

Electronic Fare Payment Systems

Market Snapshot- April 2010



Overview

- Most major fare systems now are either operating contactless systems or are in the process of procuring/installing them
- In the US, more than 15 contactless systems are operational
- The majority of these systems are currently card based with three using variants of CFMS
- 8 of these are regional with multiple operators on a common card
- There is significant movement on investigating/developing new technical and commercial models aimed at Transit-Financial Convergence

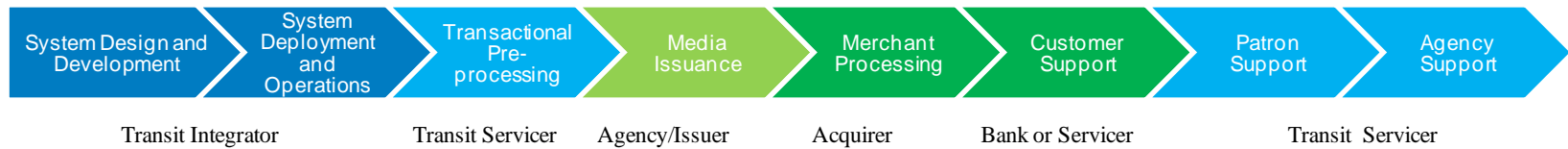
The Transit Challenge

- Many agencies are trying to “get out of the card business”
 - Acquiring/distributing cards
 - Processing transactions/managing networks
 - Providing patron facing customer service
- The objective is to lower operating costs and create new revenues
 - All things considered, how much of each fare dollar is spent on collection?
- They can't get out of the infrastructure/access control business
 - Operational inter-dependencies
 - Union constraints
- The systems/services solution must not compromise programs tailored to specific user groups (Elderly, Disabled, Students, etc.)
- The solution needs to support anyone wishing to access transit services
- ***The challenge:***
 - ***Reach everyone, inconvenience no one, improve service, improve the bottom line, limit capital expenditure***

Transit-Financial Convergence

- Adoption of ISO 14443 by the Transit, Bankcard, and mobile industries has opened the door for new business models
- This has been aided by improvements to the state of broad band communications
- Where bankcards could not previously be accepted “at the gate”, new models will make this possible
- Synergies in card issuance, customer service, and transaction processing could both generate efficiencies and new revenues
- New cross promotional opportunities with the retail community may also lead to increased ridership (sales lift)
- Achieving these benefits will require new system solutions, new partnership structures, and new operational models

The Converged AFC Value Chain



AFC Operations

- Fare collection solutions by their nature are specialized
- Payment is a small piece of the overall system functionality
- The majority is focused on asset management, performance management, support of business rules and operating procedures, integration with various safety and messaging systems
- Maintaining and Operating a Fare Collection Network requires a variety of disciplines
 - Hosting and IT Management
 - Security Management and Standards Compliance
 - Field Maintenance and Technology Up Keep (SOGR)
 - Business Administration
 - Patron Support
 - Operator Support
 - Marketing and Program Development

Convergence Requirements

- Infrastructure Requirements
 - Asset Refresh and Type Certification
 - Pre-processing Systems
 - PCI compliant data centers
- Communications Requirements
 - Broad band fixed and wireless (buses)
 - Work arounds for network latency
- Business Modeling
 - Demographic overlap of banked community
 - Product development for open loop pre-paid
 - Value chain assessment and commercial modeling
 - Forward view of mobile

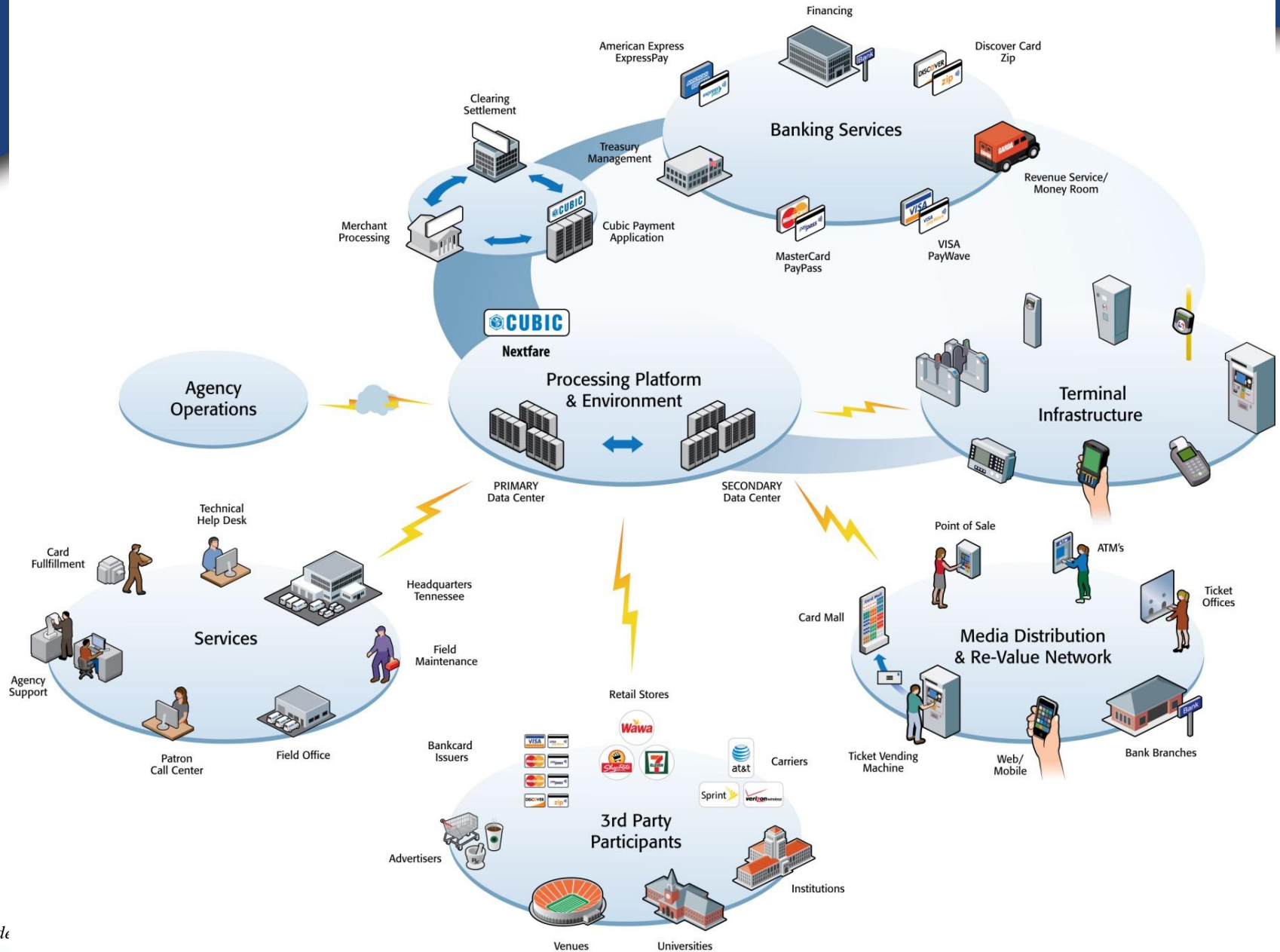
Convergence Requirements (cont.)

- Partnering Structures
 - System supplier
 - System operator
 - Merchant Acquirer
 - Bank
 - Card Servicer
 - Agency(ies)
- Transition Management
 - Rate of banking contactless transition
 - Seamless product introductions
 - Patron education and marketing

Mobile

- NFC is proven as a technology
- The eco-system is still evolving as is the business case for the carriers
- We won't see mass deployment of NFC phones until that is clarified
- We currently expect to see this by 2014
- It must be considered as it will have a profound impact on media strategies
- The mobile phone will also have a big influence on marketing and re-value network strategies

THE OPEN TRANSIT FARE PAYMENT SYSTEM

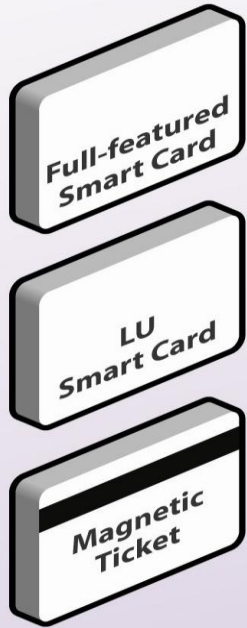


Transition Management

- It will take time to establish the new business and operational structures for open payments
- It will take time for the banking and mobile sectors to achieve significant market penetration for both contactless bankcards and NFC mobile phones
- “Open” does not mean bankcard only
 - Systems must be able to accommodate a wide variety of options as markets mature and consumers select their media of choice
- Transit standards (such as CFMS) will continue to have relevance throughout this transition and in the future as cost control options for agencies

Card and Media Processing Alternatives

Agency Issued Media



CARD-BASED PROCESSING

Bank Cards



PAY-AS-YOU-GO PROCESSING

Other ISO 14443 Media



Other ISO 14443 Form Factors



ACCOUNT BASED PROCESSING