

BusAlert: Improving Transit Experience

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Introduction:

In present world, transportation has become an inevitable part of human life. People use their personal vehicles or public transportation to accommodate this need. With the rise in difficulty in finding parking spots and the increase in the cost of gas and parking places, public transportation is the best alternative for many people. However, the dependency on the arrival of buses is a concern for most public transit riders. The real time bus arrival information provided by OneBusAway has been one of the best steps towards public transportation a better experience. However, people still have to use the app every time they need information about buses--even those that they use daily. Thus, to avoid having to use the application for the same information every day, we plan to provide alerts on bus time arrival. In addition, we plan to add weather alerts for people to plan their travel accordingly.

Stakeholders and Contextual Investigation:

Various people are directly and indirectly affected by these additional features. Two groups of people that are most affected are bus riders and transit officers. In addition to these groups of people, the indirectly affected groups by the system include bus drivers, other vehicles, people you are meeting with, other people in the bus stops asking you about if buses have arrived and the person you will contact in case the application is not reliable and you missed the bus and have to make to the appointment in time.



Fig 1: First time Win Phone OBA user at the bus stop

To get the initial look on how the user would feel about the additional features, we carried out contextual investigation with a single user. While observing the first time OneBusAway user (Fig 1) on smart phone, the most important piece of information seemed to be knowing the closest bus stop and correct route to reach the destination in time. While discussing with him about how he would feel about the additional features we plan to incorporate, he was excited that he doesn't need to open the app every time for the same bus stop and same route. Furthermore, according to him, weather alerts would be a useful piece of information. Therefore, in this paper, we will discuss about how bus riders that use OneBusAway with our BusAlert features are affected and what values are to be considered

while incorporating these features.

Benefits and Harms:

Bus riders will access the application less often by themselves than what they are used to now, but will still get the information they want through the alert system. Thus, the most important benefit with using this feature will be time saving. In addition to this, there are various other benefits to using BusAlert. People will be better prepared in case of bad weather. Also, the idea of pushing information to you rather than having to search for it is key. These features will optimize the time such that people don't have to wait on the bus stops. This is going to be a very useful feature especially in the geographical area of Seattle and most importantly in the areas with the bus stops that do not have shelter during rainy seasons.

As with any good technology, there are some unavoidable consequences to using these features. Since the user has to provide some of their personal information like their phone number or email address to get the alerts, it might raise privacy issues. In case of the use in smart phone platforms, if this app is synced to receive information from other apps, there are even more personal information that could be exploited. Along with that, there are chances of wrong and annoying alerts -- for example: continuous alerts when the person is in a meeting could be distracting. In addition to this, there is a chance of over-dependency on application. There might also be more use of battery for these alerts which might not be preferable especially in case of low battery status. Furthermore, we plan to implement the rating of buses or bus stops. Like with any crowd-sourcing application, there are always uncertainty on where the information is accurate.

Values:

The most important concerns we see with this feature are privacy and trust. Since there is the use of some form of personal information (either phone number or email address), we have to make sure that none of these information is ever made available to some third party that can misuse it. The reliability of this application will depend on how accurate the information is. For this reason, the ability of the application to provide real time update and alerts about bus stops and weather is very crucial and will determine users' trust on it. In addition to the information about the buses, we plan to have the rating system for the buses and/or bus stops which might lead to the various form of inaccurate input which need to be addressed.

Conclusion:

Keeping into consideration the privacy and trust of the users, we have to ensure the accuracy of information along with the protection of personal data of the users. These are the key values that would be of high importance while integrating these features.