



1 ABC!

“NOBSTACLE”



Social Background, Target & Motivation

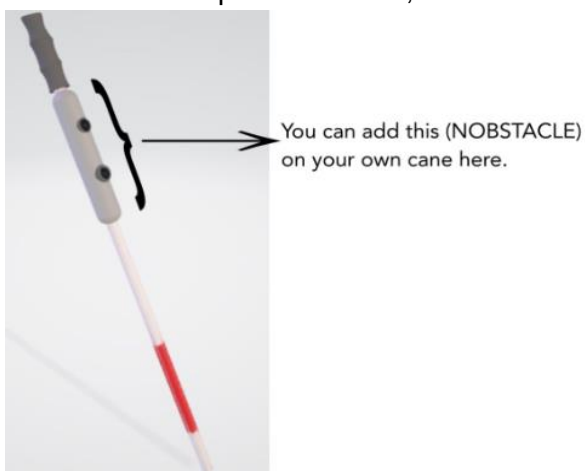
With the rapid fall of eye health among people, it can be said without doubt that more and more individuals will be less likely to partake in their communities and society in future generations due to the inconvenience regarding their lack of clear vision. The Ministry of Land, Infrastructure, Transport and Tourism published a report on the likelihood and percentage of the elderly population to go outside. The results were astonishing with only 52% of those 75 and older going out (1); Consider this and think of those who have impaired vision, resulting in loneliness and solitude.

We want to assist people living in those conditions to enjoy fraternizing with their friends and community, and that's why we created NOBSTACLE. Our goal is to be the guide to those familiar with their community. It uses a camera and sensor technology to warn users of obstacles that may get in their way. We designed this tool for the elderly population who are accustomed to their neighborhoods and can navigate themselves but are afraid of unexpected objects and new dangers that they cannot see.

Product and Service Details

a) Product

Nobstacle is a set of devices particularly for blind people that is attachable to his or her own cane. It helps to prevent the user from unexpected collisions with passersby or any obstacles in the path. To do so,



Nobstacle implements a stereo camera system which anticipates obstacles around the user by using two cameras. The incoming dangers will be informed to the users.

b) Technology

b-1) Camera

NOBSTACLE utilizes the stereo camera system in order to calculate the distance between the user and objects or obstacles including small steps on the route. Stereo camera is a system that equips two cameras placed apart, simulating the binocular sight of human vision, which allows it to calculate the three-dimensional measurements and distances. This technology is applied to the preceding-vehicle range-finding system, such as in the EyeSight system of SUBARU that scans the road to support the driver (2). Unlike the existing technology introduced to the driving assistance, the cameras in NOBSTACLE are located vertically so that it fits on to the cane without becoming a hinderance. The stereo camera scans the direction of the travel and identifies objects, steps, staircases, and human. After the stereo camera scanned the objects and obstacles within its sight, it calculates and transmits the instruction to the neck speaker via Bluetooth, notifying the user in order to avoid the obstacles on the route.

b-2) Speaker

Information from the camera system is received by a wireless *neck* speaker worn by the user through Bluetooth. Then the information is converted into an audio message that describes potential dangers in the user's surroundings. If there was an incoming



person or any stairs or small steps on the road detected from the front, the speaker will notify the user with a message. Upon receiving the



information, the speaker will notify the user with a message such as “Incoming staircase 5 meters ahead”. Upon informing the user about an “object” in the path of the user, the speaker will describe the approximate location of the object. The speaker’s volume will be easily adjustable by the user with a volume knob attached to the speaker. It should be noted here that if adjusted correctly, the sound of the speaker would only be audible by the user, and not to the passersby. This will solve the problem of vision impaired people who worry whether the speaker’s voice would disturb the others.

Our product comes with a charger cable that will charge the camera and the speaker to its max battery of 12 hours. When the charge is low, the user will be notified by a message saying, “battery low”.

Marketing Strategy

a) Target Analysis

Currently in Japan, there are about 1,630,00 people who suffer from visual impairment, unable to actively travel outside of their houses (3). The country is facing a serious aging of the population and the number of the elderly is increasing rapidly. On a larger scale, there are 2.2 billion people who are visually impaired worldwide, its demand increasing every year (4). Our product, NOBSTACLE will enhance the safeness that the general white cane provides to its user, which will allow visually impaired people to be able to travel with more ease.

In the first year of marketing NOBSTACLE, it will support Japanese and English, as they are the most used language in Japan. Then the product will begin its support on other major languages in the 3rd year and will keep on increasing support on other languages later.

b) Marketability

Nobstacle is available for 25,000 yen per unit. With its affordable pricing and usage easy to understand, the company hopes our product will be used by many people with visual impairment as possible and will support their own efficient travel.

We eliminated complex systems for elderly such as navigation systems, applications, and

touchpad which made our product more affordable and easier to use.

Blind people who know route to destination can go easier by using Nobstacle. There are many obstacles for blind people in town. When the blind person goes outside and uses these products which are charged enough, he will be able to know whether he is close to an obstacle or not because the cane senses it and the neck speaker tells by sound. Because of this system, the number of accidents involved blind people will decrease.

Financial Plan

(USD)	Year 1	Year 2	Year 3
1. Revenues	1.4 billion	4.29 billion	100 billion
Product/Service	1.4 billion	4.29 billion	100 billion
2. Cost(development fee)	-100 million	0	0
3. Expenses	-84 million	-392 million	-25 billion
Maintenance	-1 million	-3 million	-75 million
Staff Salaries	-72 million	-360 million	-14 billion
Promotion	-10 million	-30 million	-10 billion
other	-1 million	-3 million	-1 billion
4. Net Profit/Loss after tax	1.22 billion	3.5 billion	50 billion
5. Free Cash Flow	1.12 billion	35 billion	50 billion
6. Loan Repayment	100 million	300 million	7.5 billion
7. Cash Balance	1 billion	3.2 billion	42.5 billion

In the first 2 years, we will sell our product in Japan. In the first year, we estimate 10 % of elderly people in Japan who have visual impairment (65~) to buy Nobstacle (5). In the second year, we expect 30 % of our customers to buy Nobstacle since its expected popularity among people who have visual impairment in Japan as a result of our advertisement. In the third year, we will begin to sell our products throughout the world.

References

- (1) <http://www.mlit.go.jp/common/001176318.pdf>
- (2) <https://www.subaru.jp/say/eyesight/>
- (3) https://code.kzakza.com/2018/05/gankaikai_p opu/
- (4) <https://dime.jp/genre/796441/>
- (5) <https://orthokeratology.jp/kinshi-increase/>