TRACK-ON

In everyday cycle, considering a generic scenario, we observe that people unknowingly tend to lose their valuables quite easily. The valuables could be anything from our day to day life such as keys, credit cards, wallets, backpacks, stationary items, cellphone and many more. The valuable lost could be as simple and inexpensive as it could be, however, it plays a vital role in life. It is very rare that someone who lose their valuable would go back finding it and could possibly end up getting back the lost object. To evaluate this issue in detail, a survey had been conducted, which provided some potential observations fostering the ideas to be focused in this assignment. In the survey, the objective was to find what percentage of the observed people tend to lose their object frequently, how many people find back the lost items, the age group which tend to lose their objects the most frequent, and what percentage of observed people are interested in investing in a product which could aid them to track back and find their lost object.

The survey conducted consisted of people from varied demographic to stretch wide the range of possibilities and be closer to accurately calculate the percentage. The survey included people from the age group of minimum 15 years to maximum 45 years. It consisted of students, professionals and homemakers. The conducted survey firstly assisted us to address the problem that how frequently one loses their valuable belongings. The next was to address the segregation of day to day inexpensive objects to the most valuable objects. The survey also provided with the potential possibility of how many people are willingly look forward to investing in a product which could help them find their lost objects.

In the survey, it is observed that out of 86 people, 78 percent of the observed count that is 67, tend to lose their objects at least once a week. This number turns out to be a huge count. The next observation based on the survey was that the age group of 16 to 40 years, lose their objects most

frequently. This catered us with a varied range of objects lost by people divided in different age groups. Survey also unleashed the fact that people do not use any kind of product to go back tracking their lost objects. When asked, if at all there is be a product available in the market which could help people to find the lost valuables, it was recorded that 62 percent of the observed population was interested and willing to invest in such a product. This figure ensured that there is a huge market opportunity for a product which could have a potential to work on the shortcomings of the discussed issue and thus, validated it as a cornerstone to step ahead to dig deeper in details of the issue.

Drawbacks of the current method:

People generally don't go about finding their lost objects until it's the most valuable item. The observed crowd showed signs of lacking clarity on products present in the current market. However, people have used products limited to tracking cell phones, but not all day to day items. This gap could also be filled by having access to the items currently present in the market. Though the reluctance to such products is visible due to the premium cost applied on these products which is treated to be a setback. People have not been investing a huge amount of money on using products which could track their objects if lost and thus, the market shows incalculable prospects to understand the scope of market reach.

Drawbacks:

After analyzing the technical and marketing feasibility our TrackOn, we came to the conclusion that even after having such huge advantages for customers, it still has some scope of improvements. First of all, we have estimated that life of the product will be around one year due to the materials we are planning to use in it and considering the usage pattern of the customers. For an instance, if a person uses it in extremely rough manner, then its life will will decrease and on the other hand, if one uses it with great care then it may last long for, may be, one and a half year also. This seems to be an uncertainty which must be considered. Therefore, in order to have an upper hand than our competitors, our product needs more R&D to make it more robust with the aim of increasing its average life. This will be done by improving its material and the circuit which will be used inside. The aim is to perfect it to an extent that no matter how customer uses it, it will not affect product life. As our cost to customers is very less, improving its life to more than three years will incentivize them to choose TrackOn over the competitor's products.

The second drawback to our product can be the fact that customers may not be willing to paste it on there devices. Some customers care too much about the aesthetics of there objects, and these customers will not paste anything on their items which will ruin the elegance of the same. To address this we did a survey (Exhibit 2 in which we asked 86 people whether they will be willing to paste our product on their devices. We received mix response as around 39 % people said that they will do it but 25% showed no interest for the same. Besides, around 36% people were ambiguous about it which also adds to the 'no interest' case. This is a huge number as it states that the probability of guaranteed success of our product is 39% only, if other 61% of people are not convinced that the sticking feature will not do any harm to their devices. Although, we acquired the above mentioned data from only 86 people, and these number may change for US population,

but we assume that the pattern will be same and majority of people will be skeptical to buy a product in which they will have to paste it on their objects. Therefore, this is a big concern and should be addressed properly. To solve this, we will do some campaigns and convince our customers that the adhesive used will not affect the aesthetics of their devices.

As per the above problems defined, we found that people forget their daily items such as backpacks, bottles, stationary and credit cards on a regular basis. Currently, there are technologies that can be used to solve these problems, but these technologies seem to have a range issue or cost problem. Although these problems are serious, people will not spend a lot of money on these products. We had to come out with an inexpensive technology which is readily available and not too complicated for people. In addition, it should solve the problem of having an enough range.

We thought of having a brainstorming session to address these problems. In the brainstorming session, we thought of technologies that can help to solve these problems. From these sessions, the technologies that can be used to solve these problems are Bluetooth, infrared, sound/radio waves, WIFI and GPS.

1. Bluetooth

This is an expensive technology, is readily available and easy to use. The problem of this kind of technology, the range is small form 0-15m. Currently, there are quite a lot of products that use this technology. Moreover, this technology will need a power source to work, we would have to generate this power from an external source such as a battery or electric supply. Adding an electric supply would make the product importable. Adding a battery would make the product bulky and increase the manufacturing cost. Also, battery would have to be replaced regularly. These reasons made us think something beyond Bluetooth.

2. Infrared

Infrared are waves emitted by heated objects. Although this technology is easy and inexpensive to use it does not create a uniform signal which will make it difficult for products to be detected. It also has a very short range that make it almost impossible for any object to be detected. Hence we thought of dropping this idea and coming with some better technology which will help us solve the problem.

3. Sound Waves

Sound waves works on the concept of echo. Sound waves can be produced by vibration produced by the product. This technology seemed to be infeasible to be used for this product.

4. WIFI

We worked hard on making this concept work. We found this technology easy to use and readily available. Currently, most of the restaurants, café and education institutions provide free and easily available WIFI, if we can make this concept work the product prize could be reduced to a great extent. However, for this concept to work the product had to log on automatically to the nearest wifi available. Currently, there no such technology available, to work on the R&D would cost of us a lot of investment. Furthermore, this technology has stability issue, the free WIFI available are not strong enough to send continuous signal. This product would need a continuous signal which makes the usage of this concept very difficult.

5. GPS

In this technology, the product using the technology sends signal to the satellites which records its position and sends to the external device. This technology is readily available, inexpensive and easy to use. However, the only drawback was it needed an external device to whom the satellite will be sending a signal. The external device will be in the form of mobile, laptop or desktop. Our target segment for this product is GenZ and consumers within age bracket of 16-40, this target segment generally are active users of smartphones, tablets and laptops. For the abpve reasons, we decided to go ahead with GPS technology.

Track ON is a device that can be used to find our daily items which we lose on a regular basis. It will use GPS technology to track the item, the current location will be shown on the mobile phone and Laptop by signing in to your application or web portal. This device will act like a sticker which can be attached to any household item which gets lost easily.

Competitive Advantage

There are already many products in the market which are working on the alternative technologies discussed earlier. But there are many reasons why our product will work better on the market. After a lot of brainstorming and research, we came up with features that will provide our product with an edge over the other. The attributes are following;

Inexpensive: After brainstorming, research and a few interviews we understood the consumer perception that people since people lose their objects one in a week and most of those objects include day to day objects such as id cards, credit cards, bottles, etc. They tend to look for objects but give up after some time. They definitely want to adopt a solution but do not want to spend a huge amount to buy a product that is not worth the given value. The current technologies in the

market start from the range of $60 and go on till $150.We, on the other hand, providing a technology product that will cater to this segment of people who do not want to spend a lot of these things. With our product priced at $30 for 10 strips of stickers to paste on the day to day valuable objects. For example, a student who loses his/her id card which is worth $10 will not opt for a $60 product to keep a track on the ID card, Instead will go and get a new ID card printed worth $10.

No Battery: Since our product works on an external source it doesn't require any battery. Having no battery gives us two advantage, first, the manufacturing cost reduces which directly affects the customer as the selling price to them reduces. Second, there is no stress to replace the battery very frequently. The stress on the manufacturing unit diminishes as they don't have to rely on the battery for the product to function. The product comes with a one-year lifetime and is easily disposable once the product lifetime is over.

GPS: This device completely works on the GPS which makes it easier to find the product .GPS is known for its accurate direction attribute, therefore, it is easy to integrate as well as the ease of use for the consumer increases. GPS just needs an external source to route its signal to the satellite and in our case, they are smartphones and computer website to guide the user through

Light Weight: As our product is in a sticker form, it is very light in weight and can be carried anywhere to everywhere.

Slim: The dimensions of the sticker is very less thus giving this product an attribute of being slim. Because this sticker is too slim it can have customizable shapes and sizes with a little extra cost so that the consumer can have an emotional connect and will not hesitate to paste it on their personal objects.

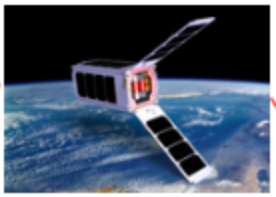
Technology

The major component of this product is Global Positioning System(GPS) which will be integrated into a mobile application. There will be a GPS chip within the sticker which will have Map services integrated to it. The chip will have an embedded digital signal processing device inside it. This processing device will convert the signal and match it to the GPS satellite which will, in turn, pass the signal to mobile applications and websites even if there is no signal.

Process:

Once the customer purchases the product, they can find the QR code printed on the sticker. The second step is to down the mobile application which is compatible with both iOS and android. Once it is done, the ode is scanned and this will create a personalized customer data on the cloud at the backend. Proceeding with sticking them on the objects, it will automatically get activated and will start reflecting on the application for that particular customer and once the customer loses the objects they will be able to track it. The range will be from 100m to 15 miles for the start and once the product paces up in the market, the distance service can ve increased

GPS chip will send the processed signal to the satellite



The satellite transmits signal for directions on the mobile

Once the signal is received it will guide the consumer with directions towards the product

House of Quality:

House of Quality is used to prioritize needs, identify trade-offs amongst ideas, and guide design trade-off decisions. Our primary purpose in using it is to identify which technical attributes should we focus on the most. Furthermore, we identify if there are any trade-offs amongst them that we might need to address. First, through the data that we have already gathered from the observation exercises and preliminary survey, we identified which customer needs are to be addressed. We list them in the customer attributes column with their weights listed in the adjacent column. The attributes are as follows: Low Price, Compact size, ease of usage, durability, water-resistant, availability. Then we list down the technical attributes of the product which are in our hands. The primary ones are Raw material and adhesive, application services, phone compatibility, range accuracy, alert system, and physical attributes like diameter and thickness of the product.

The arrows above the technical attributes represent whether the technical attributes are higher or lower better. We identify what the correlation between the technical attributes is. '++' represents strong positive, '+' represents positive,' '- 'represents negative, '- - 'represents strong negative and, the hollow box represents no correlation. Most technical attributes do not correlate with each other, and those who do have a positive relationship. Hence, there will not be any trade-offs between the technical attributes listed above for product enhancement. Next, we identify the relationship between customer attributes and technical attributes. Then we calculate the importance rating of each technical attribute by multiplying the value of the relationship matrix with customer attribute weightage. Next, we convert it into a percentage and identify which technical attributes are most important to satisfy customers' needs to provide maximum benefit. We have identified that raw materials and adhesive is the most crucial attribute to focus on. It holds 30.7% importance, followed by the diameter of the product with 21.3% importance and application

services with 18.1% importance. On the right side of the house of quality, how competition performs in terms of satisfying customer attributes is listed with their weight. We have identified that our most prominent competitor Tile is very good at making the product durable and water-resistant. In order to compete with them, we will have to focus more on raw materials, which is the only attribute that relates to the identified need.

A perception map is a graph that shows differences in consumers' perceptions of competing products. We have used this map to understand how our product is positioned versus our competing products. We select the two most essential attributes of our product viz — the range of search and price range. Our competitors are Spotypal, Track R, and Tile. Tile is the biggest competitor, which controls 80% of the market share. From primary research, we have found out that people perceive Spotypal and Track R as the products which provide low search range. Spotypal is perceived to be an expensive product, and Track R is perceived as a product with moderate pricing. Tile, on the other hand, is perceived to be a premium product that provides an excellent range with both Bluetooth technology and its premium service of GPS models. Track-On is a product that provides a better range than Tile, and it sells at a lot cheaper price. This satisfies the core consumer need at a much less price, which provides better benefits per dollar to the consumer. Hence consumers perceive this product to be at the best quadrant and would be more willing to purchase it over any other product in the market.

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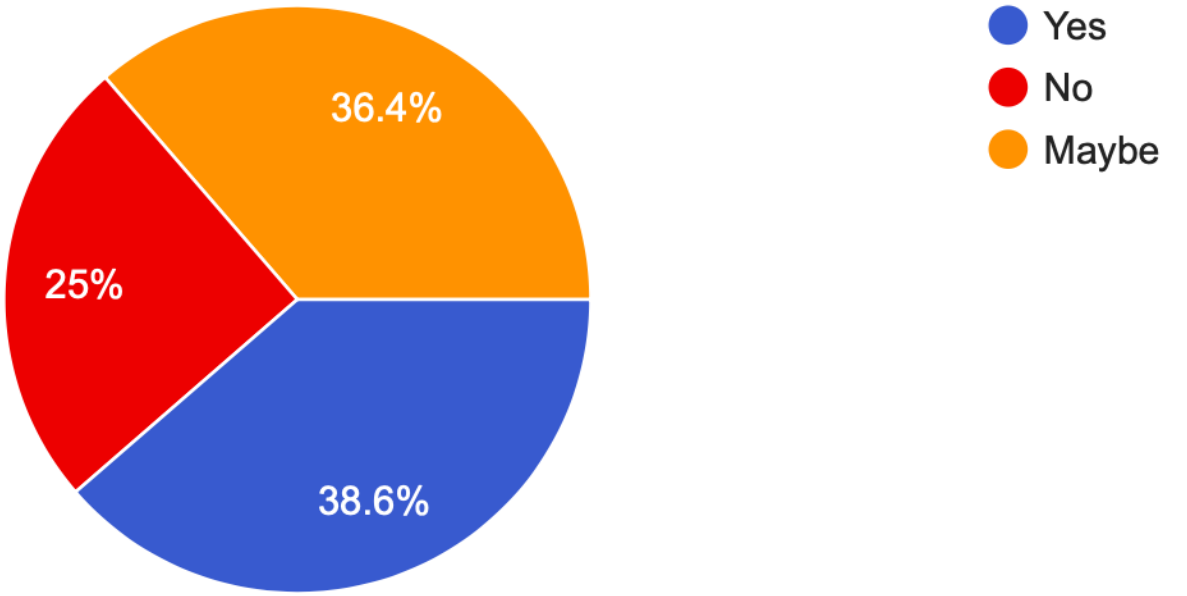
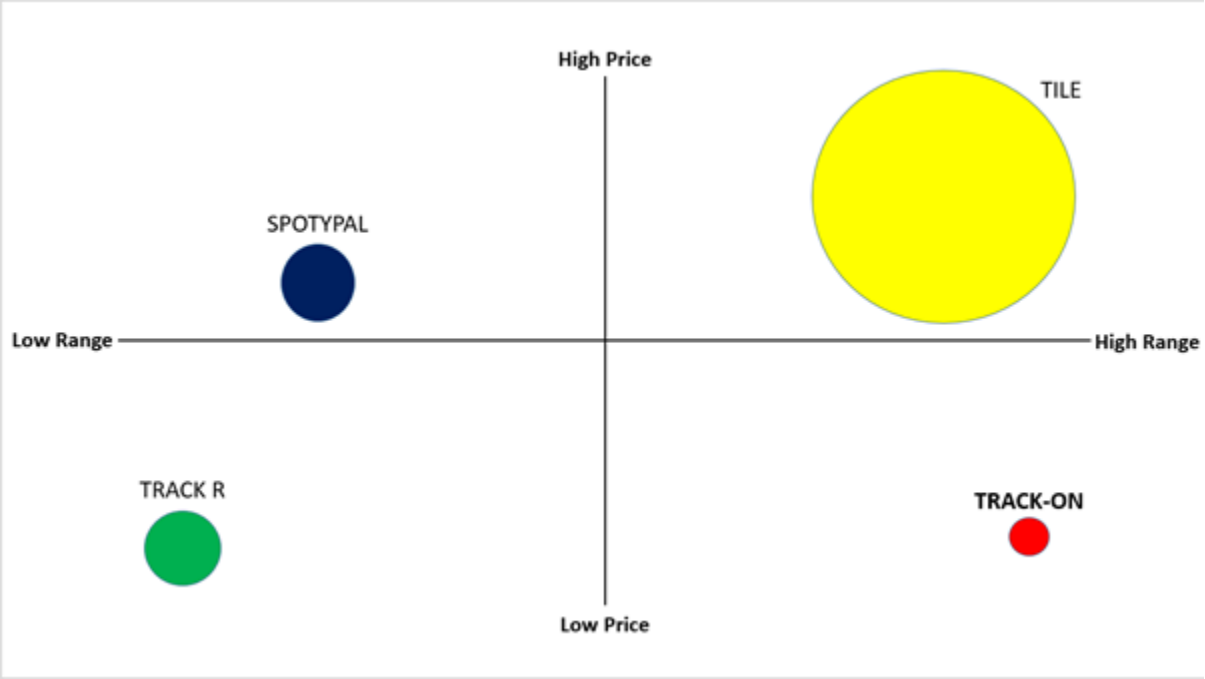
EXHIBITS:

Exhibit __ - Whether customers will paste our product on their objects.





House of Quality

Panchami Pandhare | December 11, 2019

Correlation matrix	
+ +	Strong positive
+	Positive
–	Negative
– –	Strong negative
	Not correlated

Relationship matrix		
⊙	Strong	5
○	Medium	3
△	Weak	1
	No assignment	0

	Customer importance rating (1 = low, 5 = high)	Percent of customer importance rating	RAW MATERIAL/ADHESIV	APPLICATION SERVICE	PHONE COMPATIBILITY	RANGE ACCURACY	THICKNESS	ALERT SYSTEM	DIAMETER		Competitor research: TILE			
Customer requirement 1														
LOW PRICE	4		○	○	△	○	○	△	⊙		1			
COMPACT SIZE	3		○				⊙		⊙		2			
EASE OF USAGE	5		⊙	⊙	○		△		○		3			
DURABILITY	4		○						△		4			
WATER RESISTENT	4		⊙								5			
AVAILABILITY	3			○		○					2			
Importance rating			78	46	19	21	32	4	54	254				
Percent of importance			30.7	18.1	7.5	8.2	12.6	1.6	21.3	100				