

Need Identification & Problem Statement

Our client is looking for a product that will reduce the amount of youth deaths from hot car accidents. This document identifies our client's needs as well as organizes them by importance. Additionally, we have included a problem statement that states our main goal for this product and the research we have compiled on similar existing products on the market.

Problem Statement:

The client wants a device that will alert parents (or the public) of the presence of a young child in a hot car. This device's purpose is to minimize the amount of youth deaths caused by heat strokes, hypothermia, and/or carbon monoxide poisoning while a young child is locked in a hot car for a long period of time. Additionally, the client intends to sell this product globally so the design should be compatible for installation in all types of car models as well as low cost so that it can be accessible to parents of all income levels.

Client's Needs:

Design

Our client has several requirements for the product's integration with the car system. Firstly, the design must be compatible with all car models, especially older car models, because we don't want to discourage any potential customers from purchasing our product because of their inability to buy a new car. This requires our device to be externally installed instead of built-in during the manufacturing of the car. The product should be compact and able to fit in every car model while still leaving enough space for the passengers and/or their belongings. The material for the product must be capable of withstanding extreme high and/or low temperatures, so that the function is not compromised in these conditions. This need is crucial because we want to advertise this product as 'hassle-free' with an easy installation because we know that parents are very busy and don't need added stress.

Function

The device should be able to alter functions within the vehicle like lowering the windows or turning on the air conditioning. This need is important because it will reduce the heat within the car which can prevent the child from heating up to a fatal temperature. Additionally, the client doesn't want the product to rely on the car for its power in case of car malfunctions.

The end goal of the product is to have the child taken out of the car as soon as possible by notifying the parents, police and/or the public through an alert system. This

alert system should be able to notify as quickly as possible in order to minimize the risk of injury to a child or pet. The client also mentioned the possibility of an alarm system that can alert the public that a child is locked inside the car, in case the owner does not respond to a notification of danger. Also, if the design includes a phone application that sends alerts, it must not rely on wifi or a data signal in case the parent is out of range. This is important because the time after the notification is sent can be crucial to the survival of the child.

Cost

The cost of the device must take into account the different financial classes of the parents who will be purchasing it. It must have a simple & low cost so that it is affordable for potential users in poorer countries and accessible everywhere.

Wants (not critical):

The client mentioned some wants, which are not necessary to include but would be a nice bonus. An example that was brought up was an entertainment system that can keep the child calm, so they do not panic during this stressful situation. Moreover, The application should be easily accessible and not overly complicated.

User Perceptions on Similar Projects:

In terms of present solutions to this problem, most of the technology developed thus far does not account for children or animals who accidentally get into cars, or sneak in. Moreover, much of the solutions that exist today also consist of apps one must download on their smartphone. However, not everyone has access to smartphones around the world. Our client is looking for a device which everyone around can use, so this concept must be improved upon in our design.

To summarize, our client needs a simple and cost-efficient device, which anyone could install within their car, and is compatible with all models of cars. It must be capable of alerting the owners of the car, or the proper authorities in case of emergency, in order to protect the child or animal trapped within the car.