StarMetro’s Pilot of a Mobile Fare Payment App

MOBILE FARE PAYMENT TECHNOLOGY PHASE II
BDV25 TWO 943-63

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FLORIDA DEPARTMENT OF TRANSPORTATION
FREIGHT LOGISTICS AND PASSENGER OPERATIONS TRANSIT OFFICE

August 2018

Pilot Team

- **StarMetro and City of Tallahassee staff**
- **FDOT Project Manager**
  - Kyle O. Masters, Transportation Planner, FDOT Transit Office
- **Project Team**
  - Sara Hendricks, PI, Senior Research Associate, CUTR/USF
  - Sean Barbeau, Ph.D., Co-PI, Principal Mobile Software Architect for R&D, CUTR/USF
  - Ann Joslin, Senior Research Associate, CUTR/USF
  - Zachary Browne and Ekaterina Kuznetsova, Token Transit
  - Kelly Robertson and Ariel Greenstein, BowStern
  - Candace Brakewood, Ph.D., University of Tennessee – Knoxville
Background – Phase 1

- Industry Scan of Mobile Fare Technology (March 2016)
- Summary of Features by Different Vendors
- Case Examples: Lessons Learned
- Concept of Operations

Final Report March 2016
http://bit.ly/FDOT-Mobile-Fare

Why Transit Agencies are Interested in Mobile Fare Payment Apps

- Provides additional fare payment option
- Leverages growing use of smartphones
- Appeals to a wider market
- “Bundling of purchases”
- Data collection
- Reduce cost of fare collection
- Increase operational efficiency
Phase II Objectives/Tasks

Objectives:
- Test Token Transit for Android and iOS devices at StarMetro
- Evaluate functionality
- Document capabilities of the mobile app to interact with other systems

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<td>November – March, 2018</td>
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Planning: February – June 2017

- Token Transit app configuration for StarMetro
- Marketing Plan Development
- Evaluation Plan Development
  - Test Operational Efficiencies
    - Decrease bus boarding time
    - Reduce cash handling
  - Gauge Customer Satisfaction
    - Achieve bus rider participation
    - Collect feedback
Beta Testing: July – August 2017

…resulted in improvements to:

Focus Groups
Invited StarMetro customers

… and led to a review of StarMetro policy and the development of customer service guidance

Preparations for Public Testing: Developing a Pre-Test Bus Rider Survey

“Please read this before continuing. You are being asked to volunteer in a study…”

How many bus trips did you take…?

How do you usually pay for your bus trips…?

What type of smartphone do you use?

What StarMetro bus route do you ride most often?

What type of StarMetro fare do you usually purchase?
“Test Our E-Pass”
StarMetro Pilot Marketing Campaign
Kelly Robertson, APR

BowStern Background

• Integrated marketing firm

• Headquartered in Florida

• Inc. 5000 Fastest Growing Companies
StarMetro Pilot Marketing

Primary Campaign Goals

1. Establish customer awareness of mobile fare payment app for Android & iOS devices.
2. Promote customer participation in exclusive pilot testing program (Goal: 200 qualified participant sign-ups).

Marketing Strategy Rollout for Pilot
“Test Our E-Pass” Campaign Tactics

- Website Landing Page
- Social Media Advertising
- Email Marketing
- Bus Signage – Posters & Hangtags
- Community Outreach – Local Business Incentives

Web Traffic and Survey Sign-Ups

- Total Responses: 559
- Total Completions: 471
- Web Sessions: 2,379

Surpassed original objective by +57%
Social Media Advertising

6,905
Reach
1,315
Web Clicks
1,454
Post Engagement

Email Marketing

The Response
Open Rate 15%
123 opens
Click Rate 28%
35 unique clicks
Total Distribution Number 820 emails sent
784 emails delivered

Opens By Device
Mobile 40%
Desktop 60%
Bus Signage

- MOBILE BUS E-PASS
- YEAH IT'S A REAL THING
- Signs up at StarMetroPass.com

**Community Outreach**

- Krispy Kreme: 175 Free Donut Cards
- Jimmy Johns: 25 Free Sub Cards
- Starbucks: 1 Starbucks mug
- Red Elephant: $20 Fun Bucks
- Sakura: $30 Gift Card

**Total Prizes: 203**
Elements of the Evaluation

- Customer and bus operator inquiries
- Bus rider and operator surveys
- Staff debriefing at the end of the pilot
- Survey of capabilities of mobile app to interact with other systems
- StarMetro’s dashboard of Token Transit pass sales

Total Bus Passes Validated using Token Transit

<table>
<thead>
<tr>
<th>Month</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 2017</td>
<td>2,895</td>
</tr>
<tr>
<td>October</td>
<td>4,719</td>
</tr>
<tr>
<td>November</td>
<td>4,088</td>
</tr>
<tr>
<td>December</td>
<td>3,205</td>
</tr>
<tr>
<td>January 2018</td>
<td>4,175</td>
</tr>
<tr>
<td>February</td>
<td>3,615</td>
</tr>
<tr>
<td>March</td>
<td>3,924</td>
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</tbody>
</table>
Bus Rider Pre- and Post-Test Survey

PRE-TEST SURVEY
- Participation qualifying questions
- Initial method of fare payment
- Baseline travel behavior
- Demographic characteristics
- Open-ended questions

POST-TEST SURVEY
- Level of Satisfaction with Token Transit
- Method of fare payment
- Travel behavior
- Any changes in status that might affect travel behavior or method of fare payment
- Open-ended questions

Customer Participant Demographics

Pre-Test Survey Q15: “How old are you?” (N=373)
Customer Satisfaction

Percentage of survey respondents…

…who indicated that by using the Token Transit app…

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Response Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;75</td>
<td>They were very satisfied</td>
</tr>
<tr>
<td>69</td>
<td>They perceived using less bills and coins to purchase bus passes</td>
</tr>
<tr>
<td>&gt;89</td>
<td>It was easier to purchase a bus pass</td>
</tr>
<tr>
<td>&gt;64</td>
<td>It took less time to board the bus</td>
</tr>
<tr>
<td>20</td>
<td>It took more time to board the bus</td>
</tr>
<tr>
<td>13</td>
<td>They experienced issues activating a bus pass when boarding a bus</td>
</tr>
</tbody>
</table>

Customer Satisfaction with Using Mobile Fare Payment

Level of Rider Satisfaction

Percentage of Participants

Very Satisfied | Somewhat Satisfied | Neutral | Somewhat Dissatisfied | Very dissatisfied | Not Sure

0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80
Perceived Benefits of Mobile Bus Passes

- Less time spent waiting in queues at ticket vending machines.
- Increased access to different fare types.
- Better ability to obtain a refund if a ticket is lost or stolen.
- Not having to worry about having exact change, fare cards, fumbling for coins upon entering the bus, and keeping track of transfer slips.
- Avoiding pass validation problems: “Showing a picture is much easier than getting the card to perfectly align with a target.”
- “No one could talk me into letting them use my pass. Because it is on my phone.”

Utilization of the mobile bus passes

Post-Test Survey Q5: "How often do you typically ACTIVATE a bus pass (such as before boarding the bus) using the Token Transit app?“ (N=94)

- > 5x/wk: 23%
- 4 or 5x/wk: 22%
- 2 or 3x/wk: 10%
- About 1x/wk: 12%
- About 1x/month: 29%
- < 1x/month: 2%
- I’m not sure: 2%
Strong desire for single app to access multiple services

“How important is it to you that you can use a SINGLE APP to pay for your bus fare, plan your bus trips, and get real-time bus arrival information?”

- Very important: 15%
- Somewhat important: 77%
- Neutral: 8%
- Somewhat unimportant: 0%

Bus Operator Survey Results

- Almost 80% of bus operators indicated they were either somewhat satisfied or very satisfied with the app.
- Over 93% of bus operators indicated it was either somewhat easier or much easier to collect bus fares using Token Transit.
- 75% indicated it took either somewhat less or much less time for passengers to board the bus.
Bus Operator Survey Results

- Over 37% of bus operators indicated they had experienced issues with a passenger who did not have cell service or reception.
- Over 25% indicated having some difficulty seeing the customer smartphone screen.
- Some customers had difficulty activating their bus passes.
- “Color of the day” was randomly determined, and needed a change to the app to prevent the same color on two consecutive days.

Bus Operator Comments

- There was “…less bill and coin jam in the farebox.”
- Confidence of “knowing the fare is there.”
- Use of Token Transit by passengers resulted in “getting them away from my fare box so I can move on.”
- Two operators indicated that Token Transit made the boarding process “less aggravating” and “…it helped make the day go smoother.”
- “I prefer this method.”
- “Make it available to all passengers.”
Findings about Token Transit

- Off-the-shelf product might be ideal for smaller transit agencies.
- Transit agency foregoes some percent of revenue and its own branding in app store.
- But when vendor rolls out an update or new feature, it is immediately available for all participating agencies.
- Can control or change word, image, and color of the day.

Findings about Token Transit

- Transit agency can download raw data.
- Dashboard provides access to daily aggregated updated rider analytics.
- Dashboard provides daily individual sales data.
- Capability to issue refunds by accessing individual rider accounts or refund is executed by Token Transit directly.
Findings about Token Transit

- Transit agency can make changes to fare structure as displayed in the app.
- Provides daily revenue transfer data, or at intervals preferred by transit agency.
- Provides monthly finance report.
- Designed to allow transit agencies to offer joint passes and inter-agency transfers.

Challenges of using Token Transit

- Slow to activate purchased mobile pass online
- Users want to activate Token Transit passes offline
  - But this is less secure
- Fear of dead phone battery or losing phone, then having to buy passes
- Apple Pay, Android Pay, Touch ID not enabled
- Desire for more information about app security and protection of credit card information
- Over 90% of bus riders either “somewhat or strongly prefer” a single or primary app to access transit information
  - Real-time information, trip planning, bikeshare, etc.
No Integration
Riders dislike switching between multiple apps

No integration

Partial Integration
Deep links allow riders to use a main app to link out to other apps as needed.

Partial integration (via deep links and APIs)
Full Integration
Provides all features in one app

Customer Difficulties with Wi-Fi
- Ease of bus pass purchase using a mobile app depends on customer’s smartphone capabilities
- Offline pass activation is possible with other apps but allows potential bypass of security mechanisms that prevent fraud
- Lower income riders without unlimited data plans are more affected by Wi-Fi connection difficulties
Recommendations for Transit Agencies

- Remove “captive portal” from Wi-Fi access points OR implement a system where user agrees to Terms of Service once, and future connections from that device would immediately be directed to the Internet
- Name Wi-Fi hotspots on buses differently from those at bus stations
- Provide phone charging ports at key bus stations

Recommendations for Transit Agencies

- Plan for integration of a mobile fare payment app with other functions/apps
- In RFPs, require responding vendors to include APIs and deep links and/or SDKs in their solutions to support future flexibility for integration solutions
- Have vendor highlight their information about security of payment and personal data
- Have vendor allow additional payment methods (ApplePay, Android Pay, PayPal)
Recommendations for Transit Agencies

- Conduct an initial system-wide pilot as part of a commitment for a future permanent deployment
- Support introduction of mobile fare payment app with marketing to raise awareness, provide encouragement and information
- Provide ongoing refresher training to bus operators how to visually validate the mobile passes
- Provide the option to purchase Dial-A-Ride on the mobile app

Final Report Now Available

Report Link

Appendices
Thank you

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