Mobile Payment Trials in Public Transport

Building on Contactless Programs and APTA Standards

March 16, 2009
Mobile Phones offer the potential to serve in many fare system roles:

- An internet access device
- A portable point of sale device
- A self service kiosk
- A customer service response node
- A personalized mail box
- A delivery channel for promotional messaging
- A fare payment device
Getting Traction with Mobile

- The immediate focus could start with customer service strategies leveraging immediately available technologies and infrastructure.
- There are many things to “borrow” from mobile commerce models being followed in other segments.
- There is no reason to wait for NFC.
- A properly crafted mobile solution has a sound basis on its own and is only enhanced by the addition of NFC.
- Technologies such as stickers and memory cards may act as a bridge between mobile service and payment while the NFC ecosystem and related standards work through their stages of development.
Web Based Customer Service

- Purchase a new card
- Reload an existing card
- Review account information
- Change payment options.
- Review balance and passes
- Register card
- Set up threshold autoload (automatic reload)
- View transaction and purchase history
- Link other cards to this account

http://www.pathsmartlinkcard.com/
Benefits will be achieved through

- Lower cost of customer service provision due to fewer calls and automated response mechanisms
- More immediate response to customer service inquiries
- Proactive delivery of information driving down customer queries and improving customer satisfaction
- Lower cost of fare media and distribution costs as “virtual smart cards” are carried on phones
- The ability to support multiple payment mechanisms and drive payment behavior through systems and promotional strategies
- The ability to generate new revenue streams through promotional partnerships
## People are Receptive to Mobile Payments

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>57%</td>
<td>Are interested in having mobile payments</td>
</tr>
<tr>
<td>90%</td>
<td>Of those interested; would pay more for a mobile phone with payment capabilities</td>
</tr>
<tr>
<td>64%</td>
<td>Ages 18-42 would switch carriers for phone with payment</td>
</tr>
<tr>
<td>58%</td>
<td>Ages 18-42 would switch banks for mobile phone with payment</td>
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<tr>
<td>5 to 1</td>
<td>Prefer payments to appear on Bank or card statement vs. mobile phone bill</td>
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</tbody>
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Source: Presentation by Pam Zuercher, VP – Product Innovation, VISA USA at Mobile Commerce Summit, Las Vegas, NV, June, 2007
A Good Demographic Fit

Age of Transit Passengers

14 and under, 4.0%
15 to 19, 8.5%
20 to 24, 11.5%
25 to 34, 21.7%
35 to 44, 20.2%
45 to 54, 17.5%
55 to 64, 9.8%
65 and over, 6.7%

Source: American Public Transportation Association (APTA), Profile of Public Transportation Passengers, 2007
BART NFC Pilot

Objectives

- Demonstrate that the BART EZ Rider Transit Application can be provisioned Over the Air (OTA)
- Demonstrate that value loads (Top Up) of the transit e-purse can be successfully initiated OTA from Sprint
- Demonstrate that an NFC enabled phone can be used for fare payment at BART faregates
- Demonstrate the use of a third party payment processor for processing credit card payments and remittance of funds to BART from Sprint managed Top-Ups
BART Pilot Scope

- Four month pilot involving 230 participants
- 9000 trips and 800 top ups
- Trialed Sprint NFC phones enabled with a BART transit application and Jack in the Box pre-paid application
- Phones were demonstrated to be interoperable across 500 Cubic Tri-Reader enabled faregates and VivoTech contactless payment readers
- Transit application file based on Regional Ticketing Application format as used in Los Angeles, San Diego, MARTA, Minneapolis
- First Data provided the pre-paid application and credit card processing services
- VivoTech provided the OTA provisioning system and e-wallet software
- Transit applications were topped up via auto-loads billed to the credit cards
- More than 80% found the application easy to use
1. Tap your phone on “Find Your Burger” NFC Poster at a BART Station in San Francisco

2. Get directions to the nearest Jack in the Box on your phone screen

3. Wave your phone on the faregate to ride the BART to your favorite Jack in the Box location

4. Pay for your meal with your Jack CA$H prepaid card on ViVOpay readers

German Trials: Hanau

- Program launched in 2006
- 220 buses in the Rhein-Main region
- Hanau about 20 miles east of Frankfurt
- Phones pre-loaded with ticketing application
- NFC interface used to validate products via on board validators
- Post paid billing system
Mobile Ticketing in Frankfurt
RMV2go – An application based on NFC

1: Contac module activates java application and loads origin
2: Patron selects destination
3: Patron purchases ticket OTA
4: Ticket is visually inspected or validated via bar code
Mobile Ticketing in Germany
RMV2go, Phase II, UICC/NFC, 8/8

NFC / ISO14443

Mobile Ticketing Application

UICC SIM-Card KA Ticketing Application

NFC Module

Inspection Device

SAM

GPRS or UMTS

Ticket request

Mobile Ticket System

KA over-the-air Sales System

SAM

Ticket issuing

Card Application Installation

Trusted Service Manager

Background System

See notes.
Mobile Ticketing in Germany
Focus RMV

- Airport
- LBS
- Navigation
- Hotel
- Airlines
- Flight IA 7890
- Car Rental
- Just-in-time Couponing
- Stadium
- Concert
- Fair
- Tourism
- RMV

Mobile Informing Booking Payment

Confidential & Proprietary 14
Transport for London and O2

- Transys, a private sector consortium, currently operates the Oyster Card system on behalf of TfL

- There are over 20,000 devices across London Underground and Bus lines that accept the Oyster card

- More than 6 million cards are used on a daily basis

- An on card application supports stored value, regional travel card, daily capping, and auto-top up features

- TfL and Transys collaborated with O2, VISA, and Barclays Bank to run an NFC pilot from December of ’07 through May of ’08
Transport for London and O2

- The trial included 500 participants carrying Nokia NFC handsets
- The phones were pre-loaded with the Oyster ticketing application
- Phones also carried Barclay’s VISA PayWave capability
- The ticketing application enabled phone usage throughout the Oyster network with no infrastructure changes
- All Oyster fare products and customer service features were available to phone users
- Re-value available at TVM’s, TOM’s, and PASS Agents
Pilot Findings

- More than 90% of trialists found the product to meet or exceed their expectations

- Almost 2/3 of trialists were highly likely to take up Oyster on their mobile phones

- More than half reported the Oyster feature would highly influence their choice in mobile phone

- Oyster usage for those carrying phones increased as trialists reported a lower propensity for “forgetting their Oyster card”

- Customers reported a desire for a single customer support line
O2 Trial Summary

○ More than 1/3 indicated that a loyalty scheme would improve take up and desirability

○ Response to the open payment application was less positive but this was thought to be influenced by the less ubiquitous presence of contactless merchant locations

○ Marketing firm (GfK) reaction: “few things have ever tested this positive”

○ Transit seen as having “Mass Market Appeal” as an application for NFC

○ Contactless payment would provide more targeted appeal as layered on to the program