

Sprint – BART Transport Trial Overview

Hans Reisgies
Director, NFC Business Development



about ViVOtech

Enabling 3rd Generation Payment Technology

- ✓ Market Leading Contactless Readers for Point of Sale
- ✓ NFC Software Solutions for All Ecosystem Participants
- ✓ Transaction Software: Prepaid/Gift, Smart Posters, eCoupons



Serving Customers Worldwide

- ✓ Over 120 Employees Worldwide

Headquarters: Silicon Valley

Design Centers: Silicon Valley, New Delhi

Support Centers: London, Singapore,
Tokyo, Frankfurt



Experienced Team with Strong Backing

- ✓ **VC's:** Draper Fischer Jurvetson, Alloy Ventures
- ✓ **Key Investors:** Nokia, Motorola, First Data, NCR, Citibar



Best Vendor
Partner Award

Top Contactless
Technology Provider
2007

Aberdeen Group

2005

FROST & SULLIVAN

Electronic Payment
Enabling Technology of the Year Award



Sprint-BART Trial Overview

Sprint, BART, Jack-In-the-Box Trial Objectives

- Integrate with Existing Commercial Systems
- Multiple Issuers/Segments Possible?
- User Management via Phone Only?
- Top-Up of ePurse and Online Cards Possible via Phone?



Scope of Trial

- Launch January 2008 thru May 2008
- Any Existing Sprint and BART EZ-Rider Invited
- 250 Consumers Switched Their Primary Phone to NFC Phone



Supporting Partners

- ViVOtech: NFC Software Technology Provider
- Samsung: NFC Phone Providers
- First Data Corporation: JIB Card Issuance and Top-Up Processing
- SpeedPay: BART Top-Up Transaction Processing



Highlights of Sprint-BART Trial

• Bay Area Rapid Transit (BART)

- BART System based on MiFare card (ePurse style)
- Reuse of Existing BART Readers in Fare Gate System
- Users Register for Auto-Top Up via Phone UI

Jack-In-the-Box

- Jack-in-the-Box Stored Value Card based on MiFare (Online style)
- Jack-in-the-Box readers deployed by Card Associations
- Users Register for Top-Up on Demand on Website

Samsung a920 CDMA Phone

- NFC is not just for GSM world
- No SIM, No Problem with Embedded NXP SmartMX Secure Chip
- Single Wallet, Multiple Applications from Different Issuers
- User Initiates the Download of Cards from the phone (not the web)

And...



Latest Trial: Sprint/BART/JIB Trial

Full OTA Provisioning or Transit and Merchant Cards

1. Tap your phone on "Find Your Burger" NFC Poster at the Powell BART Station in San Francisco



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



One of my places isn't far from this BART stop at the POWELL ST. STATION

To get to the nearest Jack in the Box at 808 Mission St.

1. Head northeast on Market St. toward Stockton St.
2. Turn Right at 4th St.
3. Turn Right at Mission St.



3. Pay for your meal with your Jack CASH prepaid card on ViVOpay readers



Click the link below to view coverage from local TV stations:

<http://www.vmsdigital.com/MyFiles.aspx?Onum=3922B685-F72E-4AE5-8707-C8F22E7F333F>
<http://cbs5.com/video/?id=30620@kpix.dayport.com>

ViVOtech 'Firsts' in Piloting NFC Globally

ViVOtech[®] NFC Pilots

First Australian NFC Mobile Phone Payment Pilot - December, 2008



NFC payment pilot in Australia

First-in-the-Nation NFC Mobile Payment Trial for Transit & Food - January, 2008



NFC payment pilot in Singapore

First NFC Wallet Solution with Biometric Control - June, 2007



NFC payment pilot in the United States

First e-Purse NFC Mobile Phone Solution with Top-Up using Branded Cards - Sept, 2007



NFC payment pilot in Singapore

First OTA Solution to Support Both Credit and Debit - January, 2007



NFC payment pilot in the United States

First OTA Solution to Support Both Coupons and Payments - February, 2007



NFC payment pilot in Taiwan

Only Supplier in Both Visa Wave and MSD NFC Pilots



Flyby NFC phone payment pilot in Atlanta



Visa[®] Wave pilot in Malaysia

Participating in Most NFC Payment Trials to Date



Launched in the United States, Dec., 2006



Launched in Amsterdam, Oct., 2006

Commercialization Will Drive Huge Rewards ...But Will Not Come Easily

Four Commercialization Threshold Factors:

- 1. Mass deployment of Contactless Card Infrastructure**
 - Issuance and Acceptance
 - Payments and/or Transportation
- 2. The merger of ecosystems with unrelated expertise**
- 3. A collaborative business model based on compelling applications**
- 4. Deployment and integration of the right technology architecture**

Danke!

Hans Reisgies
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**Top Contactless
Technology Provider
2007**

Aberdeen *Group*



**Ranked #1 Contactless
Reader Vendor
2007**

ABIresearch®



ETA
TECHNOLOGY
INNOVATION
AWARD
2005



TW Transaction
World
Magazine
**2005
MOVERS & SHAKERS
AWARDS**



Illustration of A Service That Will drive the Business Model – Smart Poster

2. Consumer and Tag ID info sent to Back-End

1. Customer Taps NFC Smart Poster at Retailer

Generic Promotion Poster



Tag I.D.

Consumer I.D.

vivoplatform
Control Server

Mobile Marketing,
eCoupon, Offers



vivoplatform
Issuing Server

3. Marketing server issues personalized promotions to phone based on location, interest and personal profile.



Customer #1

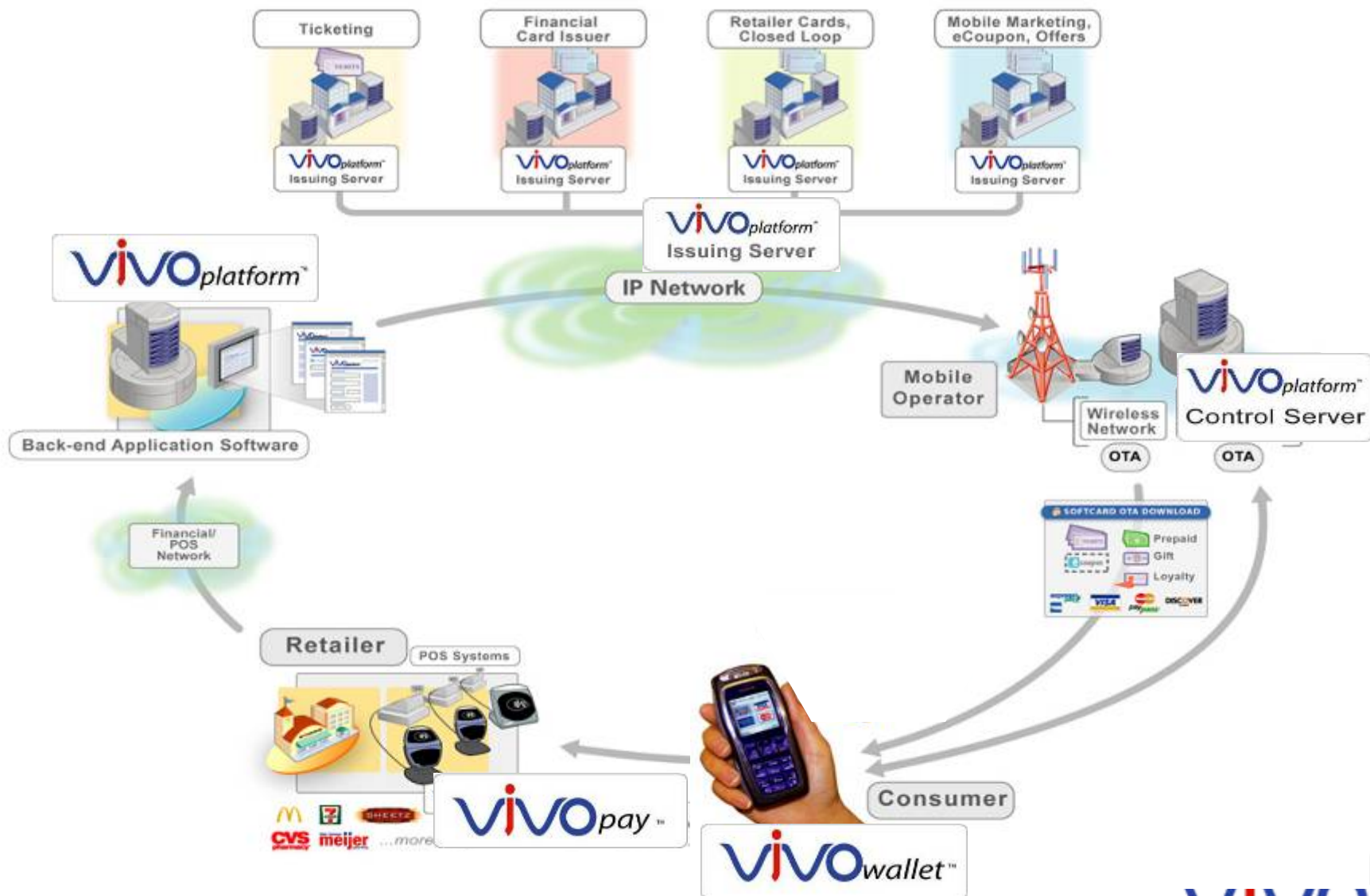


Customer #2



Review all promotions

Solutions That Enable 3rd Generation Payment & Marketing Ecosystems



Embedded Chip vs. UICC vs. Both?

Recent ETSI Vote:

- Allows for all secure storage options
- Defines Standard HCI without Proprietary OEM Commands

Best UICC SIM + NFC Phone with:

- New ETSI HCI (*pending approval from NFC Forum*)
- MasterCard/Visa Certification
- MiFare (*licensing from NXP/Infineon*)
- MISD with Adjustable Memory Size (*GP 2.2, A/B/C/D*)
- Expected commercial availability: **Q3-2009**

Choose OTA Solution that Supports All Storage Options

- Embedded Chip: **Fall 2008** (*Launch Transit, Bus, Payment, Coupon*)
- Hybrid: **Spring 2009** (*HCI/SWP Phones will be ready before SIMs*)
- UICC: **Fall 2009** (*Full Support with Pricing Leverage*)