A Framework for a Mobile Payment Pilot Implementation

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Acknowledgement

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Coming up:

- What is Mobile Ticketing? Why now?
- Industry Scan of Mobile Fare Technology
- Case Examples: Lessons Learned from interviews with 5 agencies
- A Framework for a Mobile Payment Pilot Implementation
  - Concept of Operations
    - Customer-facing Mobile Ticketing Application
    - Additional Features of Mobile Ticketing App
    - Fare Inspector Application
    - Reporting and Backend System
    - Financial Processing
  - Estimated Project Timeline
  - Roles and Responsibilities

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Mobile Fare Payments (1 of 2)

- Visually verified electronic "ticket" on phone
- Machine-readable two-dimensional Quick Response (QR) Code
- Both # 1 and #2

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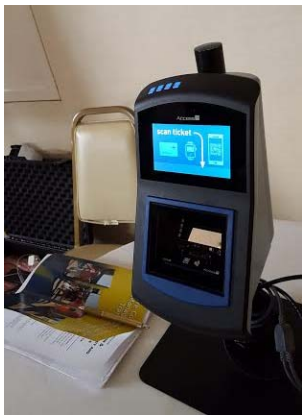
Mobile Fare Payments (2 of 2)

Near Field Communication (NFC) – contactless, tap and go



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Photos taken by Nevine at an Access-IS Demo at the 2016 APTA Fare Conference

Why Mobile Fare Technology?

"Technologies in fare systems have far exceeded our current system. We want to make sure we are entering into a system that will allow us the maximum flexibility in fare collection and provide convenience to our patrons." *

*Respondent to a fare collection survey of Florida transit agencies

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Industry Scan of Mobile Fare Technology (1 of 3)

- Bytemark, New York, NY
  - New York Waterway (NYPP app);
  - Capital Metro in Austin, Texas (CapMetro app);
  - Northern Indiana and Chicago (South Shore Line);
  - Massachusetts DOT (BusPLus+); and
  - Toronto, Ontario (TTCconnect).
- CooCoo, New York, NY
  - Capital District Transportation Authority in Albany (iRide);
  - North County Transit Service in San Diego (mTicket)
  - Metropolitan Transportation Authority, New York, Metro-North Commuter Railroad

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Industry Scan of Mobile Fare Technology (2 of 3)

- GlobeSherpa, Portland, OR
  - TriMet in Portland (TriMet Tickets);
  - Virginia Railway Express (VRE Mobile);
  - Los Angeles DOT (LA Mobile);
  - Planned with SFMTA;
  - CTA Ventra App in Chicago
  - Dallas Area Rapid Transit (DART) with Fort Worth (The T) and Denton County Transportation Authority (GoPass)
  - Metropolitan Transit Authority of Harris County, Texas

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Industry Scan of Mobile Fare Technology (3 of 3)

- Passport , Charlotte, NC
  - Columbia, SC Comet Bus (Catch the Comet)
  - Jacksonville Transportation Authority (MyJTA), FL
- Masabi, London, UK (US HQ in NY, NY)
  - Boston's MBTA (mTicket);
  - San Diego's MTS and CrossCountry Trains (mTicket);
  - NICE Bus on Long Island (go Mobile);
  - Under contract with New York's MTA for Metro-North and Long Island Railroad
- Xerox, Norwalk, CT
  - NJ TRANSIT (MyTix)
  - SunRail in Central Florida

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Case Examples: Interviews

- DART (Unwire)* : Lawrence Sutton, PMP (previously DART's Mobile Fare PM),PM – Technology Services, Transit and Rail, CH2M
- NICE (Masabi): Omar Alvarado, Senior Planning Analyst
- COMET (Passport): Samuel Scheib, Transit planner and manager
- CTA (GlobeSherpa): Michael Gwinn, Director, Revenue and Fare Systems
- NJ Transit (Xerox): Frank Gorman, Manager, Point of Sale & Fare Collection Systems

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* New Contract with GlobeSherpa

Lessons Learned from Case Examples (1 of 3)

- Significant planning and technical expertise is necessary – use lessons learned
- Build redundancy in back office functions /servers in case of interruptions in communications
- Carefully evaluate the desired data (e.g. utilization by route and stop) and reporting needs when defining technology - should be factored into procurement

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Lessons Learned from Case Examples (2 of 3)

- Mobile ticketing requires extensive marketing activities to be successful
- Agencies should build customer outreach activities into their planning activities and deployment budgets
- Engage all levels of transit agency employees in the planning process in preparation for deployment.
- Employees involved in beta testing have valuable insight.

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Lessons Learned from Case Examples (3 of 3)

- Have a good dashboard system to track sales trends and system performance
- Beta Test - represent a good cross section of transit service area demographics of users of the specific modes where mobile payments can be used, also solicit input during and after pilot

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A Point to Ponder . . .

- Agencies see visual validation / QR Code scanning as a low barrier to entry for mobile ticketing where the integration needs are not as intense, and therefore cheaper/quicker to implement. Examples:
  - The Comet and NICE, 6 months from concept to deployment

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Concept of Operations & More

- Concept of operations
  - Customer-facing Mobile Ticketing Application
  - Additional Features of Mobile Ticketing App
  - Fare Inspector Application
  - Reporting and Backend System
  - Financial Processing
- Estimated Project Timeline
- Roles and Responsibilities

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Customer-facing Mobile Ticketing App (1 of 7)

- Will allow customers to download and install a mobile application (mobile "app") on their smartphone
- Create an account through a one-time setup process that prompts users for billing information (e.g., credit cards, debit cards or other electronic payment)
- Be able to login using an ID and password and be greeted with the home screen of the mobile app

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Customer-facing Mobile Ticketing App (2 of 7)

- On the home screen, the user will
  - see the name of the transit agency,
  - be directed to a page that allows them to purchase fare products,
  - be able to purchase multiple fare products at once, and
  - maintain multiple fare products attached to their account and accessible for use within the mobile app

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Customer-facing Mobile Ticketing App (3 of 7)

- At the time of travel, customers will launch the mobile app, select the fare product they wish to use, and then activate the ticket
  - Activation of the ticket should be able to occur in an offline mode (i.e., Internet/network access is not necessary to activate the ticket).

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Customer-facing Mobile Ticketing App (4 of 7)

- After activation, the mobile ticket will provide a visual indicator to show to the driver for a set period of time for which the ticket is valid

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Customer-facing Mobile Ticketing App (5 of 7)

- An activated mobile ticket presented in two configurations: a) a visually validated ticket and b) a barcode / QR code.
  - The visually validated ticket will have an interface that enables drivers to easily identify a valid ticket, AND should include anti-tampering features that would prevent users from fraudulently using images or videos of invalid tickets as a valid proof-of-payment.
  - The barcode / QR code ticket can be validated by having the fare inspector scan it using a "fare inspector mobile application".

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Customer-facing Mobile Ticketing App (6 of 7)

- All mobile tickets will include a high security image with anti-tampering features, a barcode / QR Code, transit agency logo, validity period, and the fare type.
- After a set period, the activated mobile ticket will expire and will no longer be available
  - Expired tickets should be easily visually distinguishable from valid tickets.
  - The customer will be able to view a history of purchased and expired mobile tickets.

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Customer-facing Mobile Ticketing App (7 of 7)

- At any time during the use of the mobile app, the customer can access a "help" page with frequently asked questions (FAQs) about mobile ticketing.

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Additional Features of App

- Trip planning functionality using transit schedule information;
- Real-time vehicle tracking and estimated vehicle arrival information;
- Ability to access ridehailing services (such as Uber or Lyft);
- Security reporting, such as "see something, say something" functionality to report suspicious behavior; and/or
- General feedback / non-emergency issue reporting (e.g., for broken benches or bus drivers compliments and/or complaints).

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Fare Inspector App (validator)

App will automatically report to a backend system the following information about validated tickets:

- Date and time of validation;
- Date and time of ticket purchase;
- Date and time of ticket activation;
- Location;
- Inspector ID number;
- Fare type; and
- Customer account ID number.

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Reporting and Backend System

The developer will provide a web-based tool for use by transit agency staff including:

- Access to records of all customer transactions using mobile ticketing, including all ticket purchases, validation, and activation, as well as the ability to export these records to a machine-readable data format such as Comma-Separated Values (CSV) files that could be viewed and analyzed in another application (e.g., Microsoft Excel);
- Electronic reports summarizing daily, weekly, and monthly sales
- A mechanism for reimbursing customer mobile tickets; and
- A mechanism for receiving questions and comments from customers (i.e., "Contact Us").

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Financial Processing

The mobile ticketing system will have the following financial functionality:

- The system will accept MasterCard, Visa, debit cards and PayPal payments;
- The developer will be responsible for all back office functions;
- The developer will comply with the latest Payment Card Industry (PCI) data security standards, including all audit and compliance certification activities; and
- The developer will deposit fare revenues (minus applicable fees and taxes) into the transit agency bank account on a regular basis (with the specific dates / frequency to be agreed upon).

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Estimated Timeline for Visual Validation

1. Preparation of solicitation documents
   - (1-3 Months)
2. Vendor selection and award process
   - (2-3 Months)
3. Design and development of software by vendor
   - (3-6 Months)
4. Pilot program phase 1: internal beta test
   - (3-6 Months)
5. Pilot program phase 2: public facing beta test
   - (3-6 Months)

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Roles and Responsibilities

Transit agency staff would be responsible for these roles (provided that the agency has sufficient internal expertise for the given roles):

- Managing the pilot program
- Training drivers to understand how to identify active mobile tickets and answer customer questions
- Updating internal accounting and reporting procedures to include mobile ticketing transactions
- Marketing to educate riders and the public about the availability of mobile ticketing
- Information technology integration (if required)

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Q&A

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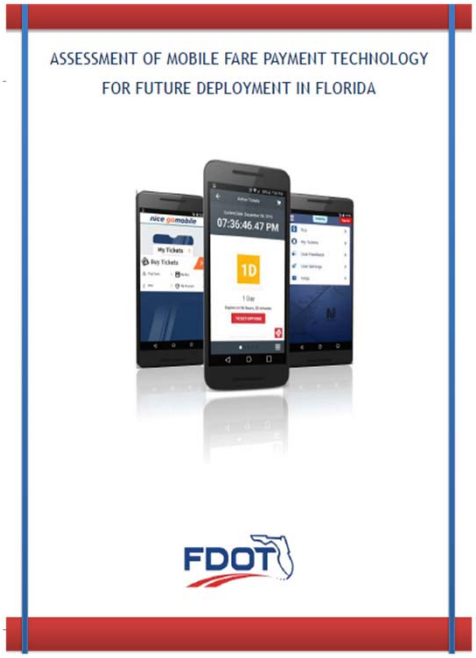
Final report



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