



# Fare Collection Workshop

## Fare Collection 101

### System Planning



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## System Planning

You want a new fare collection system for your transit agency  
- WHY?!?

1. You want to reduce the barriers for improved customer utilization of your system, and improve their ability to easily pay fares.
2. Your Senator just earmarked \$200 million in Stimulus Funding for your transit agency.
3. Tired of the local newspapers talking about your fare system being able to accept Chuck E. Cheese tokens but not the new \$10s or \$20s.



## System Planning

Assess the current fare system.



What works, what doesn't, and Why?



Examine Existing Fare Policy & Collection

Are there goals and objectives?



What is important to the Agency?



Identify Agency Objectives & Priorities

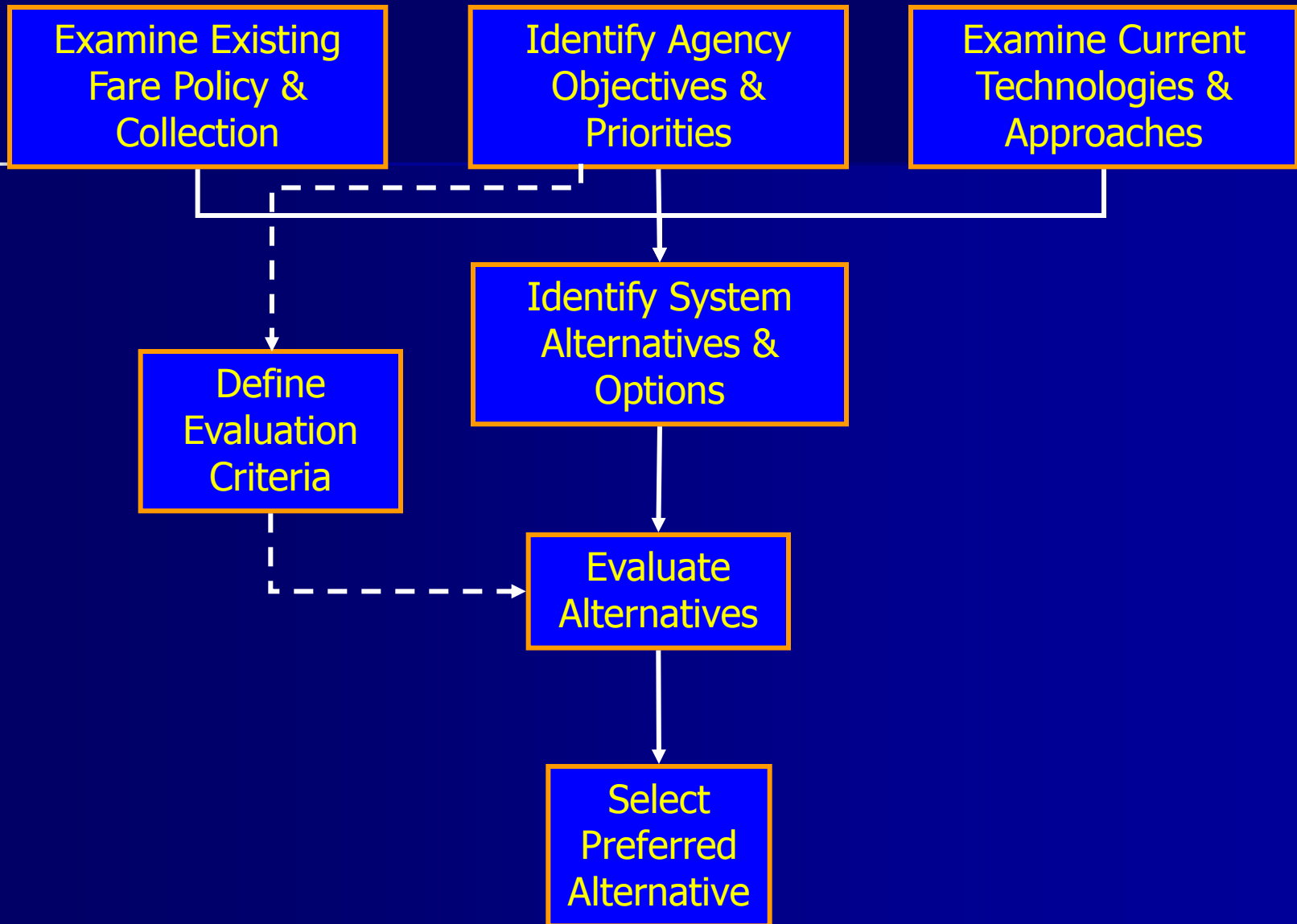
What is available?

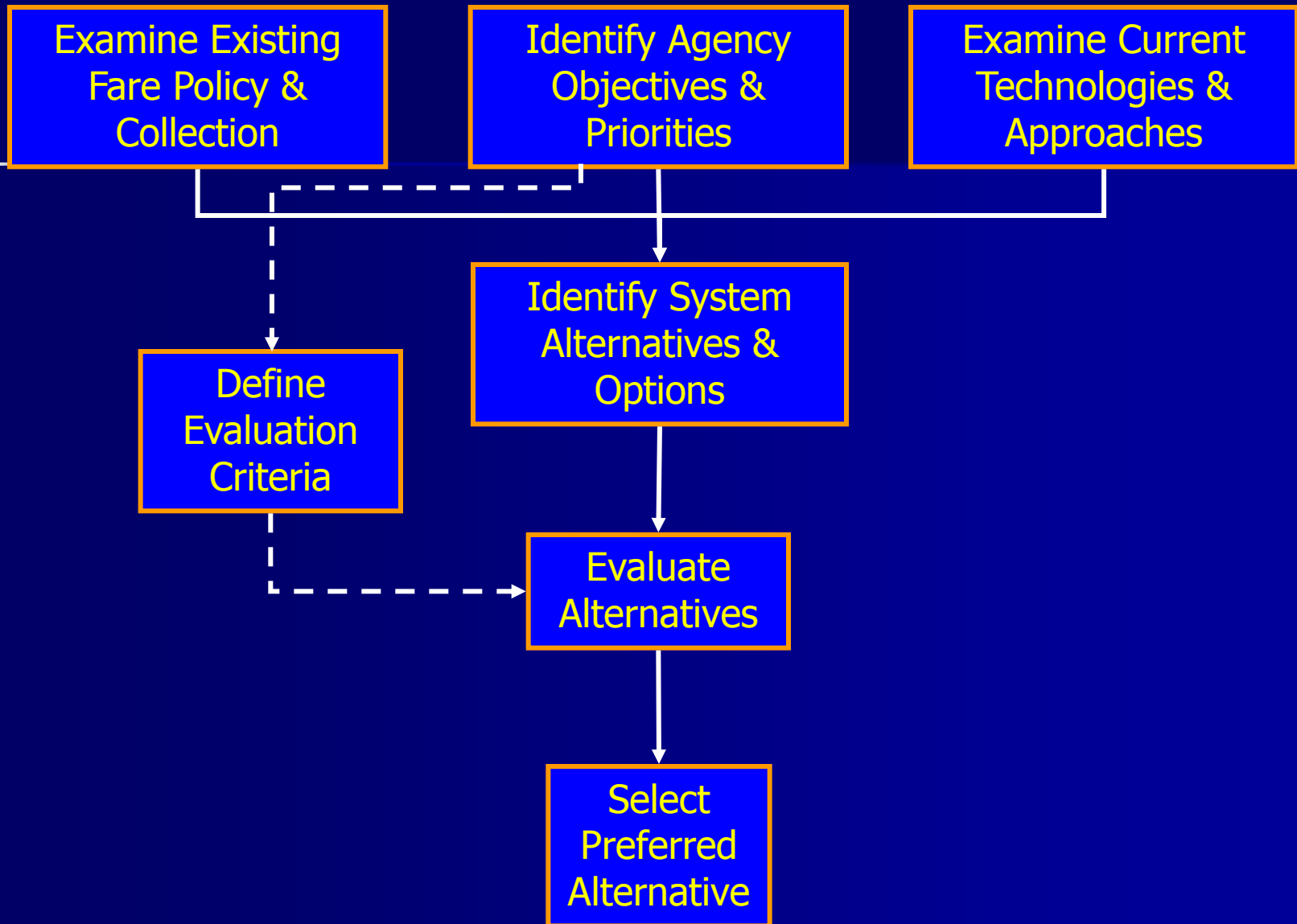


Technologies/Functionality, What is there; does it work?



Examine Current Technologies & Approaches







## Examine Existing Fare Policy & Collection

*Seek a Thorough Understanding of Your System*

### Equipment Condition

- Age, Capabilities, Functionality
- Reliability & Maintainability
- Refurbish? Modify? Replace? Outsource?

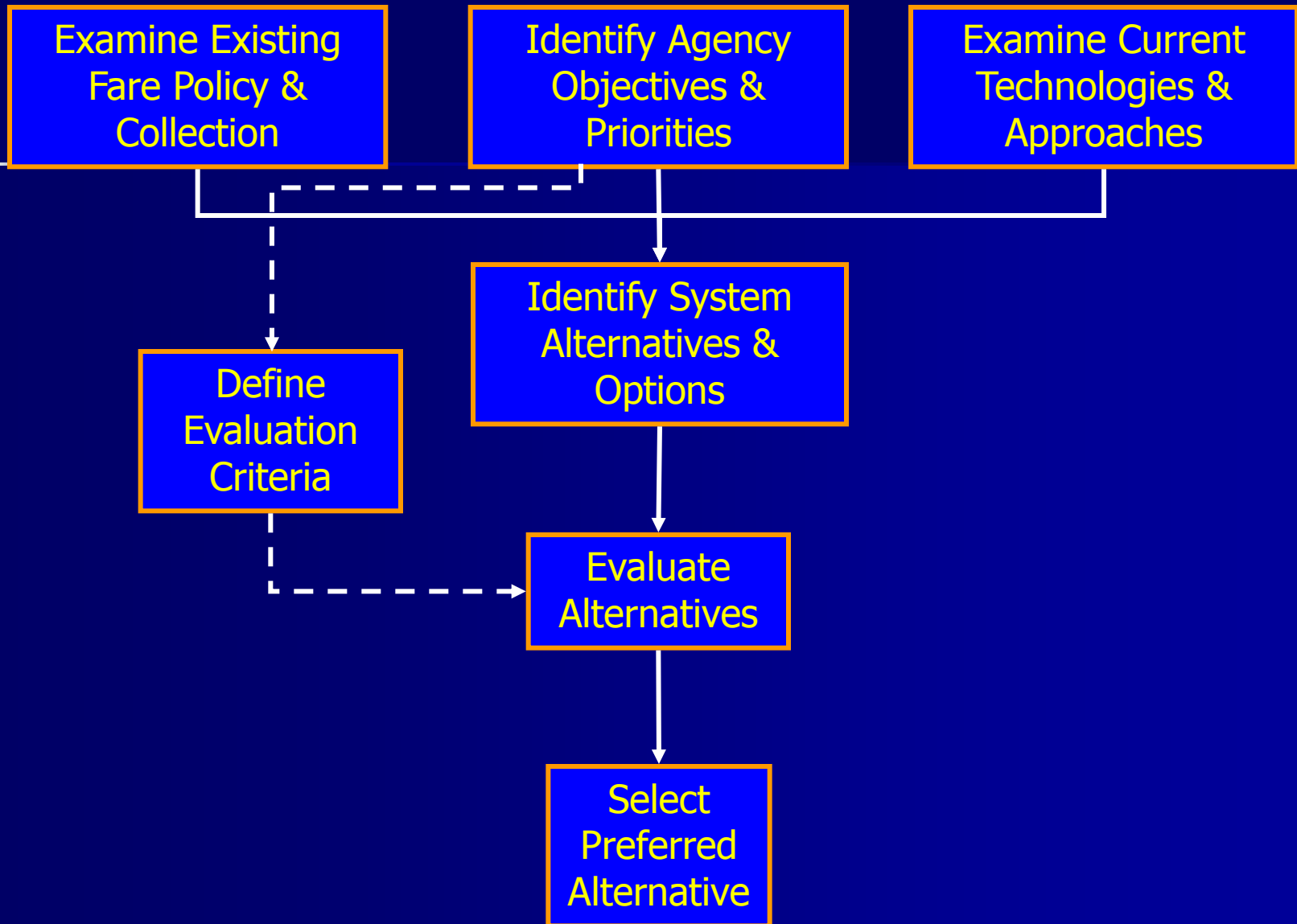
### Fare Policy

- On-Board, Off-Vehicle, Off-Site
- 1-Ride, Multi-Ride, Period/Calendar Passes
- Open Payments/NFC

### Annual O&M Costs

### Rider Characteristics

- Type of Rider: Urban, Suburban
- Frequency of Ride: Commuter, Occasional
- Type of Trip: One Seat, Linked Ride





## Identify Agency Objectives & Priorities

### Objectives to Consider; Establish Priorities

#### Increase Revenue

Generate more revenue

- Remove payment barriers
- Enable fare policy flexibility
- Facilitate employer sponsors

Collect more revenue

- Enable Open Payments
- Support collection of correct fare
- Minimize missed fares
- Automate media reload process

Decrease revenue theft

- Increased process oversight
- Support electronic transactions
- Automatic media validation
- Consolidated report generation

#### Increase Ridership

#### Decrease Costs

....Seek Stakeholder Input





## Identify Agency Objectives & Priorities

### Objectives to Consider; Establish Priorities

Increase Revenue

Increase Ridership

Improve service value

Fares reflect service value

Improve service quality

Speed boarding times  
Special event surges  
Improve ridership data

Improve ease-of-use

Simplify purchase, payment

Open new markets

Support open payments  
Facilitate employer benefits  
School/University partnerships  
Interagency transfers

Decrease Costs

....Seek Stakeholder Input



## Identify Agency Objectives & Priorities

### Objectives to Consider; Establish Priorities

Increase Revenue

Increase Ridership

Decrease Costs

Reduce capital cost

What is your available capital budget?  
Consideration of overhaul/upgrade of items  
Reduced dwell time = less equipment  
Increased throughput = less equipment  
Minimize equipment by outsourcing

Reduce operating cost

Facilitate open payments  
Provide ability to re-use media  
Employ customer-friendly technology  
Consider outsourcing of activities

....Seek Stakeholder Input



## Identify Agency Objectives & Priorities

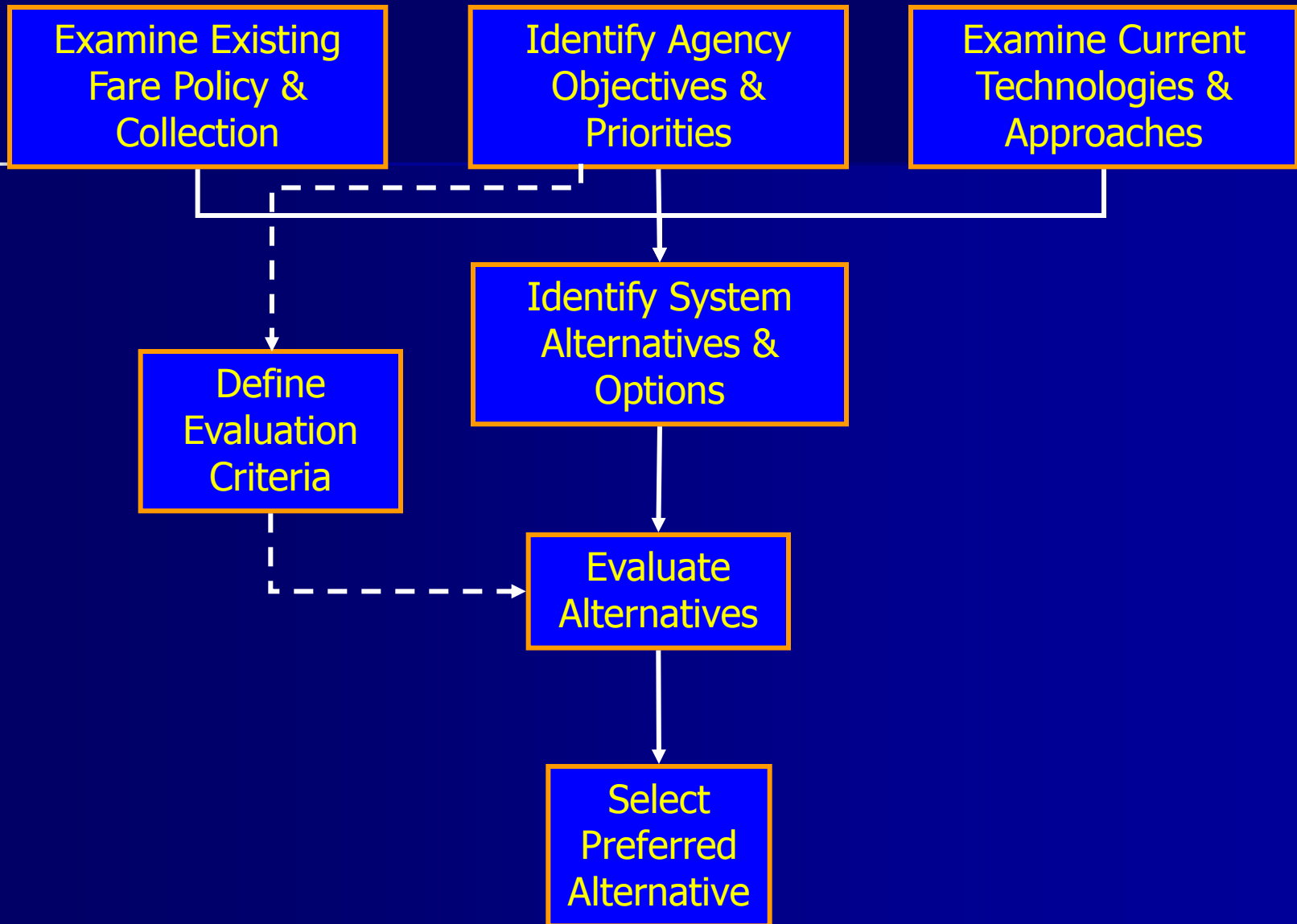
Seek a Thorough Understanding of Your Stakeholders

### Internal Stakeholder Input

Revenue; Maintenance; Planning; Customer Service; Marketing; Operations; Security; Information Systems; Finance/Accounting; Engineering.

### External Stakeholder Input

Customers; Regular, Occasional  
Regional Planning Organizations  
Transit Benefit Providers  
Partner Organizations – Universities, schools, etc.  
Adjoining Transit Agencies





## Examine Current Technologies & Approaches

### Understanding Technology and Lessons Learned

— Perform Survey of Available Fare Systems Technology

— Assess Deployment Approaches

— Review Existing & Pending Standards



## Examine Current Technologies & Approaches

### Elements of Technology and Application

#### Perform Survey of Available Technology

Traditional

Utilizes Magnetic and/or Smart Media  
Requires extensive deployment of hardware  
Typically deployed as a vendor-specific proprietary system

Open Payment

Utilizes all types of Media  
Requires limited deployment of hardware  
Needs excellent wireless and wired network  
Typically deployed as a non-proprietary system

Hybrid

Utilizes all types of Media  
Requires medium deployment of hardware  
Conservative deployment approach  
Typically deployed as a non-proprietary system

#### Assess Deployment Approaches

#### Review Existing & Pending Standards



## Examine Current Technologies & Approaches

### Elements of Technology and Application

Perform Survey of Available Technology

Assess Deployment Approaches

Media Distribution

Agency Personnel Interaction  
Automated Devices in Field  
Web/Call Center Services  
Third Party Retailers

Media Utilization

On-Board – Manual w/farebox, card readers  
Off-Board - Automated w/ fare gates, TVMs  
Proof of Payment – Manual validation w/HHDs

Outsourcing

Leased Equipment in Field  
Maintenance Services  
Revenue Services  
Transaction Processing Center

Review Existing & Pending Standards



## Examine Current Technologies & Approaches

### Elements of Technology and Application

Perform Survey of Available Technology

Assess Deployment Approaches

Review Existing & Pending Standards

Media

Magnetic Standards  
Smart Media Standards  
NFC Standards

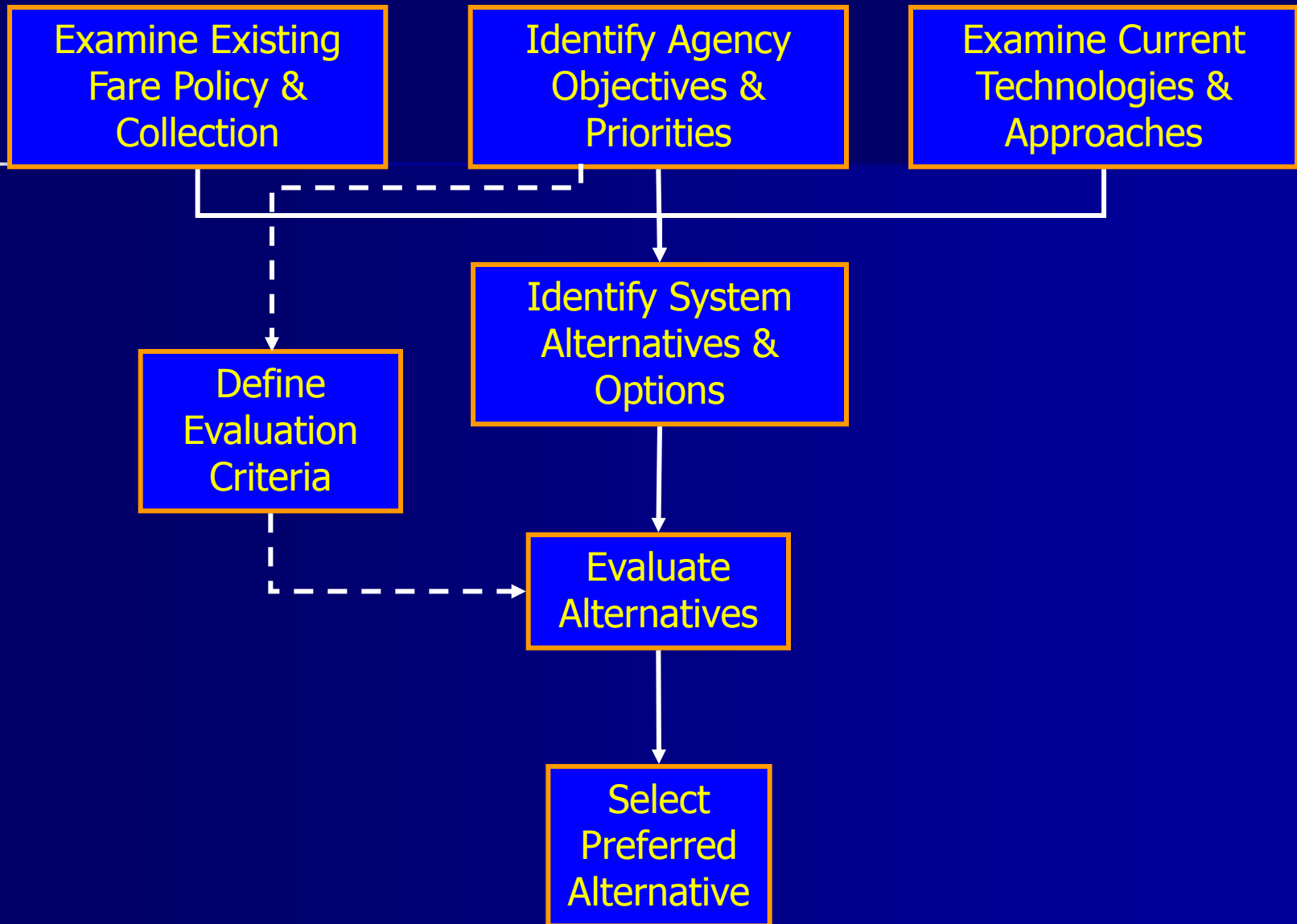
Equipment

Engineering Codes  
Building Codes  
Fire Safety Codes

Payment Security

PCI-DSS  
Network  
Wireless







## Identify System Alternatives & Options

### Key Factors Influencing Alternatives

Fare structure

Flat or zoned; mileage-based  
Service-based: local, express

Ridership characteristics,  
Service & facilities

Service type, service frequency;  
Trip characteristics (1 vs. 2+veh's)  
Open or closed facilities

Customer demographics

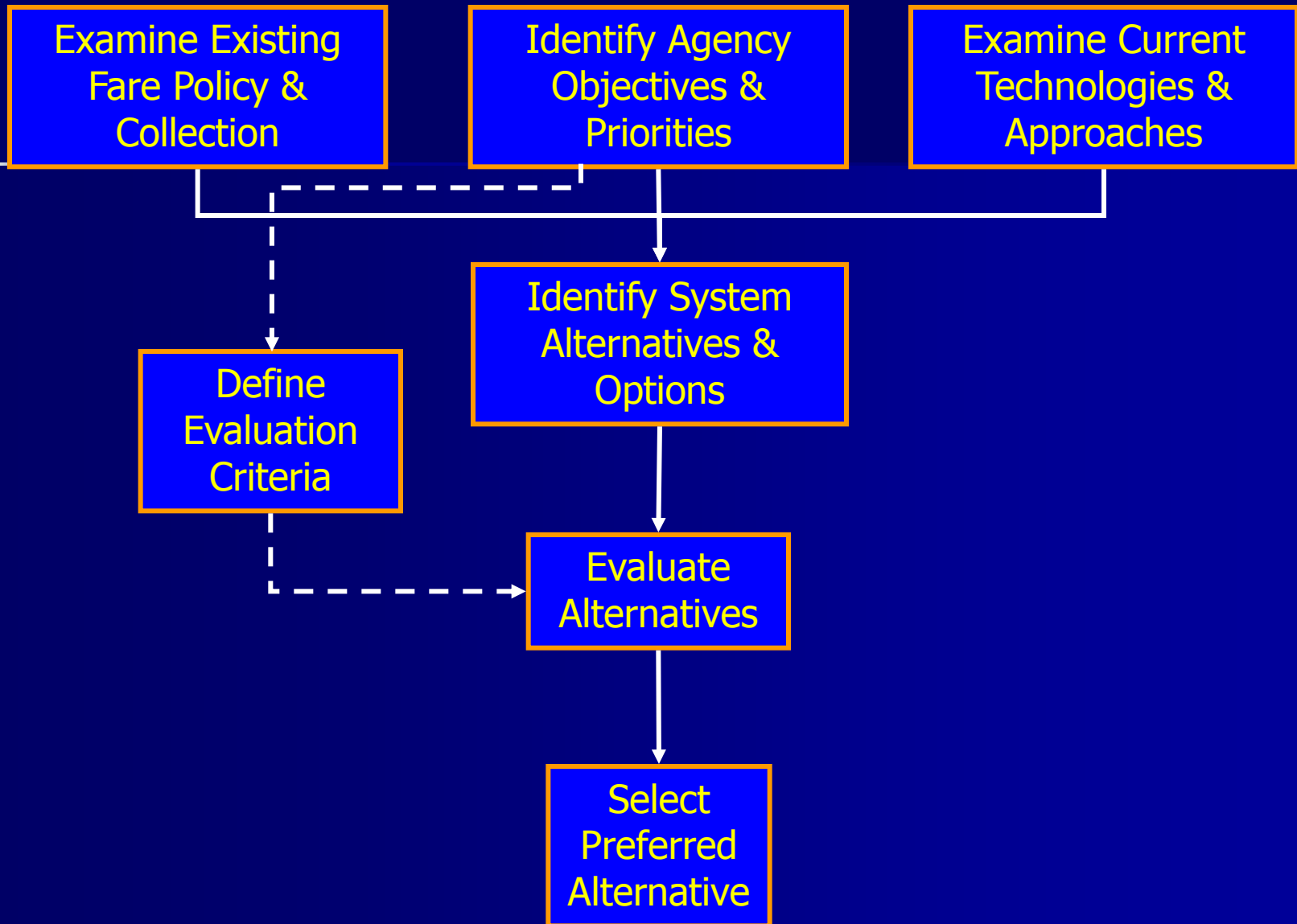
Urban, Suburban  
Banked, Underbanked, Unbanked

Desired methodology

On-board; in-station;  
back-office; regional

Agency culture

Strength of internal staff  
Capital vs operating budget balance  
Appetite for risk





## Evaluate Alternatives

### Base Your Criteria on Your Objectives

Capital Costs	Initial investment
O&M Costs	Life Cycle Costs
Fare Flexibility	Introduce and/or revise fares
Fare Enforcement	Deter evasion; Collect the right fare
Service Quality	Speed the trip
Revenue Security	Protect revenue in all phases
Convenience	Ease of use and administration
Data Quality	Rider travel and preferences
Versatility	System longevity and future growth



## Evaluate Alternatives

### Systems Operating Costs

Operations

In-station or dedicated on-board fare collection

Maintenance

Field; component; inventory

Fare media

Stock inventory, sales/refunds; transit benefits; distribution/control

Cash revenue

Collection & processing

Police / Security

Collection & processing security

Fare inspection

Inspection; processing/tracking; adjudication

Information Systems

Software & network maint/admin  
Software licenses; End-user support



# Evaluate Alternatives

## Systems Capital Costs

### System Development & Design

- Staff project support/mgt
- Professional services
- System requirements;
- Specification preparation

### Procurement Management

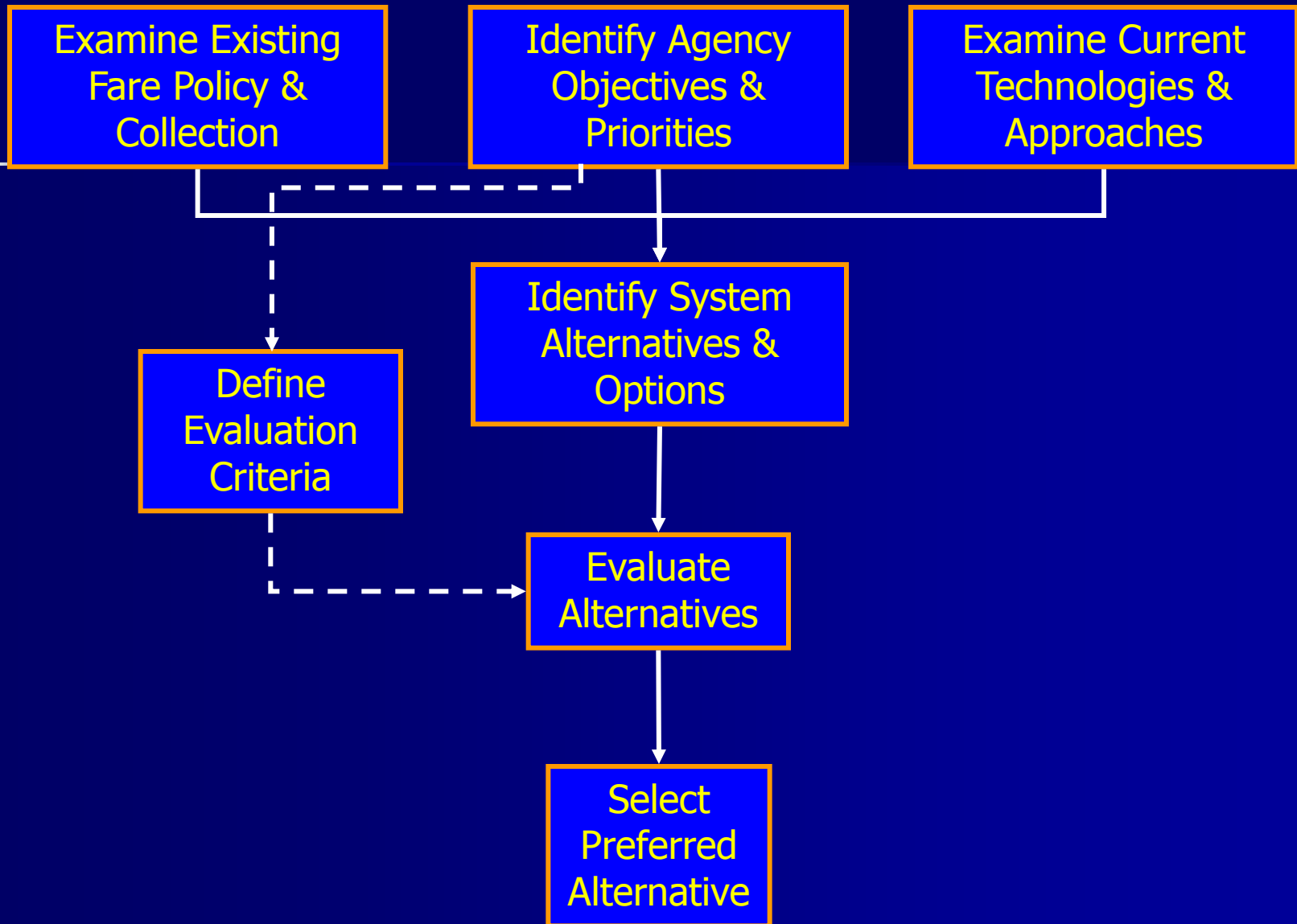
- Solicitation / evaluation / selection;
- Project management;
- Design review; Systems interfaces

### Procurement Contractor

- Equipment; Media; Software;
- Engineering; Project mgt.;
- installation & testing;
- documentation; training program, warranty

### Implementation

- Site Preparation,
- Recruitment; (re)training;
- procedures; public education;
- transition plan





## Select Preferred Alternative

Consider all objectives; give greater weight to priorities

Communicate: Be open about the selection process

Be open about the process: maintain support

Have an executive-level champion for the project

After Selection:

Identify and Address Key Decisions: Business Rules

Implementation Plan and Schedule





Resources  
For further information:

American Public Transportation Association  
[www.apta.com](http://www.apta.com)

*"Automatic Fare Collection System Planning and Implementation Guidelines,"*  
[www.aptastandards.com/Documents/TechnicalSpecifications/  
UniversalTransitFarecardGuidelinesandReports/tabid/168/Default.aspx](http://www.aptastandards.com/Documents/TechnicalSpecifications/UniversalTransitFarecardGuidelinesandReports/tabid/168/Default.aspx)

Smart Card Alliance  
[www.smartcardalliance.org](http://www.smartcardalliance.org)

Federal Reserve Bank of Philadelphia – Payment Card Center  
[www.philadelphiafed.org/payment-cards-center](http://www.philadelphiafed.org/payment-cards-center)

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