sustainable in coming years and will be able to generate enough to reach the break-even point in 2 years of functioning (expected).

### 3.4 Cash Flow Statement

A cash flow statement is a financial statement that shows how changes in balance sheet accounts and income affect cash and financing activities. The statement captures both the current operating results and the accompanying changes in the balance sheet. As an analytical tool, the statement of cash flows is useful in determining the short-term viability of a company, particularly its ability to pay bills.

#### 3.4.1 On paper Cash Flow Statement (Expected)

<b>Cash Flow Statement</b>	<b>Forecast Period (4800 Product Sales)</b>					
Expected Product Sales	400	800	1200	1600	2000	2400
Cash from Sales						
Net Earning	8399600	8399600	8599600	8799600	8799600	9199600
Net Cost	7599600	7599600	7599600	7599600	7599600	7599600
Net Profit	800000	800000	1000000	1200000	1200000	1600000
Cash from Advertisements/Monetization						
Net Earning	0	0	250000	0	0	250000
Net Cost	-	-	-	-	-	-
Net Profit	0	0	250000	0	0	250000
Cash from Sponsors						
Net Earning	0	0	0	0	0	0
Net Cost	-	-	-	-	-	-
Net Profit	0	0	0	0	0	0

(Tab. 5a)

Expected Product Sales	2800	3200	3600	4000	4400	4800
Cash from Sales						
Net Earning	9199600	9399600	9599600	9599600	9999600	9999600
Net Cost	7599600	7599600	7599600	7599600	7599600	7599600
Net Profit	1600000	1800000	2000000	2000000	2400000	2400000
Cash from Advertisements/Monetization						
Net Earning	0	0	250000	0	0	250000
Net Cost	-	-	-	-	-	-
Net Profit	0	0	250000	0	0	250000
Cash from Sponsors						
Net Earning	0	0	0	0	2000000	2000000
Net Cost	-	-	-	-	-	-
Net Profit	0	0	0	0	2000000	2000000

(Tab. 5b)

(Tab. 5 – (a) Cash Flow Statement (0 - 2400) | (b) Cash Flow Statement (2400 - 4800))

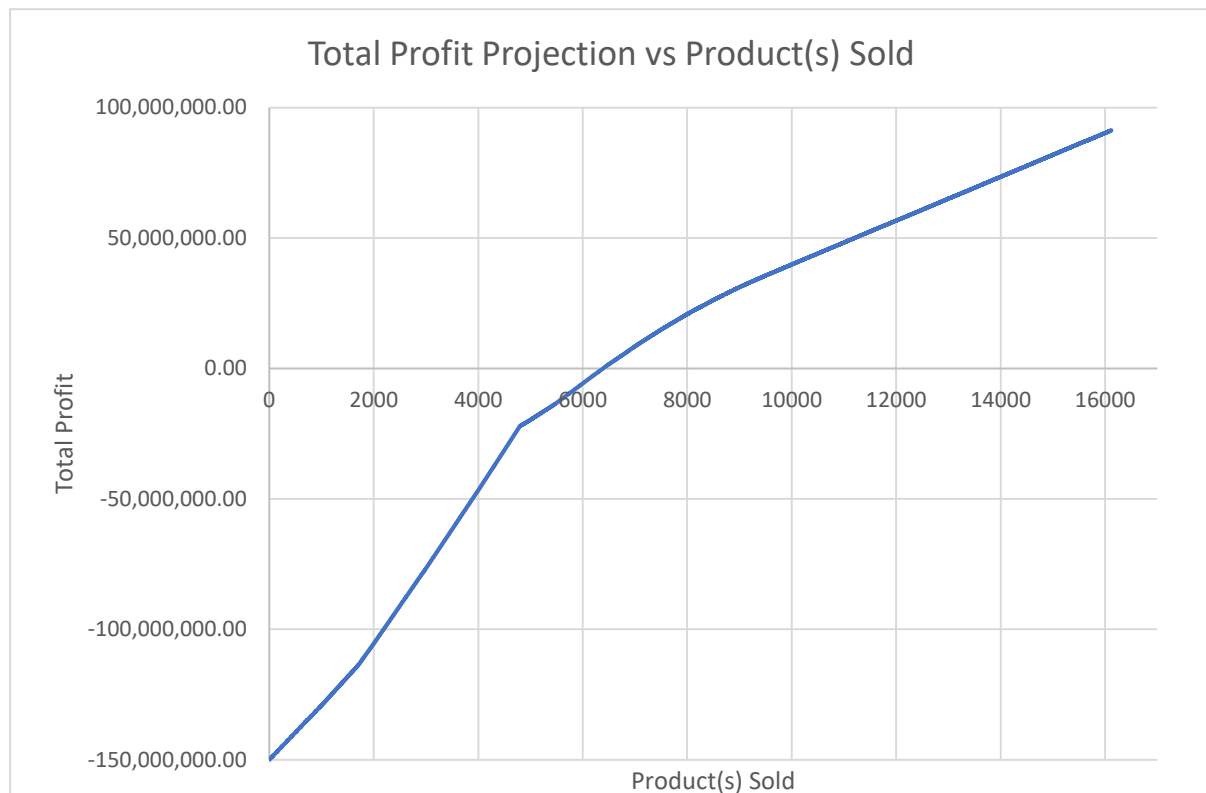
### 3.4.2 Forecasting product sales number using Software Simulation

After a detailed analysis of financial model and its aspects, we can take into account the assumptions on paper and simulate the results on software simulation software.

The software generates a target audience of 1,00,000 buyers of three type (Medium class, Rich class and Highly Rich class) evenly distributed. Buyers are open to buying the product until three years with the call-in-repair feature.

While buying any product, the generated audiences dynamically generate a *mood* variable that is a weighted function of product popularity of that time and his will to buy. With every product purchase, product popularity increases. An assumption of one in five hundred is taken into account for faulty products.

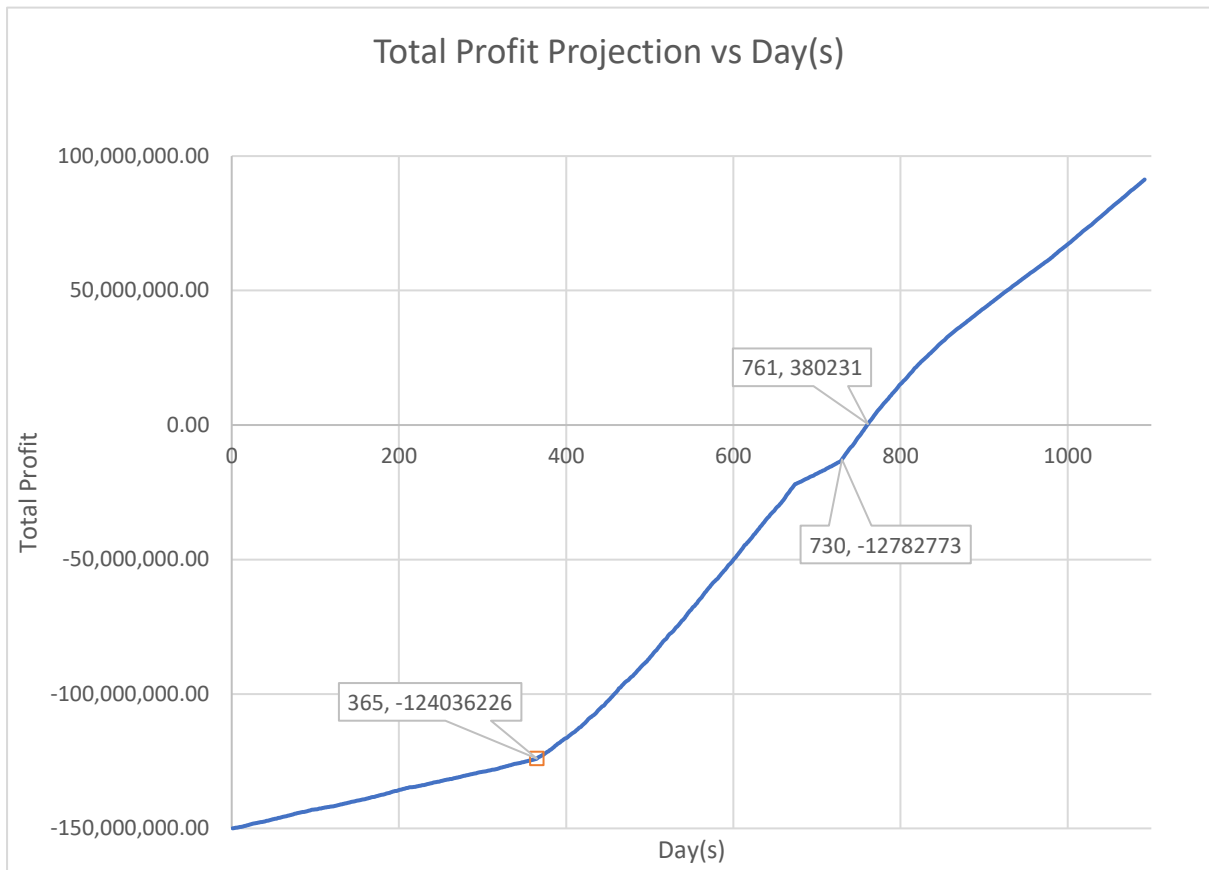
After simulating test cases for multiple times, we are able to come up with the following results.



(Fig. 2 – Total Profit Projection vs Product(s) Sold from Software Simulation)

According to the above-mentioned graph from software simulation, we are able to appreciate the fact that after our expected 4,800 product sales, only profit per product will add up to total profits. This is noticeable with a subtle drop in the slope of the graph after 4,800 products sales.

Further analyzing the graph, the break-even point is observed just after 6,300 product sales. The drop-in sales are also prolonged after the break-even point is noticed because of the fact that with product maturity, product profits are reduced.



(Fig. 3 – Total Profit Projection vs Day(s) elapsed from Software Simulation)

From Fig. 3, we can observe that the rate of recovery in the first year of functioning is not as much as we expected due to the fact that there was a product production limit per day. The effect was soon nullified in the year two of functioning due to greater production limit and more product popularity. There was a sudden increase in sales and total revenue generated in year two (Product Maturity Phase). Ads and Sponsorships also came into existence after that phase.

The break-even point reached just after Year two, which is just a few months more than what we initially expected it to come on paper. Overall, initial assumptions and expectations lined up somewhat seemingly with our software simulation.

In the end, Financial Model and Software Simulation of test cases gave remarkably positive results on how AirHelm is going to perform in Indian Market with an expected Break-Even to reach somewhere around two years of functioning.

## Chapter 4 – Reflections

In conclusion of this report, we'd like to summarize all the key developments that we passed and their significance on the project.

Like any entrepreneurial enterprise AirHelm followed the usual steps of discovery of opportunity, its evaluation and finally its exploitation. The lack of comfortable and Hassel-free helmets for riders was 2-wheelers was identified as a potential opportunity by us. Digging into this, we found that the traditional helmets don't provide protection against head congestion too, which is a potential health hazard.

To solve this problem various means were explored in the past with design of smaller helmets which hinder the vision of the riders comparatively less. AirHelm on the other hand is developed with a different approach on an entirely different and much safer technology.

Next, we had to evaluate how to effectively we can exploit the discovered opportunity. This was done in the form of a survey that our team conducted and then later analyzed closely. It was found that there indeed is a potential market for a product like AirHelm. Our survey responses indicated that people were not altogether satisfied with current level of safety and comfort provided by the traditional helmets and are positively open to trying a new product albeit at a relatively higher price.

A challenge that we faced in this step was the lack of respondents of a part of customer segment that we had planned to target (i.e. the children aged less than 15years.) This clearly meant that we didn't have a perfect picture of our potential market. We learnt that that the survey and analysis of the product should also be customized with respect to the targeted customer segments to get a clearer picture.

After getting positive results from our surveys we proceeded with making a financial model for our company to help give us a better picture of the initial capital requirements and revenue sources. We considered the barriers to entry of new entrants to the market, our key resources and potential partners in this part too. Taking considerable margins for the initial challenges and losses and future growth of the product and lowering price of technology each year we reached the conclusion that we would breakeven in near to 2 years of launch. The results were even supported by the simulation software that was developed by our team during the course of the project.

With our present analysis we feel confident in the venture that is AirHelm and are inclined to believe that it'll be a successful one. Moreover, by the end of this course, we could safely say that we have learned a lot of new concepts on how businesses work, how entrepreneurs create their own market and the most important one, how to respect your team members.