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Open Banking Model for Fare Collection

CTST May 2008

ACS Transportation Solutions

Over Twenty-Five Years of Transit Fare Collection Experience

- Transit smart card and magnetic tickets
- 100 million Daily Transit Transactions
- 1,000 agencies



Built System to Support New York City PayPass Pilot

- Installation and maintenance of bank card readers
- Payment transaction processing and financial reconciliation & reporting
- Customer Service – Web and telephone support
- Account based central management system with fare calculations
- Transaction aggregation



Leading EZPass Service Platform

- 12 E-ZPass Systems
- 90% of daily E-ZPass transactions
- 6 million accounts – \$2.7 Billion ETC Transactions annually



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ACS and Standards

Calypso:

- Paris & Optile Network (Paris Suburbs)
- Marseille, Toulouse, Lyon
- Milan, Naples, Venice
- Mexico City, Montreal, New Jersey Demonstration

RIS/UTFS/CFMS:

- Supported Specification Development

Bankcard Standards:

- New York City Transit Contactless Subway Trial
- Toll Collection, Parking and other Bankcard Systems

Why do we want standards?

Independence from single vendor

- Cost savings to buyer from increased competition
- Facilitate use new technologies

Interoperability across systems/agencies

Economies of scale to seller

Focus Innovation

Quality improves with standards & certification

Bankcard Industry Standards

Contact/Contactless Card	ISO 7816/14443
Contactless Payment Specifications (Card & Reader)	PayPass, PayWave, Express Pay, Zip, etc.
Bankcard Originated Messages	Specific data requirements ISO 8583 – Other formats
Security	PCI
Certification Process	For All Specification Compliance

Bankcard Ecosystem-Estimated

Volumes

- 2.6 billion cards
- 21,000 banks
- \$6.8 Trillion Processed
- 60 Billion Transactions
- 170+ Countries
- 29 million acceptance locations

Environments

- On line & Off line terminals
- Face to face, Phone sales, Web sales
- Card present, card not present
- New card sizes Key fobs, NFC phones, etc.

All working together efficiently across the world for multiple brands

Typical Solution Approach

Stand alone Bus Card Reader

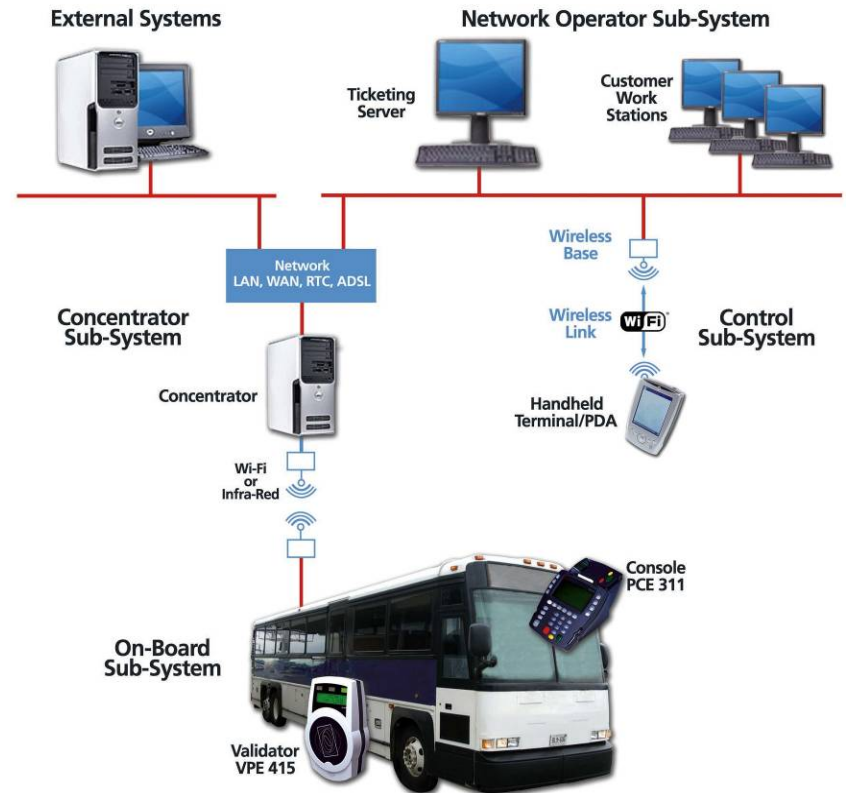
Processes transactions off-line, using application software that interfaces to card for needed data

Data Exchanged via WiFi

- Transaction data uploaded to Operator system
- Software downloads to Reader:
 - Updating hot lists, action lists
 - Software maintenance

Supports Sales Devices

- TVM,
- Retail and Central Office POS

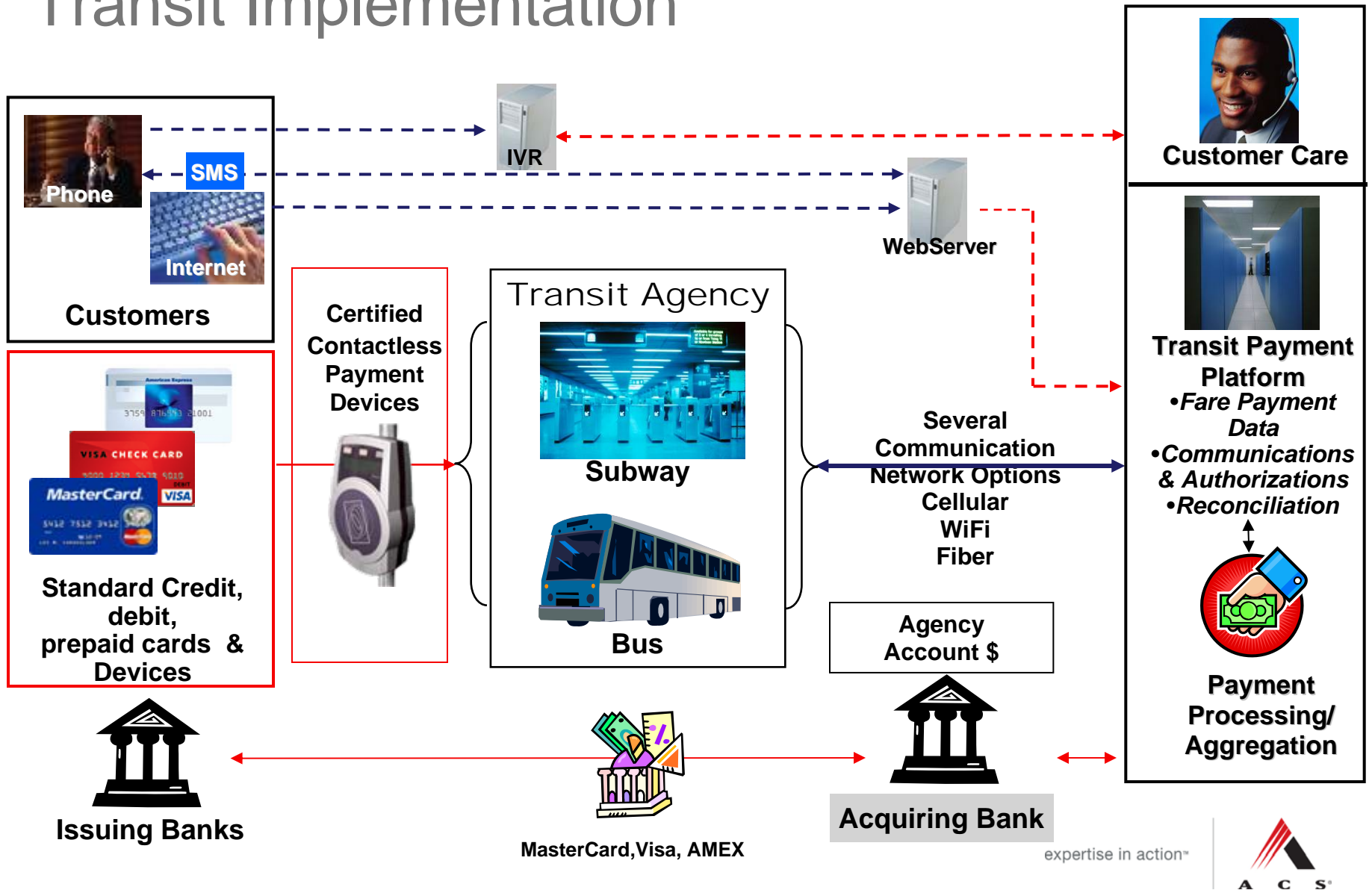


Typical Metro

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Bankcard Standards Based Transit Implementation



Account-Based Fare Collection Model

Cellular Network Approach can meet millisecond response requirement

No limitation on fare policy or transit products with back office system

- Much easier to change rules
- No action listing or downloads to devices

Aggregate transactions before submitting to payment network

- Different rules apply for MasterCard, Visa and Amex
- Lowers card acceptance costs

Customer Service has Live Data

- Web sites
- Call Center and IVR
- Mobile Devices

Several card options to cover gaps with bank issued contactless cards

Conclusions and Comments

Bankcard Standards are well supported and successful in many industries

Application to Transit can be done using an Account Based Model

Pilots in New York and Salt Lake are proving the value proposition

Bankcards have migrated to several industries after technical and commercial hurdles were overcome - Is it now Transit's turn?