

RideScout T 76 IDEA Grant

IDEA Program Final Report

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TABLE OF CONTENTS

Executive Summary.....	1
Product Description.....	1
The Problem.....	1
RideScout Potential Impacts	2
Transit–IDEA Project Results	2
IDEA Product.....	4
Product Description.....	4
Potential Impacts.....	5
Potential Impacts Defined by Technical Experts.....	6
Concept and Innovation.....	8
Concept Application.....	8
RideScout Solution.....	10
Transfer to Practice—Initial Launch in Austin.....	12
Investigation.....	13
Investigative Approach.....	13
Work Plan.....	27
Plans for Implementation.....	29
Expansion to Major Markets.....	29
Backend Developments.....	31
Partnerships.....	32
Conclusions.....	36
Outcomes.....	36
Next Steps.....	37

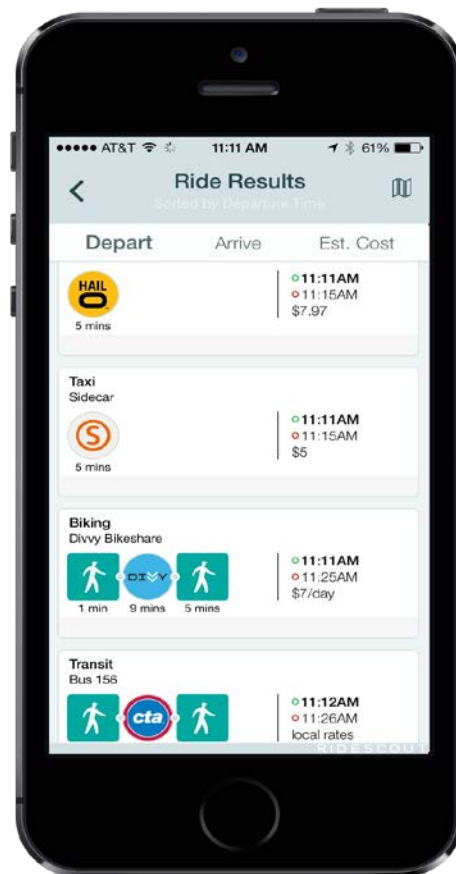
EXECUTIVE SUMMARY

Product Description

RideScout is the Kayak™ of ground transportation—a smartphone application that aggregates information for travelers on *all* types of ground transportation ride options—public, private, and social—around a user in real-time. The RideScout aggregation system displays and combines all public and private transportation options by searching nearby buses, trains, subways, taxis, sedan services, bikeshare services, carsharing, and carpooling programs. These results are then displayed on one simple interface for users. A social layer is included with user-created groups, Google, Twitter, and Facebook integration, which allows for group trip planning and ridesharing. RideScout serves as a transportation comparison tool for users by allowing riders to sort their ride results by cost or time preferences. Users can additionally book, pay, and rate the ride within the application. A final feature on RideScout includes an integrated carbon footprint gamification feature, which shows users the environmental impact of their transportation decisions. All in all, RideScout eliminates the need for many single-mode transportation apps by allowing users to access all modes of transportation through one mobile application.

The Problem

The primary research the research team conducted indicated that riders actively seek alternatives to car ownership or ways to reduce car usage. The research team quickly realized that no single mode of transportation would fully replace the flexibility and convenience of car ownership. Additionally, the research and effort necessary to seek out information on alternative ride options is burdensome and overwhelming. Once information on alternative ride options is located, there is no way to easily compare all transportation options in real-time. The result is that riders forego alternatives and choose to drive their car. The RideScout mobile application will allow users to access information on multiple forms of transportation from one simple-to-use application, thereby reducing the research burden and frustration of using alternative



modes of transportation. Initial testing indicated that 80% of users would end up using modes other than their car, with many opting for transit usage.

RideScout Potential Impacts

1) *Increased transit usage*—For current transit users, RideScout improves accessibility to ride and route information, making transit usage more convenient and cost-effective. For potential and current non-users of transit, having information on multiple modes reduces the friction of relying solely on bus or train. Using RideScout to see alternative modes of transportation increases the odds of transit usage, in turn driving up ridership from populations who would otherwise not use it.

2) *Improved transit operating efficiencies*—RideScout is a marketing and information platform for transit agencies, showing riders time, route, and cost information. Additionally, the data generated through the application assists in regional, route, and capacity planning.

3) *Protecting the environment*—Riders shifting from car usage to other more efficient forms of transportation create positive environmental impacts. By being able to quickly partner with a wide variety of transportation services, RideScout persuades users to reconsider their dependence on cars, while increasing transportation efficiency.

Transit–IDEA Project Results

1) *Complete Development and Testing of RideScout Mobile Application*—During Stage I of the IDEA project, RideScout completed the development of Version 1.1 of RideScout’s mobile application. From the backend perspective, RideScout successfully learned how to best integrate different ride providers such as public transit options, taxi providers, and Car2Go. The UI (User Interface)/UX (User Experience) also experienced significant improvements based on usability testing results and customer feedback. The Beta Launch during Stage I allowed the project team to verify that the application worked from a technical and user prospective, while also validating that there was a demand for the service that the application provided.

2) *Launch and Field Test Analysis in Austin, Texas, and Washington D.C.*—Over Stage II of the project, RideScout executed a successful launch in Austin, Texas. Traction with iPhone users and demand in Austin was proven as RideScout’s cumulative downloads (6,000 downloads from March–November 2013), week-to-week downloads, and active users maintained positive growth

trends. After traction was demonstrated with iPhone users and a successful Austin launch, the team focused on developing an Android platform, as well as launching in Washington D.C. After modifying the launch strategy in Washington D.C. to a more engagement focused approach, the Washington D.C. rollout was a success, which ultimately proved that the application could be replicated in additional cities. After the launch in Washington D.C. and Austin, RideScout had surpassed 25,000 cumulative downloads by March 2014.

Transit–IDEA Project Accomplishments

1) *Influencing Transit Behavior*—From the late November 2013 launch in Washington D.C. to March 2014, RideScout surpassed 25,000 cumulative downloads, and logged over 300,000 sessions, including multi-modal investigation. Additionally, the application maintained a 10% week-to-week growth in downloads and a greater than 12% week-to-week growth in unique active (returning users). Despite these impressive key data factors over Stage I and II of the IDEA project, it is still too early to opine on the efficacy of the RideScout platform to effect change in transportation behavior by individuals in the targeted demographic (millennials). However, these are positive trends that, if sustained, will provide a broad enough user base in the next 12 months to test the initial hypothesis: Individuals age 17–34 are more likely to utilize alternative transportation platforms if they have reliable access to 3 or 4 safe and legal options apart from their automobile.



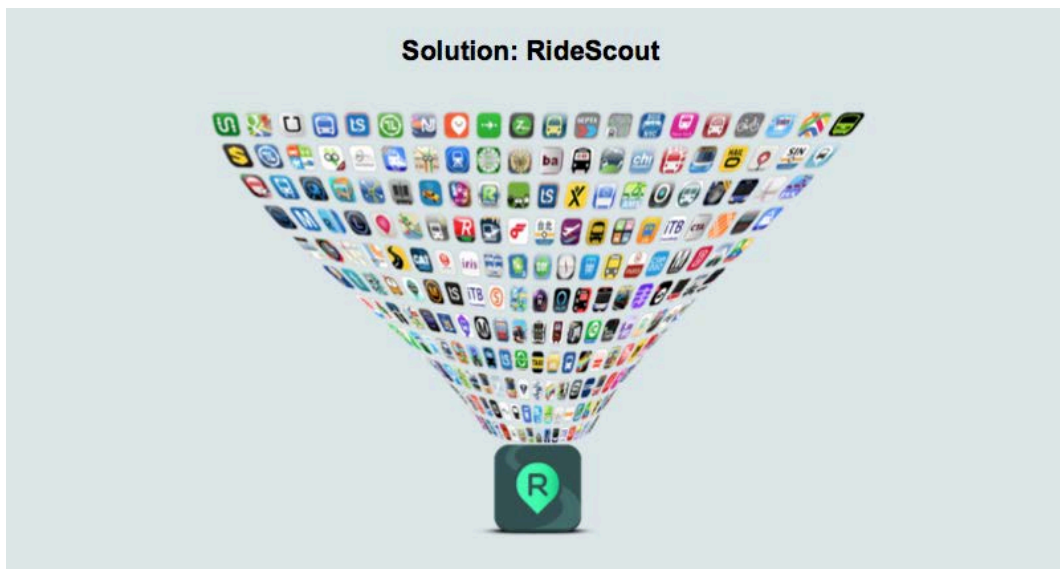
2) *Generating Valuable Data and Analytics*—As stated earlier, with 25,000+ downloads, and capturing a small but diverse group of active users during the IDEA project, the platform has not yet accumulated the user base necessary for a dataset capable of a sufficient sample for rigorous testing. However, the trends are positive in the accumulation of sessions on the RideScout application and the generation of such a dataset is likely in the next twelve months. Such an accumulation of data will be beneficial to both commercial and public transportation entities in making more efficient use of transportation resources.

3) *Social Goods: Increasing Access to Multi-Modal Transit*—By aggregating all transportation options into a single display, consumers that use the RideScout application are able to make the most informed decision about what the best, or most efficient, form of transportation is for their trip. With over 300,000 sessions documented through RideScout during Stage I and II of the IDEA project, this means that 300,000 transportation options were selected based on what the user believed was the most efficient form. Even if only 25% of these rides were on public transit, it still results in 75,000 users utilizing public transportation.

IDEA PRODUCT

Product Description

RideScout is a mobile application that aggregates information for travelers on all of the ride options—public, private, and social—around a user in real-time. The RideScout aggregation systems searches nearby buses, trains, subways, taxis, bikesharing, and carsharing/carpooling programs and displays the results on one simple interface. A social layer, with user-created groups and Facebook integration, allows for group trip planning and ridesharing. A rider can sort

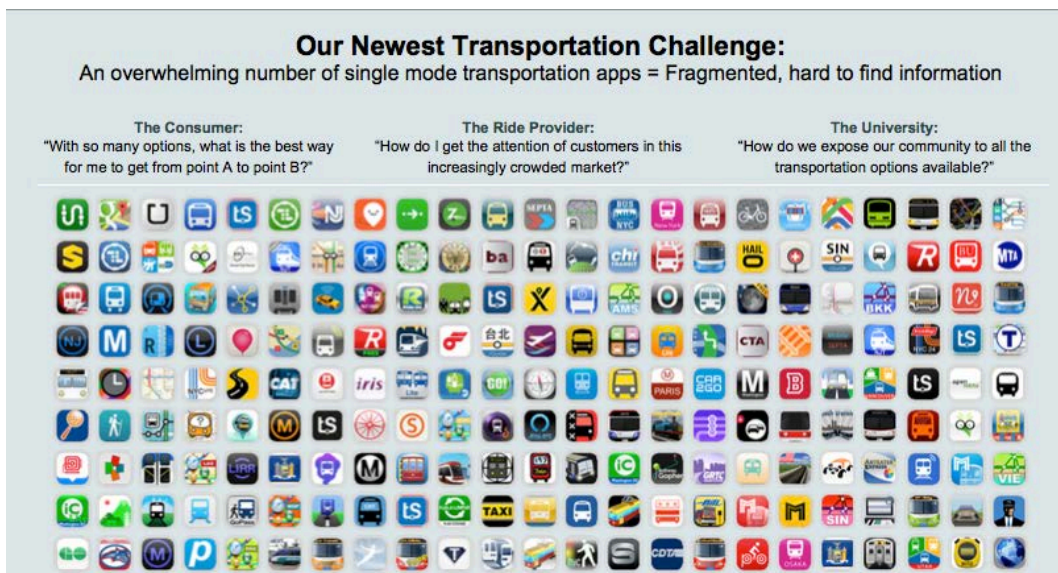


their ride results by cost or time preferences, in order to compare options in real-time. Users can book, pay, and rate the ride within the application. Finally, an integrated carbon footprint gamification feature shows users the environmental impact of their transportation decisions. This project will further develop, test, and launch the RideScout mobile application and evaluate usage results and patterns.

Potential Impacts

Increased Transit Usage

As a result of the NAS investigation, RideScout will increase transit usage initially in its first two test cities of Austin and Washington D.C., with additional cities to follow as RideScout expands the product beyond Stage I and II of the IDEA project. Once the product is launched, RideScout will give smartphone users real-time information (where available, schedules otherwise) on transit options around them. When riders can access route, time, and cost information from a single application, the likelihood of finding and utilizing public transit alternatives increase exponentially. The project team understands that what differentiates RideScout from other transit-focused applications is that it integrates multiple modes of transportation. This opens up public transit to a whole new population of riders who would otherwise drive or look for non-transit



alternatives. For example, a non-transit user who opens the RideScout app to look for carsharing or taxi options may well discover that a bus is the fastest and cheapest way to get to their location.

One of the reasons people have poor experiences on public transit is improper planning on their part, resulting in mismanaged expectations and frustration that the trip took too long or didn't take them where they needed to go. If consumers had a tool that would show them all of the routes that would get them where they needed to go, as well as departure time, trip length, and cost information, utilizing public transit would be much more transparent and less of a hassle. And in those instances where public transit was not particularly convenient, these users have the peace of mind to know that there are other options for them. RideScout is the tool that has the potential to make this happen. Over the life of the NAS project, RideScout will gain a better

understanding of how to best structure its product through usability tests and customer feedback to ensure the product is the tool that displays the ease, convenience, and cost-effectiveness of choosing public transportation over other options.

RideScout's estimates show that by 2018 more than 4 million users will be utilizing RideScout to find and compare transportation options. That means by 2018 there will be over 390 million rides booked through the application. Even if only 25% of these rides were on public transit, it would result in close to 100 million rides utilizing public transportation.

Improved Operating Efficiencies

During the NAS investigation, the RideScout application will be further developed to capture an incredible amount of information that will be very valuable to transportation entities. From rides booked through the application, RideScout will be able to gain insight into volume and patterns of transportation usage, peak and off-peak traffic "hot spots," commuter habits, preferred modes of transportation, true origin and destination information, etc. This information can help inform a variety of transit entity decisions, and as a result of the NAS project, RideScout will have the resources to expand its product to municipalities where this data will be valuable to transit agencies.

At best, current practices allow transit companies to know where a passenger got on board a vehicle. In very limited cases, laser counters can tell when passengers exit a vehicle. The RideScout application, in comparison, will know the true origin and destination details for passenger trips. By focusing on creating relationships with transit agencies in Washington D.C. and Austin during Stage I and II of the IDEA project, RideScout's product will have the potential to help these transit entities make regional route planning decisions as well as when and where to prioritize fleet expansion. Additionally, information generated through the app will highlight traffic "hot spots"—areas where a critical mass of users are requesting rides or traveling. These "hot spots" can be as simple as rush hour traffic, allowing transit entities to better predict trip durations and additional vehicle needs. As RideScout learns how to best collect and analyze data based on its product launch in Austin and expansion in Washington D.C., this information will improve transit-operating efficiencies through more effective allocation of resources.

Protecting the Environment and Promoting Energy Independence

The national environmental impact of riders choosing alternative modes of transportation and decreasing their car usage is staggering. The key to facilitating this change in patterns of use is to remove the need for drastic behavior change. Individuals default to driving for the perceived flexibility and also due to an unwillingness to research alternatives. By providing multiple ride options in one application, RideScout removes both of these barriers and gives users the closest thing to driving their own car. RideScout will continue to perform usability testing during the NAS project to ensure it is organizing and listing transportation options the most effective way so individuals are more likely to explore more environmentally friendly transportation options.

The project team's assumptions for adoption rates of the application highlight the real impact that these individual consumer choices can have nationally once RideScout continues expansion post-IDEA Program. By 2018 RideScout can save 2.4 million tons of CO₂ and remove the equivalent of 427,000 cars from the road each year¹. From a broader perspective, less reliance on vehicle ownership will reduce the upstream and downstream impacts of automobile production. Finally, getting people out of single occupant vehicles is one of the quickest ways to promote energy independence and reduce the importation of fossil fuels. Many city fleets are upgrading to natural gas and bio diesel buses, increasing the impact of switching to these alternatives drastically.

Potential Impacts Defined by Technical Experts

Potential to Influence Transit Behavior

“As Director of the D.C. Department of Transportation, we had brainstormed the idea of a technology platform that could allow citizens to make informed dynamic decisions in real-time about the fastest, most cost-efficient, most environmentally sound ways to move into and about the city. RideScout can be that platform. Instead of a typical government approach to behavior change through information campaigns and subsidies, RideScout incentivizes people with something more valuable—ease of access to only the options that suit the individual in their current circumstances. People will be rewarded for using RideScout with what they value most: most efficient use of their time and money.”

-Emeka Moneme, *Former Director, DC Department of Transportation*

Potential to Generate Valuable Data and Analytics

¹ Assumptions: 25% of total rides booked through RideScout, 50% of which are public transit or carpooling, accounting for a 32% reduction in CO₂ over single passenger vehicles.

“The incentives are perfectly aligned for municipalities, universities and commercial ride providers to encourage their constituencies to use the RideScout mobile platform. With a sufficient base of active users municipalities and other large organizations will be able to access and analyze a real-time, ubiquitous and constantly updating dataset reflecting transit trends and behavior that will allow better planning of infrastructure, fleet management and transportation demand. For commercial transportation businesses, such data allows for a more efficient delivery of their services to markets where they are in the most demand. From environmental policy, to safety, to traffic and parking congestion, a large scale adoption of the RideScout platform could provide an invaluable source of data for both public and private transportation entities across the country.”

-David Zipper, *Current Managing Director of 1776, Former Director of Business Development and Strategy for Washington DC Mayor’s Office*

Social Goods: Increasing Access to Multi-Modal Transit

“In 2011, HHS opened up health data, including a list of all available federally qualified health centers (lower-cost facilities throughout the country); an entrepreneur with a popular mobile app, iTriage, incorporated that data and without additional marketing effort, returned over 100,000 referrals to FQHCs that were relevant for consumers not needing more expensive emergency room options. Open data in the hands of a better consumer service in this case increased access to affordable healthcare.

With sufficient users, RideScout has the potential to be the transportation equivalent. By incorporating open transportation data into its consumer app, where the consumer is mostly interested in the answer to the question—‘how might I get from point A to B in the most efficient manner possible?’, RideScout will generate additional public ridership if such options are available and in front of the consumer.”

-Aneesh Chopra, *Former US Chief Technology Officer*

CONCEPT AND INNOVATION

Concept Application

Macro Problem

For the last 60 years, transportation in the United States has meant car ownership. There are more cars than licensed drivers in this country², and reliance on this single mode of transportation has permeated every facet of life. According to the U.S. Census Bureau, 86% of U.S. workers use a car to get to work. A staggering 88% of those workers drive alone³, which means that every day 105 million cars are on the road with only a single passenger. Urban infrastructure is poorly suited for this rise in car-dependent travel, leading to increased congestion, rising ownership costs, lost productivity, and record levels of pollution. Not surprisingly, congestion problems are heavily concentrated in a few cities, with the top 15 urban areas responsible for 1.6 billion gallons of wasted fuel and 59% of the congestion costs. Each of these pain points add up to real financial burdens for consumers: AAA estimates average annual driving costs to be \$9,000⁴ per car, meaning daily commuters spend \$952 billion a year on gasoline, insurance, and maintenance. Furthermore, the Texas Transportation Institute (TTI) calculated that the effects of congestion cost drivers \$101 billion a year in delay and fuel costs⁵, an incredible \$1,083 per commuter. This has caused consumers to look for alternatives.

Cities and transportation agencies have invested billions of dollars into public transit to help reduce this dependence on cars and address the environmental problems listed above. Despite increasing routes, extending operating times, and expanding geographic reach, public transportation is underutilized with a high degree of excess capacity. Part of the reason more riders do not use public transit is the time and research required to plan a trip. Short of memorizing routes and schedules, a high level of planning is required to effectively utilize these transit options. Additionally, transportation decisions are extremely contextual (discussed in detail below), with public transit being incapable of serving every need on every trip. Finally, riders value flexibility and often see transit as a fixed rather than fluid option, limiting their travel to the routes and times in which these modes operate. For riders to rely more on transit usage, it must be viewed as one valuable piece of a broader transportation landscape, rather than a binary decision between taking the bus and driving a car. This is a battle public transit does not have to fight.

² <http://www.census.gov/compendia/statab/2012/tables/12s1098.pdf>.

³ <http://www.census.gov/prod/2011pubs/acs-15.pdf>.

⁴ <http://newsroom.aaa.com/2012/04/cost-of-owning-and-operating-vehicle-in-u-s-increased-1-9-percent-according-to-aaa-s-2012-'your-driving-costs'-study/>.

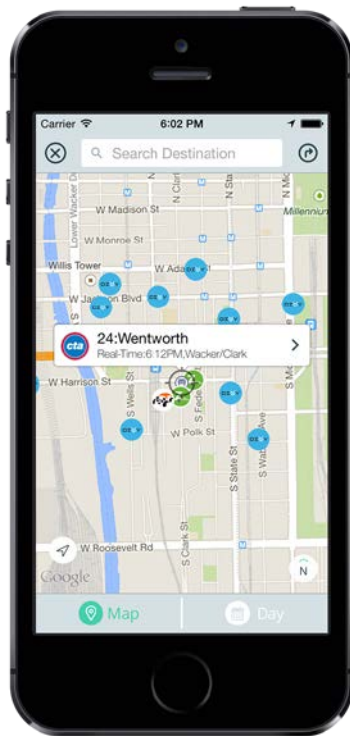
⁵ <http://tti.tamu.edu/documents/mobility-report-2011.pdf>.

Micro Problem

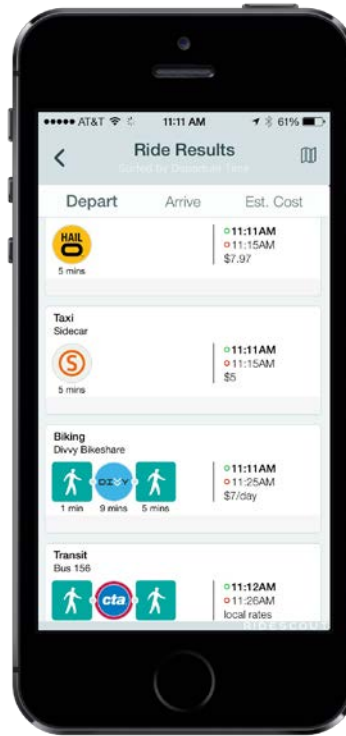
Transportation decisions are highly contextual and personal, and no one method is appropriate for all occasions. Transportation planning research has shown that the four biggest factors affecting transportation decisions are: time, cost, reliability, and flexibility. Since no single mode of transportation is appropriate for every situation, in order for riders to seek alternatives to driving their car they must research multiple options. Once they have found this information they then must attempt to compare different modes in terms of time, cost, reliability and flexibility. Consumer demand for alternative transportation options has given rise to a multitude of applications and websites, each focused on providing information on a single mode of transportation. The irony is that each of these new “solutions” is only adding to the decision-making problem by increasing complexity and further fragmenting the market. This act of cross-referencing applications severely limits the ability to make decisions in real-time. The process of searching for alternative ride options thus becomes time-consuming and unrealistic. This, in turn, increases a person’s propensity to drive their car rather utilize alternatives.

RideScout Solution

Rather than providing consumers with yet another mode of transit, RideScout aggregates information on all existing transportation options and displays them in one simple interface. By showing riders relevant rides that meet their individual preferences, RideScout saves the user time by eliminating the need to sift through multiple lists of rides that do not meet their specific criteria. This in turn allows riders to dynamically search, locate, and book rides in real-time. A mockup of the application is shown below:



Map View



List View

By serving as an aggregator of ride information, the RideScout application will increase transit usage. This is done in two ways: first, information on public transit routes, schedules, and costs will be made available in the application, allowing for simple trip planning. Learning how to aggregate and integrate ride provider information will be a primary focus of the investigators in Stage I of the IDEA project. Second, RideScout gives riders access to non-transit alternatives in the event that transit may not solve their immediate need. Where before riders might opt to drive their car, they will instead use the application to search for all available alternatives, increasing the probability that public transit will be used. It is plausible that once riders can compare the time and cost benefits of public transit versus other alternatives side-by-side, in a single application, their propensity to use public transit will increase. The reality of the time and cost benefits of buses and trains will help to break down some of the perceived inconveniences of using public transportation. The application also solves for consumer flexibility concerns by increasing the options available to them beyond driving their vehicle.

From an environmental perspective, during the NAS project, investigators will look into incorporating environmentally focused features such as a carbon footprint calculator, which shows riders the impact that their transportation decisions have on the environment. Using a single-occupant vehicle as a baseline, riders can see the amount of carbon dioxide that each bus trip or train ride saves. Just as users compete for “Check-In” points on the popular geo-location application Foursquare™, riders can compete with other users for the title of savviest commuter, or to be the most eco-friendly amongst their friends. On a broader scale, employers can quantify the carbon savings that result from their employees’ transportation habits and count it against their carbon reduction efforts and corporate sustainability targets. RideScout will gauge through testing and feedback if this is the most effective way to encourage corporate support for public transit usage amongst their employees. Although gamification is a proven model to modify consumer behavior, testing this in specific markets will prove if this feature will encourage more riders to opt for buses, trains, and subways.

Transfer to Practice—Official Launch in Austin

The RideScout application will be developed to simultaneously integrate information from a wide variety of transportation entities. The project team will initially focus on integrating transit data from the first city RideScout will launch in, Austin, Texas. RideScout has formed a strong relationship with Capital Metro in Austin, and has secured the routing, schedules, and cost data of the Capital Metro buses and trains. RideScout will integrate these data sets into its application, and once integrated, will provide riders with accurate transit information via RideScout to help them plan and execute their trip. Any changes or updates to schedules and routes will be automatically updated in RideScout's feed. During the beginning stages of integrating transit providers, RideScout will also focus on partnering with private ride providers, like Car2Go, so its mobile app will display all Car2Go locations and availability. Another partnership RideScout will focus on solidifying is a partnership with Zipcar. The RideScout development team will work closely with Zipcar to identify the most feasible way to integrate their vehicles into RideScout, as they do not have an open API. Finally, partnerships with three of the largest taxi companies in Austin will allow RideScout to put the application in the hands of their drivers to provide another mode of transportation to consumers. Each of these partnerships will allow for RideScout to display a wide variety of transportation options on a single platform. Users will then have the ability to sort all of their transportation options between point A and B, by time or cost so that they are able to make the most informed decision about what their best transportation option is at the time.

In addition to these partnerships, RideScout will focus a lot of time and attention on getting the application in the hands of users in its launch city of Austin, Texas. Marketing efforts will initially focus on millennials (18–34 years old), 77% of whom have smartphones. This ratio is even higher in Austin, which boasts the highest smartphone adoption rate across all age segments in the country, at 51%. As a demographic, millennials have a propensity to shun car ownership in favor of cheaper, greener alternatives. The target market for this first launch is students and professionals. These groups are frequent commuters who face high vehicle ownership costs, severe parking limitations, and high parking costs. At the University of Texas at Austin, there are 58,000 students and faculty and only 16,000 parking spaces. Similarly, 67,000 people live and work in downtown Austin, but are limited to 22,000 parking spaces around the central business district (CBD). It is clear that information on alternative modes of transportation would be extremely valuable to these users. RideScout has partnered with the University of Texas Parking & Transportation Services and with a partner of several notable downtown businesses (SXSW, HomeAway, Whole Foods, GSD&M), who have agreed to promote the use of RideScout to their students/employees. These relationships provide immediate access to a large pool of influential users. Additionally, each of these companies will provide credibility to the RideScout application. RideScout will at the same time reach out directly to users through advertising and public relations (PR).

INVESTIGATION

Investigative Approach

Usability Testing

The project team's first focus of developing the RideScout mobile application was very user-focused by investigators so that the team would best understand how to develop a product that people would use. The team spent an entire summer researching academic papers, talking to people, and downloading all of the newest transportation applications in order to gain an understanding of what users experienced as they tried to navigate different modes of transit. Members of the team each gave up their cars for two weeks to get a feel for the real problems that occur when relying on alternative modes of transportation. The project team's takeaways from this primary and secondary research led to the idea of creating an aggregator of multiple modes of transportation, so that users can quickly compare ride options. Now that the team knew that they had a product that people *wanted*, the key was to make it simple to use.

A technical challenge that continued to affect the investigation during Stage I had to do with the manner in which the information was displayed on the interface, not whether it was possible to provide the information. This was a good problem to have during the beginning stages of the development process, as it was something that could be solved by analyzing user feedback through usability tests. Task 1 of Stage I was marked by investigators setting up a three-week testing period during which as many usability tests as possible would be conducted. Due to proximity to campus and the focus on the college demographic as a target market, the entirety of the testing took place on the University of Texas at Austin campus. Emails were sent to various student organizations, clubs, and classes to solicit volunteers for the usability testing. The criteria for selecting candidates were as follows:

- Must have access to an iPhone, iPod Touch, or iPad
- Must not have downloaded the RideScout application prior to the test
- Preferably had not heard of RideScout or know too much background about the application.

The investigators set up a calendaring system on which volunteers could schedule a thirty-minute block to participate in the usability testing. The response was better than expected, with thirty-six volunteers signing up over the three-week period. Each volunteer was given a \$5 Starbucks gift card for his/her time.

During the test the investigators asked the volunteers to download the RideScout application and asked them a series of background questions, including:

- Demographics—age, year in school, where they lived, etc.
- How they currently get around town (public transportation, car ownership, carsharing memberships, etc.)
- Types of trips they typically take
- Usage of GPS and location-based services
- Mobile phone usage, including favorite applications.

After the application was downloaded onto their smartphone or tablet and the background questions completed, the investigators asked the volunteers to open the application and “think out loud” and describe what they were looking at and thinking. Even impressions of the application’s “splash page” provided great insight into the expectation users had upon first interacting with the

application. Before pressing a button, the volunteers were asked to state what they expected the button to do, and why they were attempting to complete that task. This gave investigators insight into what tasks volunteers wanted to accomplish vs. what they were actually capable of accomplishing with the application. Basic behavior such as a user's willingness to allow the application to push them notifications or allow for GPS location services were important as they were integral to the functionality of the RideScout application. A user's hesitancy to turn on GPS services would severely hinder the user experience by forcing them to enter starting and ending locations and prevent them from tracking rides in real-time.

In addition to self-discovery within the application, investigators asked volunteers to complete specific tasks and evaluated their ability to do so. It is important to note that the volunteers were made aware that this was not a test of their own ability, but of the intuitiveness of the application itself. A few of the sample tasks included: searching for a ride from their current location to their home, booking a pedicab through the application, navigating to the nearest bus stop, and offering a social ride. Investigators resisted answering questions from the volunteers pertaining to the specific tasks, explaining that all questions would be handled at the end. It was important for the investigative purposes to see how volunteers navigated the application and how long it took them to find the correct solution to allow them to complete a task. Special attention was paid to parts of the application flow where users spent significant time and where they were looking for buttons or options that did not exist. These indicated areas where expectation did not match functionality and where improvements or clarifications needed to be made.

The investigators worked off of a loose script to guarantee continuity between tests, but the format was open dialogue. If a volunteer exhibited certain behaviors that warranted additional questioning or clarification, the investigators made sure to ask relevant questions. An example of relevant behavior not directly covered in the script was one volunteer's unwillingness to ride in taxis due to safety concerns. When asked follow-up questions by the investigators, it was discovered that she did not feel comfortable riding with anyone that she did not know, but that she had recently carpooled with a friend-of-a-friend whom she had never met. She indicated that sharing a mutual friend gave her the added layer of trust she needed to feel safe. This was an important insight for investigators in terms of tools needed to encourage people to participate in social ridesharing and a new hypothesis emerged: showing 2nd degree social connections would increase a user's willingness to offer/accept a ride from someone they did not know. Subsequent volunteers were asked questions pertaining to this hypothesis, and utilizing Facebook data to

show friends-of-friends is now a feature in the product backlog that the investigators will scope out for future development efforts.

Usability Test Results

The completion of the twenty-five usability tests marked the completion of Task 1. Moving forward to Task 2, investigators compiled the findings into a format that could be used to inform future product improvement efforts. This consisted of listening to the taped recording of each interview and taking detailed notes on each phase of the test. These notes were combined with notes taken during the tests themselves, which included a more detailed account of user body language, facial expressions, button pushes, swipes, etc. In the end, the investigators had a full picture of each user's reactions during the thirty-minute usability test.

Once the notes on each user's test were compiled, investigators grouped recurring themes to quantify the number of user's who had similar experiences. This made it very clear what parts of the application needed to be improved or updated, as well as those parts that did not cause as much confusion as initially suspected. Specific quotes were added to provide context to the issue, and notes on potential solutions were included as well. By the end of the compiling process, the investigators had a document that ranked issues by most common occurrence and references to which users experienced these issues. This allowed investigators to cross-reference specific issues against the user's background and demographic information in order to find patterns that may arise.

Examples of some of the most common observations that occurred during the usability tests include:

- 44% of volunteers preferred an alternative to logging in through Facebook
 - 64% of these respondents would have refused to create an account due to privacy concerns over the Facebook login.
- A heavy majority of students responded that the total trip cost was more important than time considerations when deciding between ride options
 - Caveat: total trip time ranked as most important on trips where users needed to be somewhere at a given time.
- Most volunteers had reservation about entering their phone number during the account creation process. When asked about their reservations, the most common answer was they do not like to give out their number without knowing how it would be used.

- Confusion on icons: specifically the bookmark and social ride icons were virtually unclicked until prompted by the investigators. Even after prompting, most volunteers did not know what the icons signified.
- 100% of volunteers attempted to scroll to the bottom of the list when first presented with the search results page.
- 36% of volunteers attempted to click on the colored banner above the search results. When questioned what they expected to happen, most respondents said they thought it was a sorting feature.

This list is by no means inclusive of all issues discovered during the usability tests. They do, however, provide a snapshot of some of the bigger and more frequent issues that surfaced in the tests. Further usability testing sessions are expected as additional features are built out and future versions of the application are released.

Development Progress

The final portion of Stage I was to complete the development on Version 1.1 of the RideScout mobile application. The initial work for the application during Stage I began with building strong relationships with different transportation entities in Austin and Washington D.C., as these were the first two cities RideScout would launch in. By April 2013, RideScout had partnerships with a variety of Austin ride providers including: Capital Metro, Car2Go, Zipcar, and three of the larger taxi companies in Austin. RideScout worked with each of these entities throughout Stage I to determine the most appropriate way to integrate their transit data into the application. RideScout's development team integrated Capital Metro, Car2Go, taxis, and peer-to-peer rides into the application by setting up the application's backend architecture.

Some decisions as to what features would be developed had already been made based on RideScout's product backlog. Other decisions, however, were informed by the usability tests described above as well as other feedback gathered during the product launch at SXSW (South by Southwest) and the subsequent few months of customers using the app. Perhaps equally important to the features that were developed were the features that were deprioritized for various reasons (time, partnership terms, integrations costs, integration complexity, etc.). A list of deprioritized features and reasons for the prioritization are as follows:

Features Deprioritized

- **Social sharing**—this included the investigation of integrating the ability to post information to social networks (Facebook, Twitter, Google+) from within the application. Additionally, giving users the ability to share the application with contacts and friends from inside the application was investigated. The investigators believe these features will eventually be integrated into RideScout, but further hypothesis testing on users' willingness to utilize these tools needs to be completed. Integration costs are significant and development time could exceed one month.
- **Zipcar integration**—the investigator's discussions with Zipcar representatives regarding a potential partnership have not progressed to the point where integration was possible to scope at the time development was scheduled to begin. Additionally, current functionality within the application does not support round-trip estimates, which is somewhat problematic given Zipcar's model (a user must return the car to the same location from which it was picked up). Ultimately, the investigators believe Zipcar integration will happen and be beneficial as an additional ride option for users. Investigators will continue conversations with Zipcar representatives.
- **Nextbus integration**—Nextbus integration would be extremely valuable to the RideScout application. Integrating the Nextbus feed, however, requires significant development time given the need to cache real-time bus information. The investigators will prioritize Nextbus integration once it is determined that a given city presents considerable potential and shows steady progress in terms of user downloads and overall usage. It is important to note that once the backend database is completed to support Nextbus data, future integration in additional cities will be much easier.

Features Developed

- **Detailed tutorial**—Based on the usability testing described above, it was determined that there was significant confusion regarding the icons that appear in RideScout. Additionally, many users declined the enablement of GPS and Notifications, which significantly reduced the effectiveness of the application. Turning on GPS services allows RideScout to geo-locate a user, populate their current location, and provide real-time information on time and distance estimates. Additionally, when taxi/pedicab drivers have GPS turned on, users can track their progress in real-time. Turning on Notifications allows the application to notify users that their ride request has been accepted or denied. To remedy these issues, investigators looked at several options to improve the intuitiveness of the icons and clarify the need for users to turn on GPS and Notifications

services. In the end, it was decided that showing the users a brief (mandatory) tutorial immediately following account creation was a quick and easy way to solve a lot of the confusion. Additionally, many applications now employ the tutorial strategy to give users a quick overview of the capabilities of a given application. With the decision made, the investigators created an account tutorial, which pops up immediately after a user creates an account and logs in for the first time.

- **Car2Go booking**—The ability for users to find a nearby Car2Go along with time and cost estimates was present in version 1.0 of RideScout. Based on the business agreement with Car2Go, the investigators possessed the ability to integrate a booking feature where a user could reserve a car for up to thirty minutes. Due to time constraints, this feature was initially deprioritized in favor of launching a more scaled down version of the application. Based on initial user feedback, the investigators decided to make the booking feature a high priority. During the usability tests, several volunteers did not know what to do once they had navigated to the Car2Go details page. At the time the screen simply showed the location and details of the designated Car2Go. Users attempted to click on various parts of the screen, unsure what they were supposed to do next. To remedy this, the investigators added in a dialogue box at the bottom of the screen with instructions for the user to navigate the Car2Go and proceed as normal. It is important to note that Car2Go information is available in each of the seven cities in which Car2Go operates. During Stage I, the booking features looked as follows:
- **Sidecar integration**—Throughout Stage I, the investigators developed a strong relationship with the Sidecar team. Sidecar provides a platform for users looking for rides to find drivers willing to offer rides. The system acts similarly to a taxi dispatch in that users can get on-demand rides, with the difference being that payment is in the form of voluntary donations based on trip distance. The investigators signed an official partnership with Sidecar and were granted access to the Sidecar API. Now that the integration is complete, users can search for and compare Sidecar ride options among other types of transportation offered within the application. To book a ride, users are transferred to (1) the Sidecar application (if already downloaded on their phone), or (2) to the App Store to download the Sidecar application (if not already downloaded on their phone). The user's starting and ending locations are pre-populated in the Sidecar application based on the information entered during the RideScout search. Time and cost estimates are displayed in RideScout and are updated and accurate. It is important to note

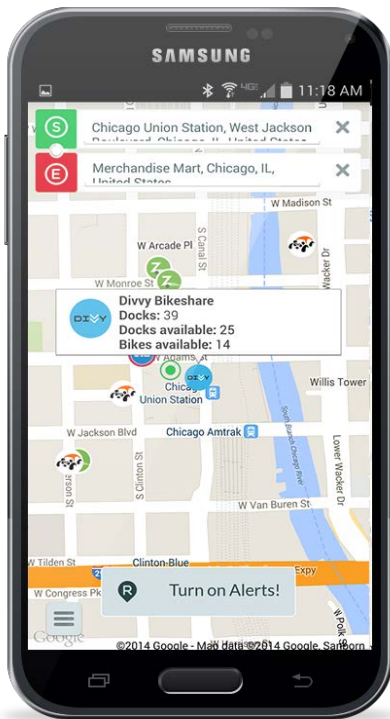
that Sidecar information is available in each of the seven cities, which Sidecar currently operates.

- **Capital Bikeshare integration**—similar to the Sidecar integration mentioned above, the investigators were able to get access to the Capital Bikeshare API and pull information on nearby locations of bike racks closest to their starting and ending locations, as well as walking estimates to the bike locations. Interviews with several Capital Bikeshare members revealed a frustration with not knowing whether there were bikes available at the racks, and if there were open spots to park the bikes at the destination. The investigators were able to build this information into the application so that users get an accurate summary of how many bikes are available and how many open spots there are at the destination rack. Early feedback was extremely positive, and further investigation into incorporating membership information and reservation capabilities will be undertaken.
- **Alternative to Facebook login**—the one change the investigators knew had to be prioritized was providing an alternative login process to Facebook authentication. Early interviews with potential users prior to developing the application indicated that the RideScout target market did not have reservations logging in through Facebook. Additionally, several other peer applications utilize Facebook login. When analyzing usage metrics, however, the investigation discovered that between 35% and 40% of users who downloaded the application never completed the login process. During the usability testing sessions, the hesitation to provide Facebook information was confirmed. Users were concerned that information would be posted on their behalf on their Facebook profiles, and that their information would be shared with third parties. When asked follow-up questions, these users indicated a desire to have an option to login by different means. As a quick fix while looking into alternative login methods, the investigators included a brief message on the login screen regarding the ways with which RideScout would use Facebook information. The investigators then researched dozens of alternative login methods, and finally settled on a text-pin verification system. Users login, provide their mobile number, and are sent a text with a six-digit pin. Once this pin is entered in the designated space, users can create an account. This method accomplishes much of what the Facebook login provided in terms of authenticating that a user is in possession of the phone and number they used to create an account. Initial feedback was positive, and the percentage of users creating an account after downloading the application increased.

Beta Launch

In tandem with the development of the actual application during Stage I, the project team also developed a prototype that demonstrated the full functionality of the RideScout application. The team used this prototype to demonstrate the concept to users and get as much feedback as they could, assisting them in decisions on which additional feature sets should be developed. Further usability tests continued to help answer questions around how to best display the information, and what other data points consumers found important. Through a series of A/B tests, focus groups, and product demos, the team was able to gain a lot of insight into what drives user adoption. This in turn informed the development efforts, making sure that the team was not wasting time and resources on unnecessary features and ensuring that the product would be a success with consumers. The user testing results were critical in identifying what features customers desired, as RideScout was then able to prioritize these features based on available resources and development costs.

After the initial testing with the prototype and successful submission to the Apple App Store, the project team began a 2-week Beta Launch of version 1.1 in February 2013. During this Beta Launch, the application was released to 80 users, many of who had signed up for RideScout's newsletter and indicated a willingness to participate. This Beta Launch, and following evaluation of the product, marked the completion of Stage I as the project team had completed all of the associated tasks. The Beta Launch also allowed the team to verify that the application worked from a technical and user prospective, while also validating that there was a



demand for the service that the application provided. Post Beta Launch, the team was able to quickly document bugs and prepare fixes prior to opening the application up to a broader audience. Additionally, the project team were able to make some user interface (UI) and user experience (UX) changes based on initial feedback of the product.

Product Launch

After a successful Beta launch and great feedback, RideScout was assured that the product it rolled out to the public would be functioning, accurate, and an application that people found useful. The beginning of Stage II (Task 4) was marked by the official product launch in Austin, Texas in March 2013. The

target market for this launch was described in the Transfer to Practice section above, with the focus on millennials, specifically, students and professionals. As part of the Austin launch, investigators leveraged existing relationships with university officials, transportation management agencies (Movability Austin, Campo), Capital Metro, and the City of Austin. Joint marketing opportunities were also executed with transportation providers such as Car2Go and Capital Metro to cross-promote services and spread the word.

To ensure traction and a successful product launch in Austin, RideScout focused on the large population of university students at University of Texas at Austin, St. Edwards University, and Austin Community college by providing ride partner promo codes for free or discounted rides to students. RideScout also focused more on word-of-mouth marketing by starting a brand ambassador program with Austin university students, which allowed student brand ambassadors to spread the word about RideScout to their peers. The Austin brand ambassador program proved successful for RideScout as brand ambassadors were paid \$1.50 per download of the application—this was an inexpensive cost per download for the company.

As the project team built ridership through the Austin launch, they began tabulating data that the application was now able to capture and store. The type of data and value it will serve is explained in the Potential Impacts section above, and has been key in determining traction and usage rates. The project team targeted 10,000 downloads in Austin in the first year of launch. This figure was decided on after looking at the adoption rates in Austin of similar markets, such as carsharing. For example, Car2Go signed up 15,000 users in the first six months of operation. This figure of 10,000 downloads in Austin was reached in the first year of launch.

After demonstrating traction with iPhone users based on user downloads from the Austin launch, the project team began Android development in conjunction with the development of the full-feature functionality for the iPhone application. Traction with iPhone users was proven as RideScout's cumulative downloads, week-to-week downloads, and active users maintained a positive and impressive growth ratio. As the Android platform was developed, RideScout continued to refer to the recommendations of customers and focus groups developed in task 5. When developing the Android platform in Task 6, a technical challenge became apparent to the team when planning for the development of the Android app. There were obvious technical inconsistencies and differences between the developments of mobile applications for Apple versus Android. Challenges were also identified in developing a user interface for the Android

application that looked similar to that of the Apple version. To address these developmental concerns, RideScout hired an experienced Android developer who could build an Android version of the product.

While developing version 1.1 of the RideScout mobile application and launching this product in Austin, RideScout recognized a challenge that affected product expansion: integrating new ride providers required different processes and levels of effort by the development team. For some entities, like public transit, the data was much more standardized and easy to integrate. For others, like carsharing programs, some work was needed on a one-off basis to figure out the most efficient way of incorporating their feed into the RideScout system. This underscored the project team's focus on a regional approach, using a city-by-city rollout rather than a national campaign. This technical issue presented a problem of scalability, as the project team originally believed they could not easily “turn on” the application nationwide. This technical issue was solved when RideScout integrated Google Transit, which allowed the RideScout public transit feed to be used in any locality where Google Transit operates. Additionally, integration of the Car2Go API allowed the project team to show users information on Car2Go locations in each of the six cities in which Car2Go was operating. Even though the integration of these two transportation feeds allowed RideScout to be a “national” operation, it was still very much focused on a regional approach, using a city-by-city rollout rather than a national campaign.

Geographic Expansion—Washington D.C.

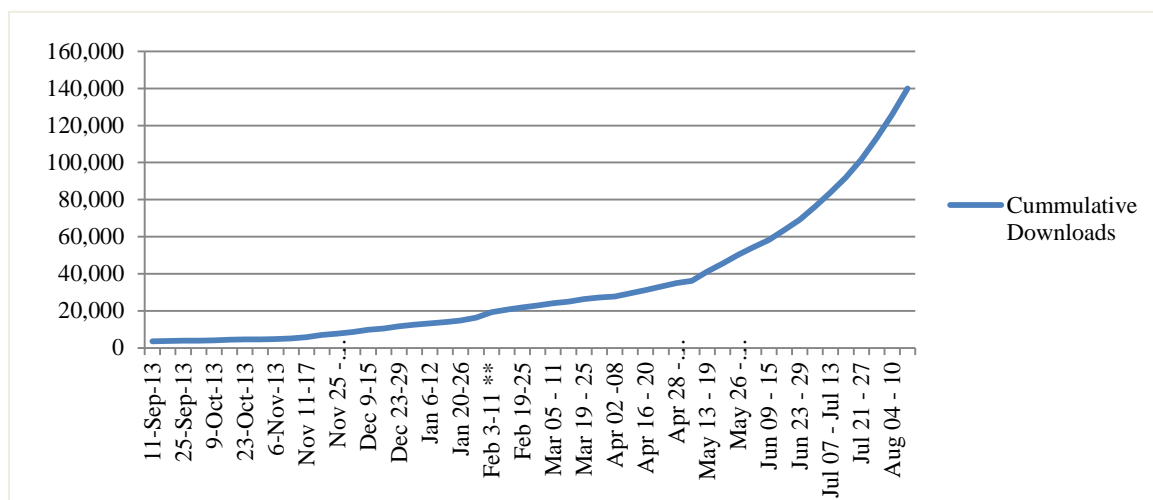
After proving demand for the product with over 700% growth in active users between July and November 2013, in addition to over 6,000 cumulative downloads in just eight months since the launch in Austin, RideScout expanded the product to Washington D.C. in November 2013, leveraging existing relationships there to increase speed to market. RideScout decided to launch in Washington D.C. as their second city because of the high number of young professionals who were eager to adopt new transportation technologies, as well as the proximity to lawmakers and people from all over the United States and around the world. It made sense for RideScout to choose Washington D.C. as their second launch city, since it has a millennial population of 1,296,000 and more than 600,000 daily transit users. When planning for the launch in Washington D.C., RideScout used data gathered from the Austin launch to consider the best approach to the D.C. rollout.

When refining the launch in Washington D.C., RideScout recognized from the Austin launch the importance of relationship-building efforts in a new city. Similar to the launch in Austin, in the months leading up to the launch in Washington D.C., RideScout focused on building relationships in D.C. with transit agencies, universities, transportation management agencies, city officials, other region-specific transportation providers, and other local partners. Additionally, based on data collected from Austin’s launch, investigators decided that rather than adopt the Austin marketing strategy of traditional marketing and a “public relations approach,” for the Washington D.C. launch, RideScout would execute an “engagement” approach where investigators would better focus its efforts and resources on reaching out to and engaging those that will benefit the most from RideScout. Investigators decided on this approach after recognizing that the user retention metrics, such as returning users, retained users, and power users (users that log sessions in the application 5+ times per week), were not experiencing growth in Austin. Investigators concluded that the user retention metrics were not increasing in Austin because RideScout was not engaging enough with its users.

For the “engagement” marketing approach in D.C., investigators further defined the millennial target audience as individuals that came from the communities RideScout already was engaged with (Car2Go, Sidecar, Capital Bikeshare, etc.). The RideScout team agreed that for the launch in Washington D.C., they would continue to target millennials until metrics and feedback changed their assumption that millennials were no longer the target audience. Investigators decided to focus resources on this audience by finding where they live, work, and play, where RideScout then could find out how to best integrate in to their lifestyle. Investigators decided the D.C. marketing campaign would overall focus on partnerships with high impact opportunities, extensive social media outreach, mobile advertising (real-time bidding exchanges), and leveraging networks for high impact press releases. Examples of this marketing approach included:

- Engagement opportunities for outreach marketing—attending high profile events as well as smaller more geographically diverse opportunities that attracted millennial crowds, such as festivals, bars, restaurants, and other nightlife events.
- Operation: Hit ‘em Where They Live—where investigators approached property managers to see if RideScout could hold social events and be listed on their electronic bulletin boards.
- Connecting with destination locations that rely on millennials for their economic livelihood, such as bars, concerts, Events DC, and sporting events.

- Launching the Android product at the same time as the Austin launch to increase publicity.
- Hiring a full-time social media specialist that is both effective and non-traditional to increase RideScout's social media outreach, build a more engaged audience of D.C. area fans and adopters, and improve customer service response.
- Creating a sixty second promotional video, similar to the video created in Austin, to demonstrate how easy RideScout is to use and include Washington-area landmarks and transportation modes.
- Developing relationships with influential/transportation demand management-relevant bloggers and other online media bloggers.
- Establishing an office at startup incubator 1776 in Washington D.C. with additional staff to allow RideScout to be significantly involved with the community, as well as ensure the product had the local transportation flavor.



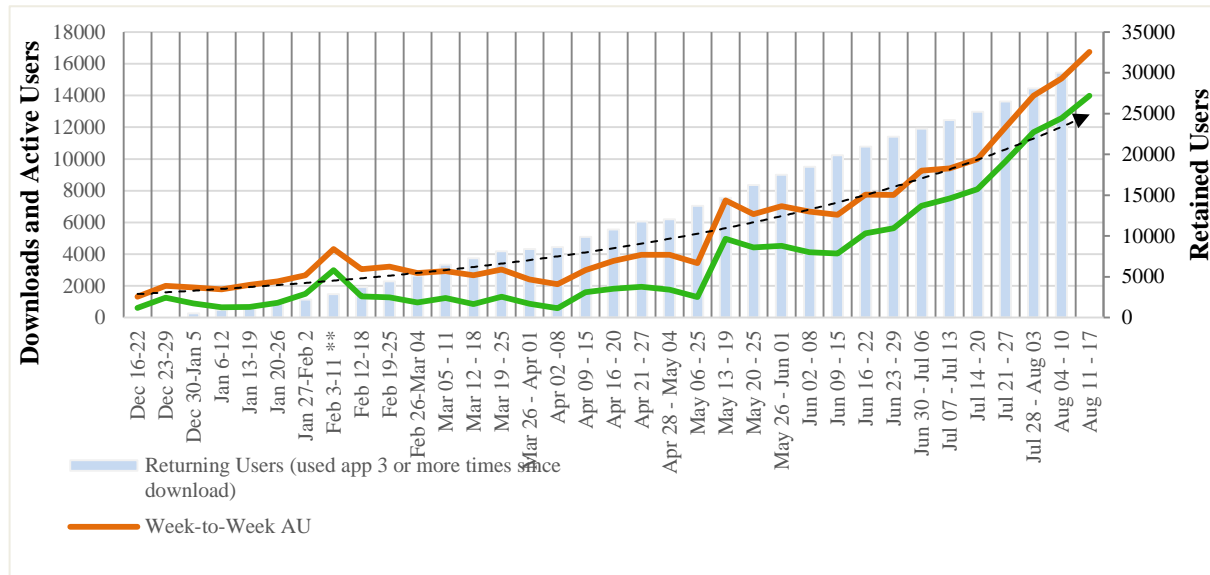
The metrics of success for the D.C. roll-out were defined as:

- Increasing users, partners and ride providers
- Seeing current users/customers using the application as repeat users
- Increasing revenue
- Business becomes more profitable, and is scaling
- Signing new distribution deals every 90 days
- Hiring new employees and interns.

Following the launch in Washington D.C., RideScout collected substantial amount of data from Austin and D.C. to determine the success of the launches. The investigators continued

to pull data from Austin and D.C. over the following months to evaluate the overall effectiveness of the application and if the application could be replicated in additional cities. In the final task of Stage II, the application was proven highly effective and the D.C. marketing strategy was determined a success after data revealed that since the late November 2013 launch in D.C. to March 2014, RideScout had surpassed 25,000 cumulative downloads, and logged over 300,000 sessions, including multi-modal investigation. During this 4-month time period, the application maintained above a 10% week-to-week growth in downloads and a greater than 12% week-to-week growth in unique active (returning) users. From these data, investigators concluded that RideScout's marketing approach in D.C. was successful as user retention metrics continued to experience substantial growth post D.C. expansion. Additionally, investigators concluded these are positive trends that if sustained, would provide a broad enough user base in the next 12 months to test the project team's initial hypothesis (individuals 17–34 are more likely to utilize alternative transportation platforms if they have reliable access to 3 or 4 safe and legal options apart from their own automobile).

Overall, the application was proven effective after evaluating other account usage patterns (power users, retained users), success at partnering with transportation providers, and receptiveness to the mobile application by regional partners and prospective partners. In summary, the development and initial deployment of the RideScout mobile platform in Austin, Texas, and Washington, D.C. had been subject to a fairly rigorous usability-testing environment in two distinct markets. Over Stage II, the functionality of the product, and the demonstrated demand by individual users validated the potential for RideScout to achieve a broad user base by continued expansion to additional cities.



Work Plan

Stage I

Task 1: Perform Usability Testing

Usability testing with focus groups will be performed to assess potential improvements to the existing application as well as additional features and capabilities to be built. This testing will enlist new users who have not had prior experience with the application and will focus on ease-of-use, intuitiveness, and value assessment of the product.

Task 2: Evaluate User Testing Results and Customer Feedback

Using responses from the usability testing described above as well as solicited feedback from current users, the investigators will compile findings into a product-planning document. This document will guide further development efforts and prioritize additional features to be added to the application.

Task 3: Complete Development of Version 1.1 of the RideScout Mobile Application

Working with the development team and using the findings above, the project investigators will set a scope in terms of time, cost, and features/improvements to be

added. Additional features to be investigated in addition to others discovered in the research include:

- Alternatives to current authentication through Facebook
- Car2Go and Zipcar reservation capabilities
- Integration of NextBus transit feed (real-time bus tracking)
- Scalability of the application
- Sharing functions: allowing users to share the application with their friends/contacts.

Stage II—Launch and Field Test Analysis in Austin, Texas, and Washington D.C.

Task 4: Launch in Austin, Texas

The official launch in the Austin area will be focused on the large population of university students (University of Texas at Austin, St. Edwards University, Austin Community College), downtown commuters, and nighttime event seekers.

As part of the launch, investigators will leverage existing relationships with university officials, transportation management agencies (Movability Austin, CAMPO), Capital Metro, and the City of Austin. Joint marketing opportunities with transportation providers such as Car2Go and Capital Metro will also be planned to cross-promote services and spread the word.

Task 5: Data Collection, Analysis, and Evaluation

Investigators will use the data collected during the Austin launch to make further development recommendations and adjust the marketing strategy for Austin and future cities. Data collected will include at minimum: usage analytics, customer feedback, additional focus groups, press coverage, and social media response.

Task 6: Develop Application on the Android Platform

After demonstrating traction with iPhone users and developing the recommendations discussed in Task 5, the project investigators will conduct Android development. The Android version of the app that will be developed will be identical or similar to the iPhone app, and will be launched with the Washington, D.C. rollout.

Task 7: Refine Launch Strategy based on Austin Findings and Launch in Washington D.C.

Using additional data gathered during the Austin launch, the new city launch strategy will be reviewed by the RideScout team to determine best practices and devise next steps. While continuing to refine the marketing and outreach efforts in Austin, investigators will move forward to prepare for a launch and evaluation in the Washington D.C. area.

In the Washington D.C. area, relationship-building work will be conducted. Similar to Austin, these will include: transit agencies, universities, transportation management agencies, city officials, other region-specific transportation providers, and other local partners. RideScout will have an employee in Washington D.C. for this effort.

Task 8: Data Collection, Analysis, and Evaluation

Following the launch in Washington D.C., investigators will pull combined data from Austin and D.C. and evaluate overall effectiveness of the application. Effectiveness will be measured not only in terms of overall usage, but also by taking into account usage patterns, success at partnering with transportation providers, and receptiveness to the mobile application by regional partners and prospective partners.

The data and analysis will help evaluate strategies and tactics that were particularly successful as well as highlight efforts that did not work as intended. It will also be used in estimating the potential adoption rate of the RideScout mobile application in the Austin and Washington D.C. area and evaluate if the application can be replicated in additional cities.

PLANS FOR IMPLEMENTATION

Expansion to Major Markets

In April 2014, RideScout executed plans of expanding the launch of the application,

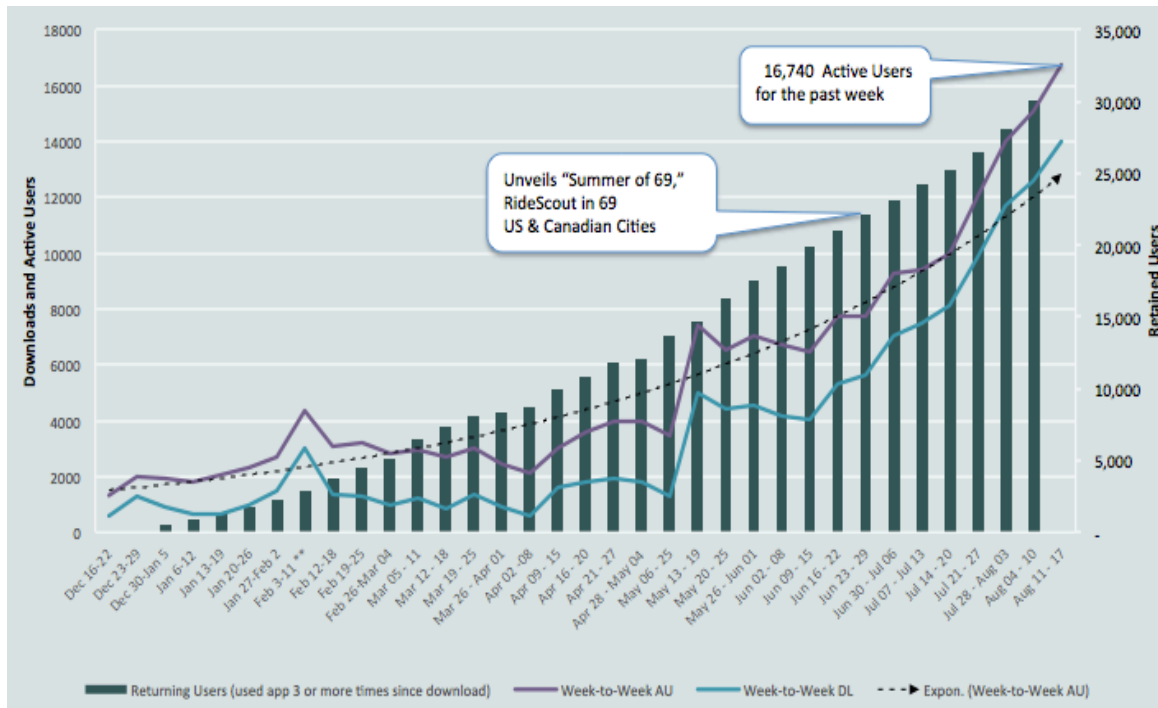


adding 19 unique options to get from point A to point B in the San Francisco bay area. Soon after, RideScout hosted launch events, press events, and social strategies to launch and gain users in Boston, Chicago, and New York in addition to the already established Austin and Washington D.C. optimized markets. The implementation process and strategy for these markets followed the successful launch strategy used in Austin and D.C. when considering the marketing efforts and development process.

On July 9, RideScout then launched a major update to the application by launching in sixty-nine different major markets throughout the country in the “Summer of 69” campaign. RideScout identified this as a successful opportunity to pursue as the project team realized the ease of integrating 300+ transit providers across the country by importing this data from the GTFS exchange and utilizing data already available through RideScout's partners. RideScout chose these sixty-nine cities after performing an analysis on what options were currently available in each city through RideScout. Each city that had 4 or more unique transportation options was turned on and became “live” during the launch of RideScout’s “Summer of 69” campaign.

This campaign allowed RideScout to bring together 337 transportation services, enabling 186 million people to search for rides, discover more options and explore dozens of cities. “In a short period of time, RideScout has secured relationships with ride providers in these 69 locations and people from cities around the world who have been asking for RideScout, a marketplace for all their transportation options,” said Joseph Kopser, Co-Founder and CEO of RideScout. “Our ride search engine has allowed us to scale quickly across North America, integrating both nationwide and hyper local solutions, something none of our competitors have been able to match.” RideScout is now available around the country as far west as Honolulu and as far east as New York City.

The results of the “Summer of 69” campaign were remarkable as RideScout continued to report record-breaking numbers each week during the following months. The success of this mass launch was reflected in data collected as RideScout surpassed 139,000 downloads and over 446,000 sessions in the beginning of August. During this time, RideScout's (returning) users count hit 16,740. Additionally, RideScout’s number of power users (users that use the app five times or more during a week) continued to experience an upward trend, where the application documented more than 1,300 power users in one week.



Backend Developments

Although the RideScout engineers, marketers and operations team made commendable progress on the User Interface/User Experience (UI/UX) on IOS and Android over Stage I and II of the NAS Project, the team has continued to work diligently on backend development to create a sustainable architecture to scale the platform and harvest the data as recommended by technical experts.

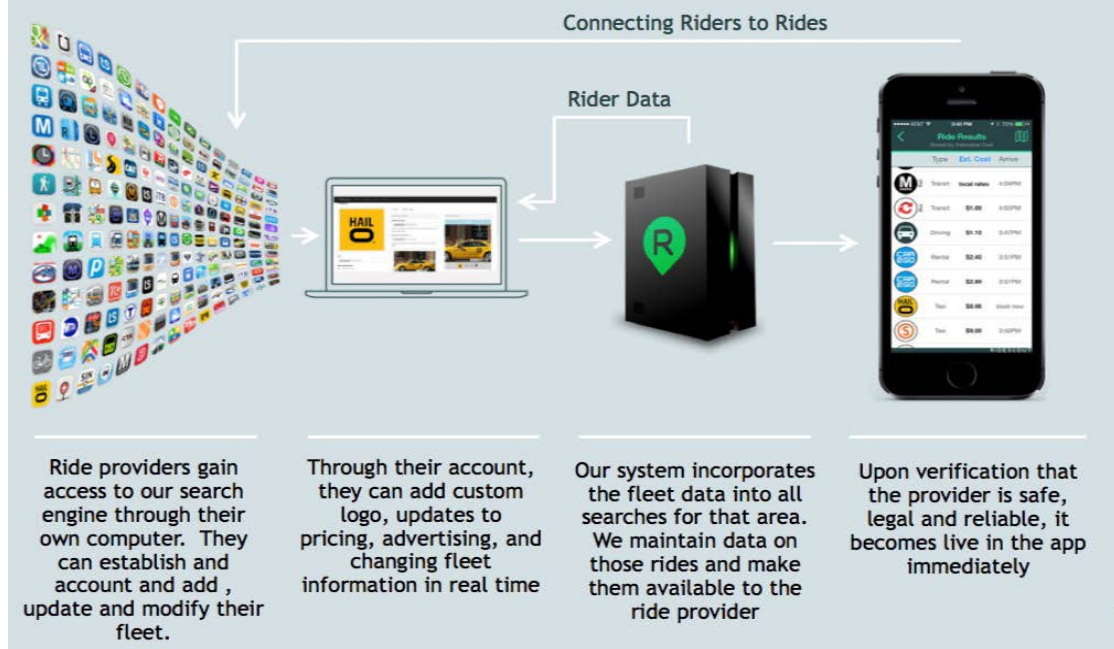
Modified Backend

The RideScout application backend is being modified so that RideScout may add additional ride providers, both public and private, to the RideScout mobile platform without requiring a focused engineering effort.

Hardened Application Programming Interface

RideScout has also developed a hardened Application Programming Interface (API) that public and private transit entities will soon be able to integrate approved applications into (either as a managed fee-for-service or as a semi-publicly provided service).

What's next: The E-commerce Platform for Ground Transportation



New Data Repository

RideScout has created a data repository accessible to approved public and private entities for the purpose of increasing efficiency of existing and emerging transit options and access. The repository should capture as many data points as possible—while protecting individual privacy—so as to facilitate analysis of both primary tertiary policy and behavior issues including: environmental impacts, socio-economic factors affecting transit access and usage, and accident / fatality rates among multi-modal users, among many others.

Partnerships

Data Collection Dashboard

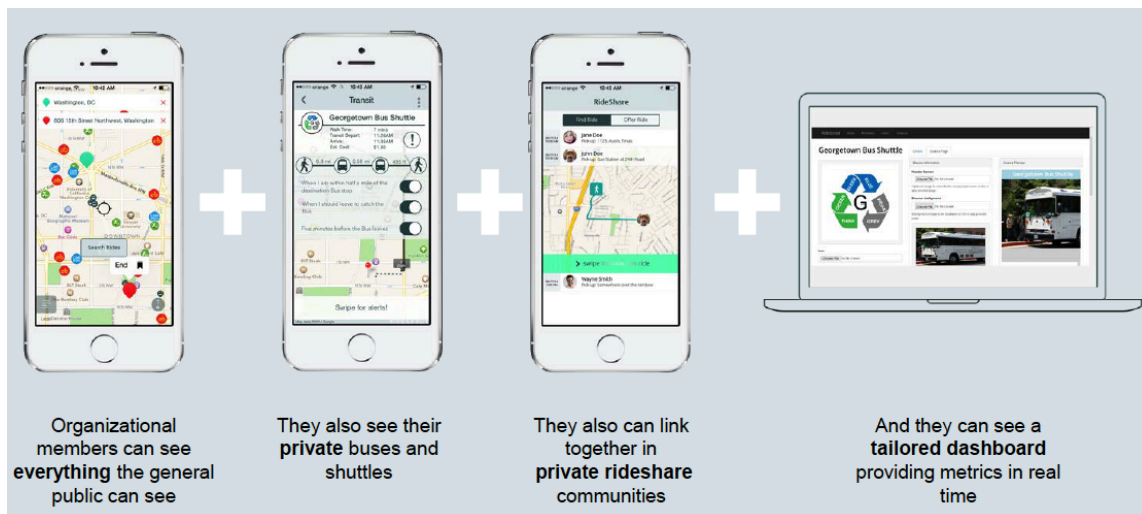
The project team has found municipal, commercial and academic demand for data to improve and construct transportation solutions for students, faculty, citizens, or employees. RideScout has built a tailorable data dashboard, collecting anonymous user and rides data across IOS and Android platforms to be used to improve existing transportation infrastructure. Unlike competitors who are only allowed to offer one-prong solutions (i.e., data on biking, carsharing, ridesharing, walking, etc.), RideScout consolidates all options into one place and allows the project team to tell partners where people start, begin, and what mode of transportation they wish

to use. This data can, is, and will be used heavily in the movement towards crafting smarter and more efficient communities.

Transportation-As-A-Service (TAAS)

Over the life of the Transit-Idea Project, RideScout recognized the need of a comprehensive and customized technology platform that provides mobility services for universities, large organizations, and municipalities. RideScout will create and solidify partnerships with the before mentioned entities to provide RideScout's transportation-as-a-service (TaaS) component.

Six months into discussions with George Washington University, RideScout officially set the trajectory for a pilot program to build a solution for large private transportation networks. Among the other intrinsic benefits George Washington is seeking from RideScout's TaaS, the university is seeking a means to get their students home safely from activities, especially late at night, using their students' ID cards. Working with a national back-end tech company, local transportation partners and the RideScout development team, RideScout has officially solidified a partnership with the first of many large private organizations, offering ride options to specific members of organizations. This concept can be applied and adapted to a number of different universities, organizations, and municipalities across the country to bridge the gap between public and private partnerships for the public good.



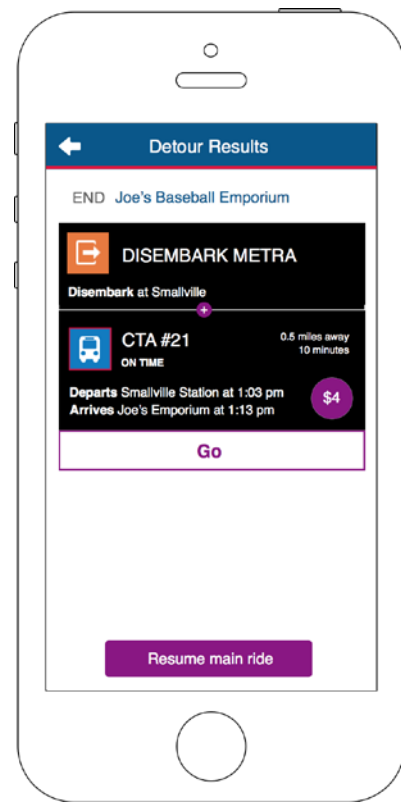
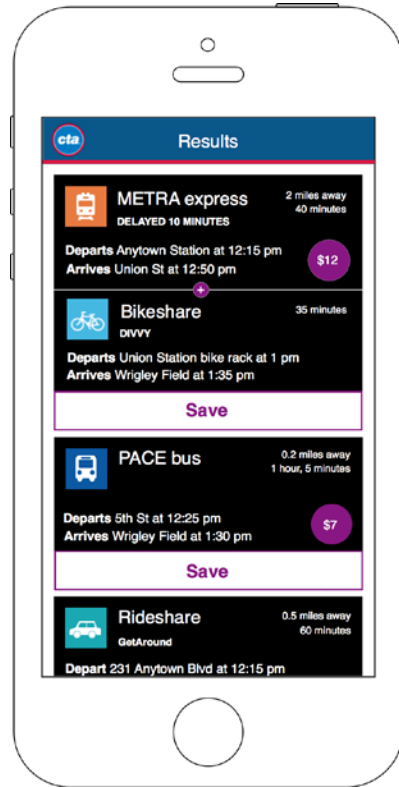
Additionally, RideScout has secured partnerships with the Massachusetts Institute of Technology (MIT) for data and analytics pilot programs, as well as a strategic partnership with Georgetown University to integrate all proprietary modes of campus transportation as well as the building of a private network.

RideScout continues to pursue plans of providing transportation-as-a-service (TaaS) to universities, large organizations, and municipalities across the nation by initiating conversations and developing relationships with these organizations. Most recently, RideScout has engaged in conversations with a number of large municipalities including Chicago, San Francisco, and Boston. Ideally, RideScout plans to be *the* transportation app for these municipalities. There is a real need from large organizations for a comprehensive, customizable transportation technology platform, and RideScout can provide this solution.

RideScout will offer three core areas of value for organizations that partner with them for TaaS:

1. *At-a-glance, at-your-fingertips fully real-time help* for riders in figuring out how to get from A to B in the city, with options customized to their needs selected from *everything* the city/organization has to offer: existing rides, brand new services, private buses/shuttles, private ridesharing communities, and recently emerging concepts.
2. *A seamless transportation experience* where riders can plan, ticket, ride, get credits for making the right transportation choices, and even learn about what their city/organization has to offer beyond transportation, without ever leaving the app.
3. *New data streams* for the partnering organization on the trip plans and rides undertaken in the city or through the organization every day, and new tools to help the agency manage congestion and enhance the rider experience.

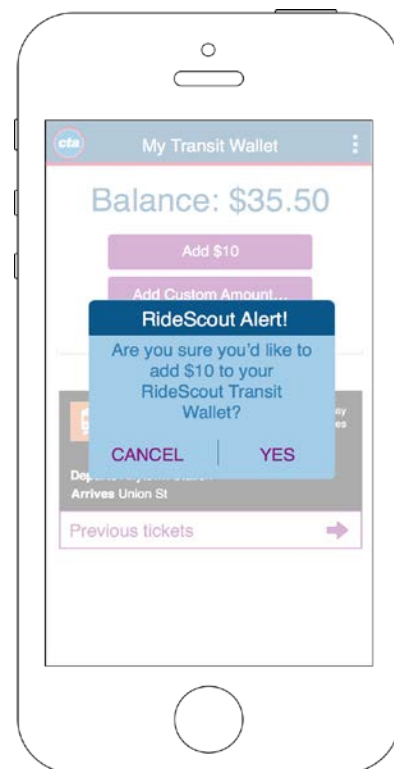
By way of specific features, RideScout will offer these partners:



- *The core RideScout public product*, everything that riders in 69+ cities around the U.S. and Canada know and love.
- *Optimization and localization*, to make the app the organization's own.
- *Data and Analytics Dashboard access*, to give the organization a unique and real-time window into their transportation system.
- *Integration of real-time data feeds from city vehicles*, starting with what is already available, adding new services when possible.
- *Integration of private shuttle providers, where available*, to cover the full range of technically enabled and available transportation options.
- *Integration of dynamic ridesharing services*, to meet those unique travel needs that public transit and major private ride providers cannot always serve
 - For additional cost, RideScout offers a private ridesharing network unique to the organization.
- *Real-time travel delay notification*, drawing on traffic and transit delay feeds where available to give riders the tools to make smart trip decisions
 - Traffic congestion (arrival and departure predictions based on real-time traffic for you-drive, carshare, taxi, and ridesharing options)
 - Real-time transit alerts (feed provided by transit agencies).
- *Trip planning map widget* for inclusion on select agency websites, for maximizing the access and literacy for communities on all public and private ride options, as well as a connection to the organization-specific RideScout product options.
 - At additional cost, a free-standing kiosk version of the widget is available, but hardware must be provided by the agency.
- *RideScout Points*, RideScout's very own "frequent rider" loyalty system, which can be used with city-provided retail discounts and rider incentives.

In addition to the core set of functionality for the RideScout mobile platform, customization options are available:

- *Trip planning map widget* for inclusion on select city



and organization websites, for maximizing the access and literacy for the community on all public and private ride options, as well as a connection to the city-specific RideScout product options.

- *Embedding into existing apps:* at additional cost, components of the RideScout engine and interface are available for embedding in existing city and agency mobile and web apps.
- *Kiosk product:* at additional cost, the RideScout trip planner is available as a standalone map for kiosk-style display on city/agency-owned hardware, with a reduced set of functionality.
- *White label:* at additional cost, the RideScout engine can be wrapped with an organization branded user interface.

At additional cost and with appropriate city, organization, or university support, RideScout can offer:

- *Mobile and intermodal ticketing:* RideScout works with backend partners to deliver visual ticketing for seamless, faster transitions in certain transit settings (e.g., limited access shuttle networks). Wider deployments depend on the city/organization facilitating integration with ticketing backends, which also allows the option for riders to add value to and manage traveller's accounts. Currently only available on a limited, opt-in basis.
- *RideScout's Destination Awareness Service,* providing location-sensitive recommendations on local activities and city/organization destinations based on rider trip plans. Currently with limited availability.
- *Custom paratransit access solutions,* where specific communities, such as students and the disabled, can be served through a unique subset of mobility options and transactions handled entirely by the RideScout backend.

CONCLUSIONS

Outcomes

Increased Transit Usage

RideScout has provided a tool to consumers, which shows them all of their public transportation routes that would get them where they needed to go, as well as departure time, trip length, and cost of information. RideScout has made public transportation more transparent and less of a hassle by allowing users to discover that public transportation may be the fastest and cheapest way to get to their location. Research has shown that once people have a few positive experiences

on public transit, the likelihood of repeat usage increases dramatically. RideScout recognizes this and has worked diligently to provide RideScout users with accurate public transportation information and helpful public transportation alerts so that commuters are more likely to choose public transportation as their best option. With over 300,000 sessions logged in RideScout from the late November 2013 launch in D.C. to March 2014, RideScout believes that if these positive trends are sustained, they will have a broad enough user base in the next 12 months to test how RideScout has changed transportation behavior of users and increased transit usage in cities.

Improved Operating Efficiencies

Over the life of the NAS project, RideScout began capturing incredible amount of information that will be very valuable to municipalities, universities, and other large organizations. By continuing to track sessions logged in the application beyond the 300,000 sessions logged in RideScout over the life of the IDEA project, RideScout will be able to gain insight into volume and patterns of transportation usage, peak and off-peak traffic “hot spots,” commuter habits, preferred modes of transportation, true origin and destination information, etc. All of this information will improve transit-operating efficiencies of universities, municipalities, and organizations by allowing more effective allocation of resources with more strategic planning. RideScout will ultimately provide much more granular data in real-time, which will give transit agencies the flexibility to conserve resources and better serve their passengers.

Protecting the Environment and Promoting Energy Independence

The environmental impact of riders choosing alternative modes of transportation and decreasing their car usage is staggering. RideScout understood from the beginning that individuals default to driving for the perceived flexibility and also due to an unwillingness to research alternatives. This is why RideScout continued to work on including all safe, legal, and efficient transportation options into its mobile application over the life of the NAS project. By providing multiple ride options in one application, RideScout believe that it is removing both of these barriers, and giving users other options that are just as good or better than driving their own car. Although it is hard to provide an exact estimate at this time with only 25,000 cumulative downloads achieved during the IDEA project, RideScout believes that by 2018 it can save 2.4 million tons of CO₂ and remove the equivalent of 427,000 cars from the road each year with a sufficient amount of active users.

Next Steps

Moving forward, RideScout will continue to deliver on its commitment of bringing efficiency and

innovation to the transportation industry. RideScout will continue to track and collect data on sessions booked through RideScout so it can further test the initial hypothesis that individuals age 17–34 are more likely to utilize alternative transportation platforms if they have reliable access to 3 or 4 safe and legal options apart from their automobile. RideScout expects to be able to test this initial hypothesis within the coming year as long as it continues to maintain positive growth trends in the user downloads.

RideScout will also continue to work diligently on the product developments recommended by its technical advisors. These product developments include backend developments like hardening its API, modifying its backend, and creating a new data repository. To maintain momentum and growth, RideScout will further build on what strategies and tactics proved successful during the transit IDEA project, while maintaining a forward-looking mindset. When considering how to further develop the product, RideScout will continue to gauge user product demands ensuring that it incorporates features that are most important. RideScout understands from the IDEA project that a key point going forward is to concentrate on refinements and improvements to its product in order to gain and retain new users. Going forward, RideScout will concentrate on providing a product to users that is unique, reliable, and ahead of the competition.

Since the inception of the transit IDEA project, RideScout has developed a number of new relationships with municipalities, universities, large organizations, and key transportation industry players. Proceeding, RideScout will maintain these relationships and leverage them to raise awareness about the product. In its next steps, RideScout will continue conversations with knowledgeable, experienced, and influential leaders for strategic recommendations and additional guidance.

When evaluating future plans, RideScout identifies continued geographic expansion as one of its key tasks in order to broaden its user base and increase market share. The team will continue to focus on an engagement marketing strategy as they discovered from the Austin and D.C. launch, as well as the summer of 69 campaign, that this is an effective way to grow overall users and ensure users continue to use the product. When considering expansion, the goal remains to introduce RideScout as a daily part of a person's mobility wherever RideScout is available. As RideScout acquires more resources, the team will focus not only on expanding geographically, but also on expanding the team. The continued expansion of the team allows RideScout to

continually improve the product and expand its community outreach, which is critical in maintaining a competitive advantage.

All in all, RideScout learned a number of valuable lessons about product development, expansion strategy, marketing, and strategic planning over the course of the transit IDEA project. In the future, RideScout looks forward to building upon what was learned over the course of this project, while continuing to gain momentum within the transportation industry as a key player.