**TO:  Nathan Brinkerhoff, Cole Buhman, Tyler Crabtree**   
**FROM:**        Sally Devitry  
**DATE:**         October 15th, 2020  
**SUBJECT:**  **Recommendation for Final Project**

The purpose of this report is to analyze information on two project ideas and make a well supported recommendation. The first project idea is an eye-tracking camera for car dashboards that warns drivers when they are falling asleep. The second proposal idea is a mobile application that allows users to scan grocery items to see what impact buying that item has on the environment. The app would allow users to earn points as incentive to shop in a more environmentally conscious way.

In this report, both ideas will be evaluated against certain feasibility criteria. The general pros and cons of each idea are explained in regard to each criterion. The scope of the environmental mobile application is large and brings complexity to the feasibility of the project. In contrast, the team possesses all the capabilities and time needed to complete the eye-tracking dashboard camera. After analysis of both ideas, I recommend that the project be done on the eye-tracking dashboard camera.

**Criteria**

The following criteria are used to make my recommendation:

* Feasible
* Cost-effective
* Timely
* Outcomes

The first criterion, Feasible, addresses whether the idea is within the scope of the team’s skills. The second criterion, Cost-effective, discusses whether the project can be completed for a reasonable cost. The third criterion, Timely, assesses whether the project can be completed in a reasonable timeframe. The final criterion, Outcomes, assesses the benefits and consequences that may result from the project.

**Analysis**

In this section, the two proposal ideas will be discussed and evaluated against all criteria. I completed some broad research to determine where each project idea fell in regard to each criterion. After the analysis of each idea, a table is given that summarizes where each project ranked in regard to each criterion.

**Feasible.** The eye tracking device is within the scale and scope of the team’s expertise. The eye tracking device would require software knowledge, specifically computer vision expertise, to program the device to recognize tired eyes. The mechanics of the project require hardware knowledge. The team has experience with both software and hardware.

The environmental mobile application is mostly within the scale of the team’s skillset. The computer scientists on the team have extensive experience in building mobile applications. However, the production/business side of the environmental mobile app project may be out of the team’s expertise.

**Cost-effective.** The eye tracking device project is cost-effective. The hardware parts for the dashboard camera are not expensive. A high-quality camera would be the largest of the hardware expenses. The computer vision algorithm will require some research and time to develop, but this is an expected and reasonable cost.

The cost of building the environmental mobile application itself is reasonable, but the long-term aspects of the project could be quite costly. The application allows users to scan items to see how the items rank environmentally. This functionality requires communication with grocery stores and communication with a source of environmental rankings of products. Communication with stores and an environmental ranking source would require a large amount of money. The overhead of this idea is not cost-effective.

**Timely.** The eye tracking device is suitable for the project’s timeframe. With help from some outside resources, the software and hardware for the device can be reasonably created or obtained. Assembly and integration into everyday vehicles will be the longer step in the project but will also take an appropriate amount of time.

Timeliness of the mobile application can depend on the planned reach of the application. To integrate the scanning, rating, and incentive system into a small amount of local grocery stores is feasible within the time frame. Ideally, this product would have a larger reach. To have the desired reach, the project would require an unreasonable amount of time.

**Outcomes.** The eye tracking dashboard camera has a strong positive outcome of decreasing the number of car accidents due to drowsy driving. Drowsy driving constitutes a large portion of preventable car crashes. This project could save lives and prevent injuries all over the world. A possible negative outcome of this project is that users may not want the product because it is bothersome, visually or audibly.

The environmental mobile application could have a positive impact on the health of the environment by allowing consumers to push for change in corporations by supporting or not supporting certain products. Users would save money and grocery stores would likely see more business due to the incentive program. However, even if this application was used by all Americans, the power of consumers to fix large environmental issues, such as climate change, is small.

The following table gives a rating of each idea in each category as well as the positive and negative outcomes. A rating of 1 represents that the idea does not meet the criteria, a rating of 2 represents that the idea somewhat meets the criteria, and a rating of 3 means that the idea meets the criteria.

**Table 1.** Ratings of each project idea by criteria.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Feasible | Cost-effective | Timely | Positive Outcome | Negative Outcome |
| Eye tracking dashboard camera | 3 | 3 | 2 | Less car accidents due to drowsy driving | Possibility of low user acceptance |
| Environmental mobile app | 2 | 1 | 1 | Healthier environment | Change may not be meaningful on a large scale |

**Conclusion**

This report evaluates and discusses two project ideas, an eye-tracking camera that prevents car accidents, and a mobile application that encourages users to choose more environmentally conscious products. The two ideas were evaluated against identical criteria and qualities of each idea was discussed. In every category, the eye-tracking dashboard camera performed better than the environmental app. The team is fully capable of completing the eye-tracking dashboard camera project, and it has strong positive outcomes. I recommend that the project be completed for the eye-tracking dashboard camera.