
Charm City Circulator Mobile Application Redesign

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Abstract

The Charm City Circulator is a public transportation system in Baltimore City. Consisting of four separate routes, this transportation system is used daily by hundreds of individuals, ranging from tourists, workers, and local residents. Individuals who own a mobile smartphone have the ability to download the official Charm City Circulator Application originally designed by the Canton Group. It was designed to help individuals efficiently use the Charm City Circulator. Reviews of the application stated many problems, such as a confusing and unattractive interface. Also, users were not able to quickly find the desired bus stop. Our mission was to redesign the application to solve any issues and make the application more appealing.

Introduction

It is a cold December day in Baltimore. A young woman stands at the bus stop on St. Paul Street, behind her stands Penn Station. She shivers as she waits for the Circulator and decides to check the time of arrival of the next bus so she pulls out her phone and loads the Charm City Circulator Application. She selects purple route and wades through a long list of stops until she finds hers. To her dismay the app does not show her the ETA of the bus. So she decides to check if there are any delay or closure announcements regarding the purple route. She sighs as she opens each and every announcement to see if it is for her route and that day.

This scenario is just a small example of the issues with the current Charm City Circulator Application. Users of the application have a long list of complaints ranging from complaints about the lack of eta information for the bus to the fact that the app continues to run even when the user closes it. Users have also stated their reviews of the application as well as in surveys done by the research team that the application is badly constructed and appears to have been done with little to no testing.

With this in mind, we redesigned the application by surveying users, as well as researching what others have done in the area of phone

applications for public transportation and tested our prototype.

Previous Work

Applications geared around public transportation have been pursued by quite a few developers while improvements have been ongoing. These apps range from helping you drive to your destination all the way to helping you catch the bus. Most of these apps take advantage of the GPS that is built into phones, to help give the user accurate information. The most interesting transportation app is called Waze.

Waze uses the GPS location feature that is built into smart phones to track the speed of users. It then uses this information to help users find the best route to their destination. Furthermore, it allows the users to contribute to the information other users get by reporting things like accidents [4].

Along a different vein, and more directly linked to the Charm City Circulator Application, is NextBus. It is not a download-able app but a website. It covers 31 regions of the US and provides update bus arrival times. On top of that it uses the user's phone's GPS to help the user locate the stops closest to them [4].

iNextBus, though simple, clumsy and glitchy, actually achieves a few things that the Charm City Circulator Application does not. The most notable feature is the fact that it gives you a live ETA for the bus, as well as showing you where the bus is located. However, this app is limited in that it offers little else [1].

Methods

In order to interview individuals we created a small mock application using Adobe Flash CS5 that could also be used on mobile smart phones. Aside from the mock application, we created a questionnaire that the individual would take before using our application as well as after. We decided to interview an individual who frequently uses the application, Marie Condenzio. We also decided to interview someone who has never used the application before, Dean Baris. Having two completely different types of users gave us answers and ideas that could apply to the majority of the users. For example, both Dean Baris and Marie Condenzio agreed that the number one priority of using the application was to be able to find when the next closest bust stop would arrive in relation to their location. After interviewing we went back and made changes to the mock application. We did this process about 3 times for both of our interviewees.

Findings

From our initial interview with a frequent user of the current application we learned that the chief issue with the current application is that it is hard for the user to find the stop that applies to them. Beyond that the subject stated that they thought the YouTube channel button was pointless and they found that the Circulator news, while useful, was hard to use because there were no time stamps on the announcements, forcing the user to open every announcement just to see if it applies to the day in question. When asked what change they would like to see made to the app, the subject stated that they would like the app to use the GPS to help them find Circulator stops as well as inform them when the bus is supposed to arriving at that stop.

After the second interview, after they saw the prototype of the new version of the app we learned that the users liked the use of GPS, which helped find the nearest stops and told them the eta for the stop. However, they stated that while they did want the GPS feature, they did want the regular route map available for reference. They also liked the fact that the YouTube button was removed, as well as the fact that the news section now had time stamps as well as being color coded for each route. However the subject did not like the way the entertainment section was designed, finding it confusing and providing less information than the current app.

In the last interview we learned that the user liked the changes and the addition of an *Add Favorites* button to allow the user to view the stop and routes they use most, quicker. However issues with the aesthetics remain as well as the desire for locations viewed on in the entertainment section, to be displayed on the route map when clicked.

A person who had never seen the app before was interviewed after being presented with the prototype. What was learned was that they found the entertainment section was confusing. Furthermore they suggested that any announcement in the news section, that related to a problem be accompanied with a red exclamation point, thus showing an interest in being able to get as much information possible at a glance. Aside from this, they also stated a desire for a feature where the app tells the user the best route, based on a start and end point that is specified by the user. Finally, when asked what feature they would like to see added they said that they would like to see an alarm added to

the app, in order to alert them when the bus is about to arrive.

By and large our finds from the frequent user suggest that aesthetics as well as function are important. Also, there is a strong desire for a fluid app that helps them find the locations in relation to bus routes. From the first-time user we learned that there is a strong desire for an app that helps them decide what bus route to take, as well as a desire to be notified when the next bus is about to arrive. In both cases there is a desire for a dynamic app that helps make their commute as easy as possible.

Discussions

We think the home screen's user interface found on the official Charm City Circulator application is what confused users, causing anger with the application. When our interviewees opened the official application, they were sent to the home screen, which includes a very difficult to see map of the Charm City Circulator Routes. In order to find where the closest bus stop was according their location, they had to navigate through the main menu in order to find the Location button. The time spent navigating and loading the Location menu took up important time, especially if the user is in a hurry. Both Dean Baris and Marie Condenzio appreciated the fact that the GPS page appeared immediately when opening our mock application. Also, the icon pictures used in the official application are hard to decipher and understand. Users at a first glance thought the button that included an icon of a star would direct them to a Favorite Route section but instead directed them to the Points of Interests section. In fact, the official application does not include a Favorite route section. Both Dean Baris and Marie Condenzio

appreciated this feature on our mock application. Marie Condenzio, as well as users on the review boards, mentioned the useless YouTube button that would send the user to YouTube and completely away from the actual application. We replaced this button with a Favorite Routes section button on our mock application.

Conclusion & Future Work

While we did complete a mock application, our next step is to complete an actual application that includes all of the features found on the mock application. In order to do this we will continue with our research. We also plan to send a request to the Institutional Review Board in order to take steps further. We would like to have an application that can be distributed through both the Android and iOS market. We would like to thank our interviewees, Dean Baris and Marie Condenzio, for helping us find ways to improve our mock application. We would also like to thank Professor Gregory Walsh for giving us the knowledge required to complete this project.

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