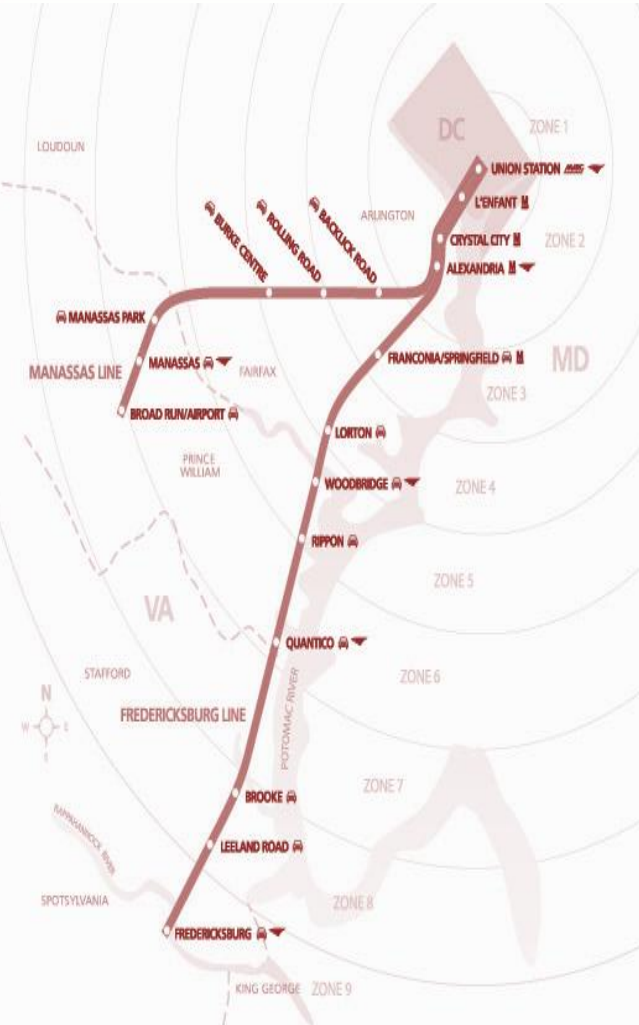


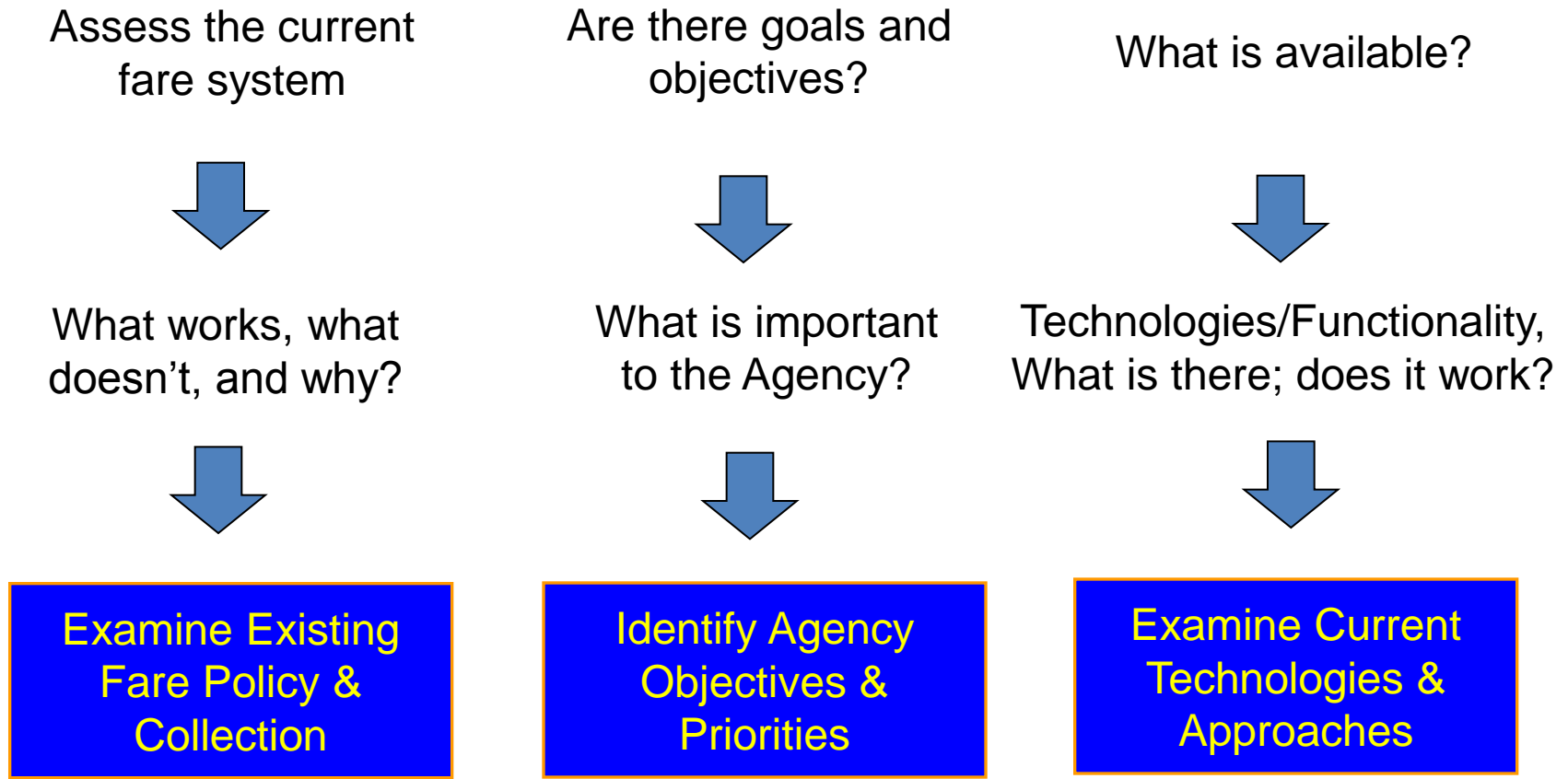
An Effective Approach to Open Payment Systems

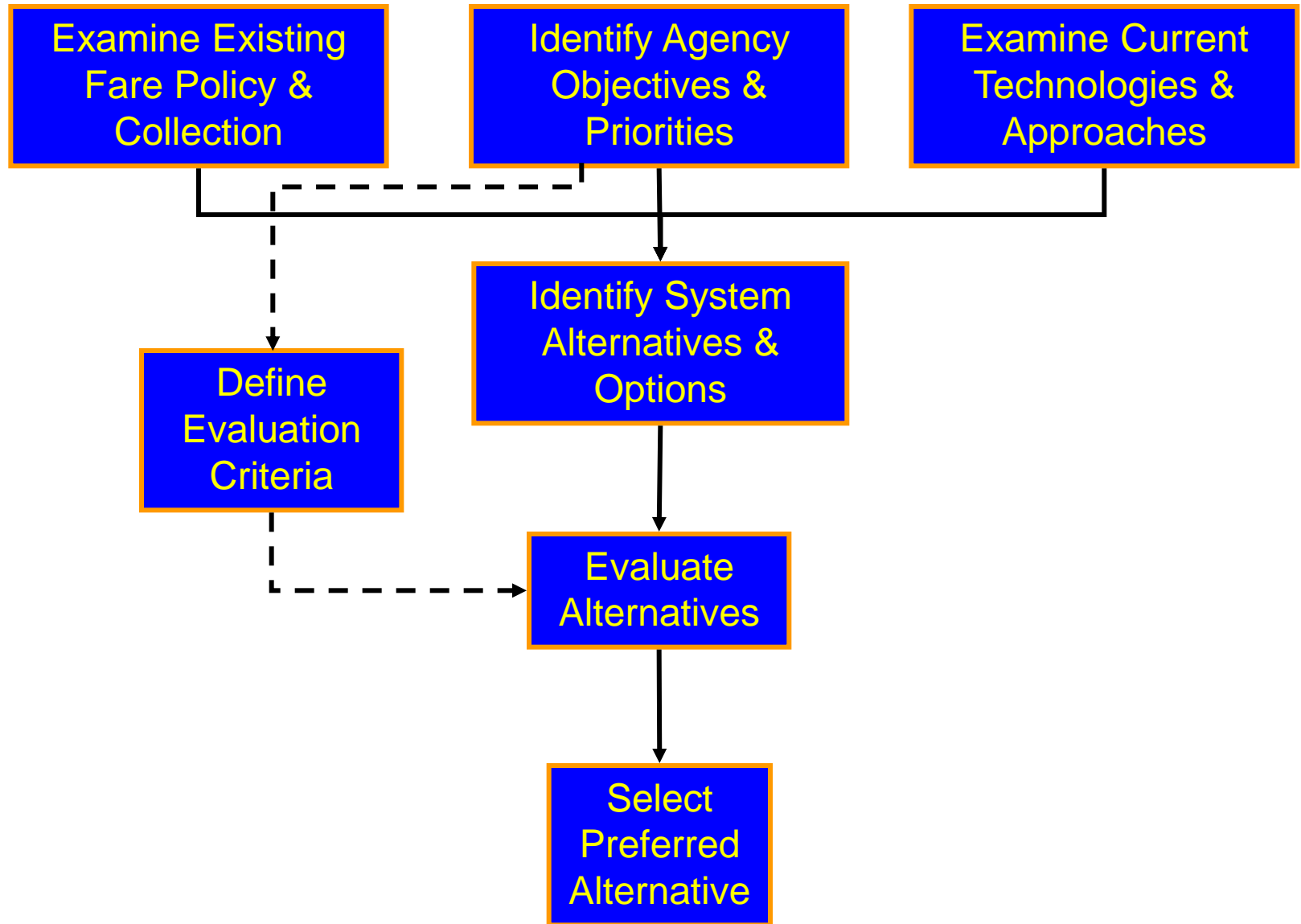
Steven Grant

May 18, 2012



Planning for Implementation of New Technology





AFC Design Philosophy

- Define policies, then design the system
- Design for Open Architecture and to relevant standards
- Secure intellectual property rights to enable system to evolve with industry advances
- Optimize capital and operating costs
 - Leverage existing infrastructure
 - De-emphasize cash where possible
 - Explore opportunities for outsourcing
 - Design for economy (e.g., media distribution, communications costs, third-party fees)

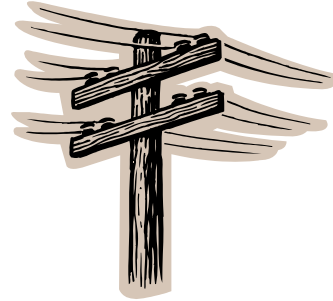
AFC Design Philosophy

- Understand and reflect the needs of the end users
 - Passengers
 - Operators
 - Maintainers
 - Regional Partners
- Adopt new technology and solutions when appropriate
 - Contactless fare media fully mature
 - Automatic reloading via subscriptions, Internet

Open Payment/Open Architecture approaches emerging and growing in variety



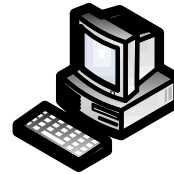
Open Architecture



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Central Server



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Specific Open Architecture Requirements

- Be based on published, open standards, and be unconstrained by proprietary technology
- Facilitate the inclusion of devices, components and systems supplied by multiple manufacturers under separate procurements
- Capable of interfacing with both inter-bank and non-bank financial clearing systems for transaction settlement
- Enable utilization by other transit agencies

Open Payment Systems

- Many available forms of Open Payment:
 - Magnetic stripe bank cards
 - Contactless bank cards
 - Compatible authorized media (ISO/IEC 14443) such as:
 - Building Access ID Cards
 - Drivers Licenses
 - Near Field Communications (NFC) cell phones
 - Social Networks (PayPal, Twitter, Facebook)
- Open Payment media can be used as credentials to augment or supplant existing payment methodologies



Layered Payment Methodology Approach

Open Payments



Agency Specific Media



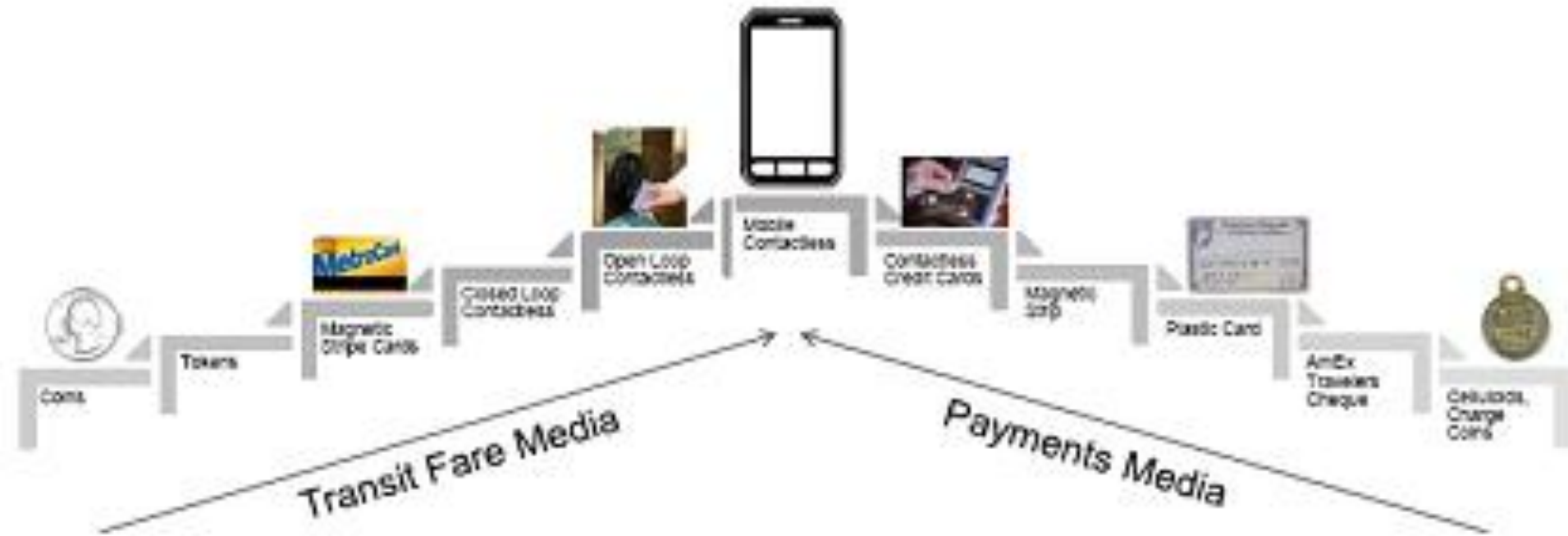
Cash



Open Payments

- Open Payments solutions must balance competing goals:
 - Minimize transaction times in fixed and mobile environment
 - Minimize revenue losses due to fraud
 - Minimize operating costs
 - Transaction fees
 - Communication costs
 - Minimize capital expenditures
 - Minimize fare media distribution costs

Mobile Wallet: At the Intersection of Transit and Payments



Virginia Railway Express: An Overview

- VRE is a key regional partner of WMATA
- Interoperability with WMATA's SmarTrip and NEPP program is desired
- VRE ridership is at near capacity (predominantly federal government employees)
- VRE is looking at new technology solutions to improve customer payment options

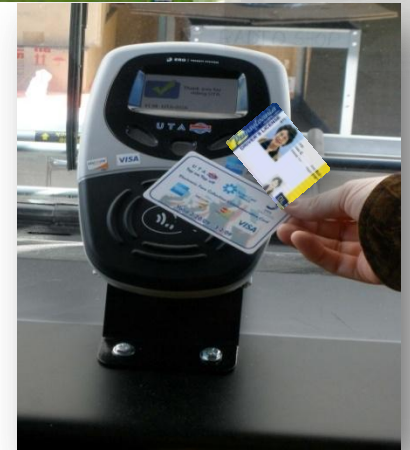


VRE Challenges

- No smart card readers
- Interoperability with WMATA
- Transit Benefits
- Cost constraints integrating with NEPP
- Fare Validation

VRE Technology Solution

- Account-based contactless smart cards
- Improved TVMs
- Smartphone payment technology
- Interface with WMATA's SmarTrip platform



Mobile Ticketing Solution

- RFI issued April 16th for a potential pilot
- Desired solution:
 - On-board vehicle sales
 - Proof-of-payment enforcement
- Objectives:
 - Initial pilot with small set of select VRE-only pass products, stations and users
 - Electronic and visual ticket verification
 - Increase customer options for a cashless system



Mobile Ticketing Solution

- Innovative technology solution supporting an un-gated POP operation
- Robust platform to support a multi-agency set of business rules
- Enhance customer convenience
- Sell and issuing tickets through a mobile ticketing application
- Activation of ticket validity
- Address requirements of SmartBenefits

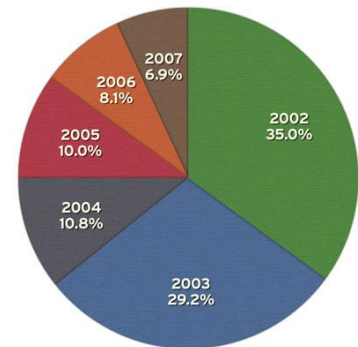


Mobile Ticketing Solution

- Achieve cost efficiencies
- Stimulate the introduction of new products and promotions
- Provide accurate revenue management and accountability
- Operate in challenging network conditions
- Minimal set-up overheads

Payment Technology Approach

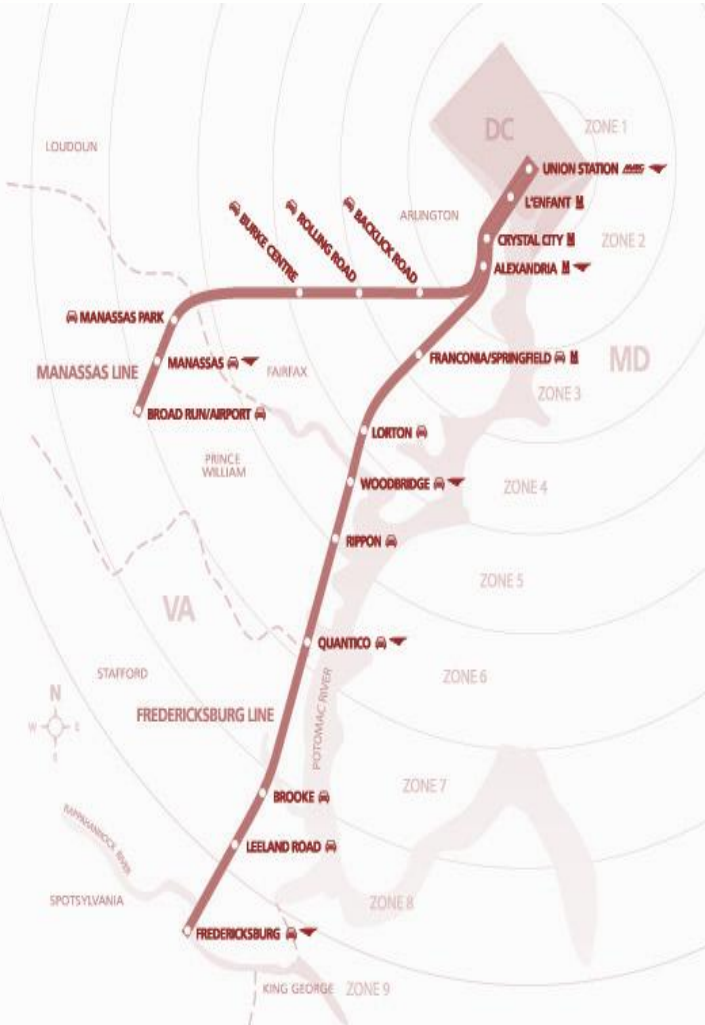
- Payment Media Applications and readers
- Back-end processing for authentication
- Account Management
- Enhancing system design, integration and operation



Next Steps

- Evaluate RFI responses
- Deploy pilot
- Quantify performance measures and financial savings over pilot deployment
- Expand pilot to potential procurement
- Track and publish quantitative and qualitative results for public consumption

Questions



Thank You

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