Approach for an Integrated Smart Ticketing & Common Mobility Card Solution

Date: 26 July 2017

Delhi Integrated Multi-modal Transit System Limited
Joint Venture of Govt. of NCT of Delhi and IDFC Foundation
An ISO 9001, 14001, OHSAS 18001, ISO 27001 & CMMI L3 Certified Company
Quick Update

- **Delhi**: DMRC Card getting extended to Delhi bus operations (integration testing complete)

- **Delhi**: Mobile ticketing for Delhi Cluster Bus Operations (proposal underway)

- **Nagpur**: Integration with SBI system for Open loop cards based on NCMC specifications initiated. Expected to be rolled out this fiscal.

- **Gurgaon**: Discussions underway to implement option of cashless fare collection from day 1 of operations (Operations are expected to start by year end).
About DIMTS experience in AFCS

End to End Solutions for Land Based Transportation
Plan-Design-Supply-Install-Test-Commission-Operate

### Advisory Services
- Policy Advisory
- Feasibility Analysis
- Project Structuring
- PPP Advisory
- Bid Documentation
- Bid Process Management

### Transport Planning
- Comprehensive Mobility Planning
- Urban Mass Transit Corridor Planning and Design
- Traffic Simulation
- Route Rationalization
- Planning of pedestrian and NMV Infrastructure
- Parking

### Engineering
- Design
- Project Management
- Independent Engineering Services
- Road
  - ISBTs
  - Depots
  - Bus Queue Shelters
- Railways
  - Alignment and Track design
  - Railway Siding
  - Signaling

### Transport Technologies
- Vehicle Tracking, PIS, PAS
- Electronic Ticketing & Automatic Fare Collection System
- Electronic Toll Collection
- Bus Fleet Management System
- Smart Phone applications
- Data Analytics
- E-Governance
- Intelligent Signaling

### Operations
- Bus Concession Management
- BRT Corridor Management
- Smart-card Issuance Management
- Parking Management
- Terminal/Depot Management

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MOU with NPCI
About Common Mobility Cards Specifications

• MOUD has come out with the **National Common Mobility Card specifications**

• The specifications were developed by NPCI, DMRC and NIC etc led by NPCI on behalf of MOUD

• All transit agencies, banks and OEM’s will be expected to follow these specifications going forward
Fare Collection across Maturity Curve

Level-0
- Fare Box Collection

Level-1
- Pre-Printed Ticketing

Level-2
- Electronic Ticketing

Level-3
- Smart Card Ticketing (Closed Loop)

Level-4
- Smart Card Ticketing (Semi Closed Loop)

Level-5
- Smart Card Ticketing (Open Loop)

Key step to Implementing Common Mobility Cards

ETM devices key features:
- NFC
- Bar Code Reader
- Real time connected
- EMV complaint
On Board Ticketing

CITY BUS TICKET
Date: 7/4/2013
Time: 11:25 PM
Ticket No.: 7392
Bus No.: 512
Route: RJT -- AHM
Full: 2 x 9 = 18
RS. 18.00

NFC
WiFi
Bluetooth

DIMTS
Off Board Ticketing

Ticket Media

Validation

NFC

High Speed: 200 times/sec; Precision: 5mil;
Key Implementation Considerations

- Awareness
- Economics
- Resistance
  - Resistance to monitoring
  - Tampering, theft
- Business process reengineering

- Risks to ROI
- R&D investment towards building low cost alternatives

- Adoption & sustenance
- Economics
- Integrated ticketing
- Intermodal settlements

- Resistance to monitoring
- Tampering, theft

- Business process reengineering

- Risks to ROI
- Gestation Period
- Implementation Challenges

PESTL Scenario
Key Challenges in Bus Environment

- Bus systems are open systems unlike metro and railways
- GPRS connectivity
- Conductor less buses are far away (ticketing after boarding)
- Time to issue – crush loads
- Complex pass and fare policies
- Highly subsidized fare value: Rs 5/10/15
- Banks have not been brought in (unlike by metros)
Time to market and universal ecosystem

- Operator 1
- Operator 2
- Operator n
- Ticketing Systems
- Universal AFCS Interface
- Acquiring Bank
- Acquiring Bank
- Acquiring Bank
- Central Clearing House
- Issuing Bank
- Issuing Bank
- Issuing Bank
- Universal Customer and Ticketing Interface
- Customer 1
- Customer 2
- Customer n

Banks

Wallet Companies
Why this solution? – Cost and Time to Market perspective

- **Banks**
  - The logistics and costs of card issuance is with the banks
  - Banks front end with customer and own the level 1 helpdesk
  - Banks may be asked to contribute against cost of acquiring customers to DOT
  - Helps bring down capex/opex significantly as well as creates potential for revenue

- **NPCI**
  - Leverage the NPCI framework for interbank settlement – Brings down the capex significantly

- **Regulators & Operators could leverage the Universal AFCS System**
  - Operators can hook on their existing or new Ticketing System and leverage a broader ecosystem – economies of scale
  - DIMTS is already working on an Integration Layer that could be used for this purpose
  - DIMTS has a MOU with NPCI to introduce common mobility cards in India
Key Recommendations (for CMC based integrated multi – model ticketing)

- Has to be in the interest of the commuter
- To be owned by regulators
- Allows for intermodal adoption
- Extendable to National Smart Mobility Card
- Leverages existing payments infrastructure
- Form factor agnostic model
  - NFC based Mobile Phones
  - Smart Cards
  - Wearable devices
- Bank & OEM agnostic
- Low entry costs – self sustainable solution
- Technical Feasibility and Economic Viability to support Low Fare, High Volume transactions
Easily extendable to other operators & integrated ticketing
Thank You!

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