Eno
Center for Transportation

MOD FARE INTEGRATION FOR TRANSIT

A CASE STUDY IN THE LOS ANGELES AND PUGET SOUND REGIONS

MOD Fare Integration:

A Case Study in the Los Angeles and Puget Sound Regions

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About the Eno Center for Transportation

The Eno Center for Transportation is an independent, nonpartisan think tank whose vision is for an American transportation system that fosters economic vitality, advances social equity, and improves the quality of life for all. The mission of Eno is to shape public debate on critical multimodal transportation issues and build an innovative network of transportation professionals. As an organization, Eno values integrity, independence, objectivity, quality, and relevance. These core values are reflected in everything we do.

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About the Federal Mobility on Demand Project

Mobility on demand (MOD) refers to transportation services that can be hailed in real-time for an impending trip. MOD integrates data such as location tracking and traffic conditions, with user-entered destination and payment information. Though most MOD services are designed for users to interface using a smartphone, MOD can be requested through a web browser or call center, which can increase accessibility and equity of the service for people without access to a smartphone, people with vision impairments, people who require non-English communication, and others. While MOD is not a new concept, recent technological advancements facilitate its deployment in a new way. Its role in the future of transit systems is yet to be determined.

In May 2016, the Federal Transit Administration (FTA) announced $8 million in funding for its Mobility on Demand Sandbox Demonstration Program. The program is part of FTA's support of transit agencies, government entities, educational institutions, and communities as they experiment with on-demand mobility tools such as smart phone applications and shared mobility services to augment and enhance existing transit agency services. MOD Sandbox was developed to test new ways to encourage multimodal, integrated, automated, accessible, and connected transportation. Among the key features of the program is its focus on local partnerships and demonstrated solutions in real-world settings.

Some of the eligible activities applicants could propose to advance MOD and transit integration were new business models for planning and development, the acquisition of new equipment, services, software and hardware, and operation of the project in a real-world setting. Eligible partners included public transportation providers, state and local departments of transportation, federally recognized Indian tribes, private for- and not-for-profit organizations, transportation service operators, state or local government entities, consultants, research institutions and consortia, and not-for-profit industry organizations. In October 2016, 11 projects were selected for funding (see Appendix).

The largest project awarded was a two-region partnership between Los Angeles and the Puget Sound Region. The Los Angeles County Metropolitan Transportation Authority (LA Metro) collaborated with King County, Washington Metro Transit (King County Metro) and the Central Puget Sound Regional Transit Authority (Sound Transit) on a project to contract with a transportation network company (TNC) to provide first/last mile service to select transit stations near disadvantaged communities. This proposal included evaluation and reporting by the Eno Center for Transportation and local research universities. The FTA awarded the team a grant of $1.35 million for the pilot and corresponding research.

The stated overall goal of the Los Angeles/Puget Sound project is to: 1) define how TNC services can be aligned with existing transit service to serve an effective first-mile/last-mile solution; 2) define how key partners can cost-effectively ensure equal access for individuals with disabilities and low incomes; 3) demonstrate payment integration across transit operator and TNC platforms, specifically to enable service to lower income and unbanked populations.

1. Introduction

Not long ago, riders on buses and trains across the world paid their fares with tokens. Eventually, tokens were replaced by sophisticated electronic swipe and tap cards and tickets, which are the primary fare media today. Several agencies now use mobile apps to collect fares.

However, public transit services in most metropolitan areas in the United States are highly fragmented among multiple modes and providers with various methods of payment. Integrating fare payments systems provides riders with smoother transfers. With private mobility services like transportation network companies (TNC) playing a significant role in many journeys, the landscape of payment systems is growing more complex.

The integration of fare payment systems on public transit is important for efficiency, reliability, customer satisfaction, multimodal trip planning, tracking ridership, and collecting revenue. Studies of fare integration in the United States, western Europe, Australia, and Israel found that simplifying fare payment across multiple agencies and introducing new modes of payment resulted in notable increases in transit ridership.[1]

This report discusses individual and collaborative efforts of public transit agencies and private companies to collect and integrate payment methods and information. The case study of the Mobility on Demand (MOD) Sandbox project in the Los Angeles and Puget Sound regions provides examples of successes and roadblocks in fare integration between public transit agencies and private MOD providers.

2. Background

When successful, the integration of fare systems creates a more seamless travel experience for riders. But cost-sharing agreements, differences in fare structures, interoperability issues, and interagency relationships introduce significant challenges to regional fare integration or integration between public and private transportation providers. Agencies can have vast differences in fare structures, operations, sizes, and workforces. For example, some operators have different age limits in their policy that defines a "youth" or "senior" fare.[2] In the case of agencies integrating with private mobility providers, compatibility with existing fare collection systems, mutual trust, third-party procurement policies, and reconciling public interest with business goals pose unique challenges.

When multiple agencies or companies provide transit services within the same metropolitan area, a revenue sharing system that defines who receives what portion of single payments is necessary for integrating fares. Power dynamics between agencies are important to consider, particularly in the

case of a large agency integrating with a smaller one, or public and private sector partnerships.[3] Regardless of the cost-sharing model pursued, integration requires a level of trust and cooperation over fare policy to help transit agencies recoup their share of revenue from riders using their services.

Consumer privacy and trade secret laws are also major considerations during integration efforts. Agencies collect significant volumes of fare data, particularly through electronic fare payment systems, and implement data management protocols to safeguard rider data and remove user IDs.[4] Concerns over protection of trade secrets, user privacy, and data storage pose unique challenges for public-private partnerships, particularly when negotiating data sharing agreements.[5] Multiagency integration efforts require coordinating privacy policies among all partner organizations and ensuring sufficient privacy protection measures in the hardware and software used.[6]

Agencies have a large degree of regulatory autonomy to implement a fare collection system that meets their revenue, data, and fare policy needs. However, options for fare payment systems and their levels of integration between services and platforms depend on a variety of factors. These include existing contracts that bind a transportation agency to a particular fare collection system, the availability and feasibility of hardware and software, as well as the minimal but highly varied laws and regulations at the local, state, and federal levels.

Some federal programs provide funding opportunities to incentivize technology enabled fare integration. These programs include the MOD Sandbox and subsequent Federal Transit Administration (FTA) innovation funding programs, including the Integrated Mobility Initiative and Accelerating Innovative Mobility program. Other laws and regulations, however, still effect fare collection and integration, especially around the topic of data collection and use at the state and federal levels.[7]

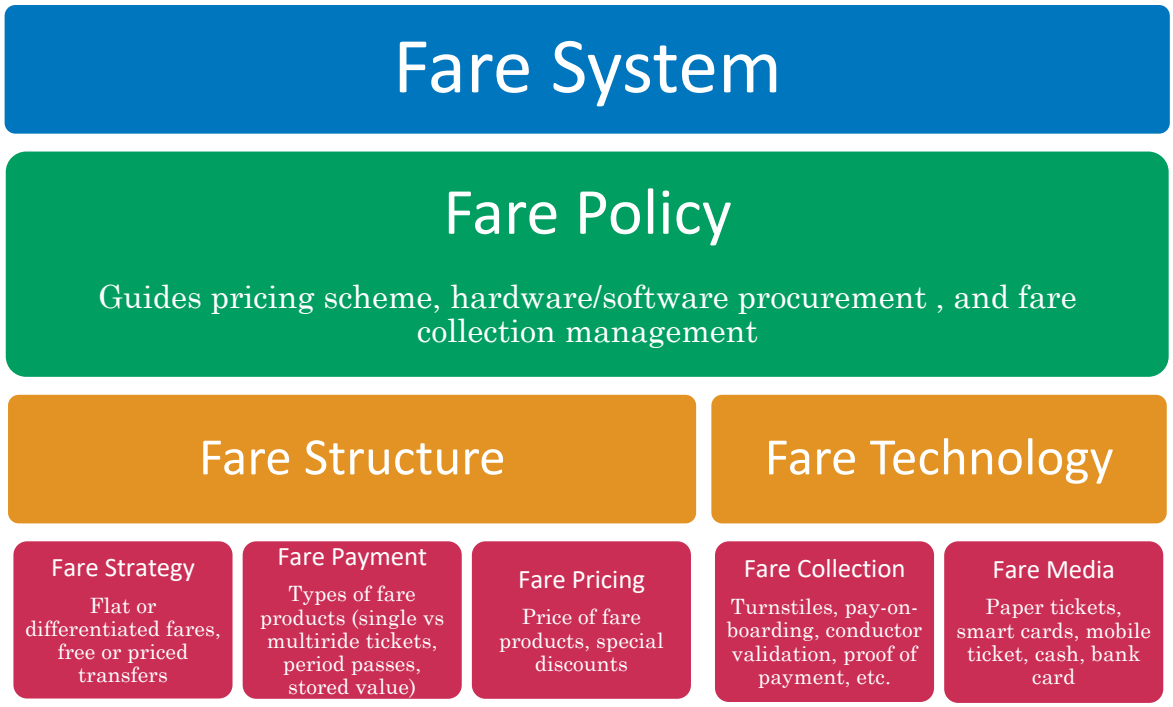
Emerging private mobility options affect transit agencies' fare system needs and priorities. Simplifying payment for users through options like mobile payments and account-based smart cards must be balanced with equity needs, such as options for people who are unbanked or without smart phones. Examples of new fare payment options and corresponding integration with other mobility providers presented in this paper illustrate best practices and lessons learned.

2.1 Fare Payment Overview

A fare system is comprised of its policy, structure, and technology. Each transit agency has its own **fare policies**, which guide the organization's decisions on pricing schemes, hardware and software purchases and updates, and fare collection management. Fare policies can be formally adopted or informally developed, and can change over time in response to specific events or concerns like the state of the economy or budget changes. Some agencies set their fare policies according to mandatory fare recovery ratios, which specify the share of operating expenses that must be recovered by fare revenue.[8] Fare policy decisions are also informed by existing legacy fare collection systems, existing and potential rider demographics, and procurement processes. Other fare policy specifications require fare collection methodology to track fares by mode or jurisdiction.

For MOD services, private companies present new fare policies based on their technology and business goals, and negotiate these with their public partner. Integration of private mobility providers with transit is an opportunity to bring more transportation modes under a single payment platform, but may also present new challenges when reconciling new services with existing agency fare policy and structure.

Figure 1. Fare System Set-up Components



Note: Fare system elements do not necessarily follow a strict hierarchy, and different elements can inform each other

Fare policies help guide an agency's **fare structure**, which includes its **fare strategy, media and payment options, and pricing.** An agency's fare structure also informs fare data collection, ownership, and storage. The relationship between fare policy and fare strategy, however, is not always hierarchical. An agency's fare strategy concerns the decision to adopt flat or differentiated fares (i.e. distance or zone based or peak-hour fares), any special fares (e.g. student, senior, or employer discounts), and whether or how to track and price transfers across routes and modes. These decisions further inform an agency's payment options and pricing.

Typical **fare payment** options include single or multiride tickets, stored value, period passes, card, or cash. Prices are set by agencies pursuant to their fare policy.[9] **Fare collection** methods include physical barriers (i.e. turnstiles/faregates), pay-on-board, proof-of-payment, or conductor validation. Fare collection methods vary by mode, as some methods are more appropriate in particular circumstances (i.e. use of barriers for subways versus proof-of-payment for light rail or buses). These collection methods both influence and are influenced by the specific payment technologies and fare media an agency adopts. Table 1 shows examples of typical fare collection methods by mode.

Table 1: Typical Fare Collection Methods by Transit Mode

Collection Method	Light Rail	Heavy Rail	Commuter Rail	BRT	Bus
Proof of Payment	X	X	X	X	X
Barrier	X	X		X	
Pay on Boarding	X			X	X
Conductor Validated			X		

Source: Fleishman, 2003.

Fare media options include cash, paper tickets, magnetic stripe cards, electronic smart cards, bankcards, and mobile ticketing.[10] The choice of fare media accepted often requires balancing accessibility, interoperability with other transit services, equity (such as the ability for unbanked riders to purchase farecards and take transit), and the cost of producing fare media and any necessary technology like card readers.

MOD services and app-based fare collection methods are notably missing from Table 1. The recent emergence of new, app-based modes and service types has led transit agencies to reconsider how to collect fares on new vehicles and through third party apps.

Mobility as a Service

A long-term vision for broad fare integration is part of "mobility as a service" (MaaS). MaaS refers to the integration of a variety of modes of transportation – including transit, ridehailing, rental cars, bikeshare, and micromobility – under a single platform with unified trip planning, booking, and electronic ticketing/payment. MaaS has been adopted in European cities like Gothenburg, Sweden and Helsinki, Finland, where residents are able to plan and pay for trips across all public and private modes of transportation using a single app..[11] Residents either pay as they go, or purchase various subscription plans in lieu of individual tickets or bookings. By integrating public and private modes of transportation under one platform, MaaS intends to simplify the user experience and provide on-demand access to various transportation options that would have otherwise been spread across several apps and platforms. While not all integration efforts are an attempt to adopt a MaaS model, these approaches share an emphasis on streamlining travel planning and payment between public transit and other modes of transportation such as ridehailing, bikeshare, or micromobility.

2.2 Fare Integration Examples

Over the past several years, transit agencies and private companies moved towards adoption of more sophisticated electronic fare payment methods as well as greater integration with regional transit and mobility services.[12]

At the agency level, Chicago's Ventra system is an example of large-scale regional fare integration that established a universal fare payment system across multiple agencies: the Chicago Transit Authority (CTA), Pace (suburban bus), and Metra (commuter rail). The Ventra system, launched in 2013, is both an account-based and open payment system that allows riders to use paper tickets, a smart card, a personal credit card, or mobile device (since 2015) to pay for trips.[13] The program is one of the first in the nation to integrate both proof-of-payment ticketing on commuter rail with contactless payment technology on rail and buses across agencies.[14] In 2015, Ventra launched its mobile app that allows riders to track the status of trains and buses, manage accounts, and purchase fare products directly on their phone, tablet, or computer.

The open payment structure of Ventra allows agencies to easily incorporate new providers (Metra was added to Ventra in 2015), update fare structure, adopt mobile payment, and add shared mobility providers without a major overhaul in software, equipment, or fare media.[15] As part of the FTA's MOD Sandbox program, the CTA is pursuing a two-phase integration of Chicago's bikeshare system, Divvy, into the Ventra app. The first stage of integration will display Divvy bike availability near transit stops during trip planning

and allow Divvy users to unlock bikes with their Divvy accounts in the Ventra app. The second stage of integration will allow riders to directly pay for their Divvy trip using stored Ventra transit value or other payment options in the Ventra app.[16] If successful, the second phase of the MOD Sandbox pilot will allow for future integration of other shared mobility services into the Ventra app.

In the private sector, trip planning apps and TNCs have begun piloting similar integration into their apps. Uber recently launched transit fare integration with the Denver Regional Transportation District's (RTD) bus and rail services, as well as the Las Vegas Regional Transportation Commission's (RTC) local bus services into the Uber app. Partnering with Masabi, a mobile ticketing software firm used by over 30 transportation authorities both inside and outside of the United States, Uber will allow users to view and purchase a range of RTD and RTC fare products.[17] The partnership draws upon Masabi's Justride Software Development Kit (SDK), which allows public transit agencies to integrate mobile ticketing into third party apps, like Uber.[18]

Masabi also partnered with the trip-planning app *Transit* to pilot mobile fare payment options. The pilot program was launched in partnership with the St. Catherines Transit Commission in Ontario. The Commission's goal was to streamline its fare collection process and make it easier for riders to pay for trips. In lieu of creating regional fare media or a new farebox system, the agency opted for a mobile ticketing pilot to allow riders to directly plan and purchase fare products through the *Transit* app, which was already designated as the agency's official trip planning platform.[19] The mobile ticketing pilot utilized a proof-of-payment system as opposed to requiring new on-board infrastructure, though the agency will be able to add scanners in the future.

The pilot launched in April 2019, and mobile ticketing accounted for 10 percent of all purchased fares in that region by the end of the pilot's first 12 weeks. Over 60 percent of mobile fares purchased were for single-ride tickets, suggesting that mobile fare integration could make transit more accessible and attractive for occasional riders.[20] Since the Ontario pilot, *Transit* launched two other mobile fare integration partnerships with RTD in Denver and eight Ohio transit agencies who are a member of the EZfare consortium (a mobile ticketing application launched in Ohio).[21]

While some agencies have moved towards regional fare integration through the adoption of universal fare media and payment systems like Ventra in Chicago, transit fare integration in third-party apps is still a work in progress. The proprietary, closed nature of many agencies' and companies'

fare collection systems pose challenges to the adoption of open-payment methods.[22]

3. Case Study: Los Angeles and Puget Sound MOD Pilot

The MOD pilot in the Los Angeles and Puget Sound regions connects people to transit with on-demand service to and from select transit stations using Via. The project had a stated goal of "payment integration across transit operator and TNC platforms, specifically to enable service to lower income and unbanked populations."[23]

The agencies in the Puget Sound region were able to achieve rudimentary fare integration between the MOD service and the region's One Regional Card for All (ORCA) fare payment system. In Los Angeles, several factors prevented LA Metro from fully integrating Via with its regional Transit Access Pass (TAP) card fare payment process. While agencies in both regions had varying experiences with fare integration, they each developed their own unique solutions and ultimately provided free or low-cost MOD rides for much of the pilot's first year.

3.1 Fare Integration in the Puget Sound Region

In the Puget Sound region, the final fare integration structure offered riders two options: 1) paying with ORCA cards or mobile payment on board the MOD vehicle, with fares going straight to the transit agencies, or 2) with a credit, debit, or pre-paid card, with the fare going to Via but then subtracted from the agencies' monthly payments to Via.[24]

ORCA Card Readers on MOD Vehicles

The fare integration element of the pilot in the Puget Sound region focused primarily on integrating the ORCA card with Via. Seven agencies in the region currently use the ORCA fare system, some of which also share the same mobile ticketing platform (Transit GO Ticket). All seven agencies on the ORCA system have a representative on the Central Puget Sound Regional Fare Coordination System Joint Board of Directors, which governs the system. The ORCA system is card-based, meaning each user is linked to a card that contains information about the user and their ORCA card number. The pilot achieved a successful but rudimentary integration with the ORCA system through specific portable card readers called Portable Fare Transaction Processers (PFTPs).

The ORCA-integrated fare system used portable card readers installed in the MOD vehicles. This allowed Sound Transit and King County Metro to:

- Minimize the inconvenience to the rider of having to use multiple/new fare payment methodologies;

- Minimize the actual fare amount paid, as riders received a free transfer and reduced fares can be honored through ORCA;
- Allow for free transfers to or from public transit systems in the region;
- Collect as much data on each trip and rider as possible while protecting personally identifiable data; and
- Avoid the need for additional county council approvals for new fare amounts.

Sounds Transit and King County Metro initially worked with the Joint Board for approval to access lists of reduced-fare ORCA cards. This would allow the agencies to create a system to look up and validate a user's ORCA card number and determine whether they were eligible for reduced fares. However, the later decision to use portable card readers for fare collection meant that riders' ORCA cards would be read and processed directly in the vehicle, eliminating the need for a more complex user validation system.

The hardware needed for ORCA payment, as with most transit fare payment systems, is specialized. Public transit vehicles in the region use readers specifically designed for ORCA card payment. Because the agencies in the Puget Sound Region decided to use portable ORCA readers for the pilot, they also chose to use a dedicated fleet of vehicles that Via's contracted drivers rented and used for their shift. This allowed the agencies to equip all Via vehicles with portable ORCA readers while being able to easily keep track of each reader.

These specialized readers, however, are in low supply, and not replaceable. Trusting Via and their contracted drivers as well as establishing accountability processes was an important part of fare integration in the Puget Sound pilot. This trust was built over time, starting from the beginning of the procurement process.[25] To further secure the portable readers, the transit agencies conducted trainings for drivers, ensured security for device storage, implemented a check-in and check-out process, established repair protocols, and monitored use of the devices.

Despite challenges with the card readers, ORCA integration allowed for more thorough data assessment of the pilot. Regulations for trade secret and public records explicitly protect the privacy of users' fare data under Washington State law. This allows for easier data sharing and analysis without worries of public record requests for ORCA data.[26] Such protections were useful and necessary for program evaluation: ORCA cards and mobile payment are tied to user information such as youth and disability status, adding richness to the dataset while underscoring the importance of privacy protections.

Credit, debit, and prepaid cards

In the case of the MOD pilot, equity considerations like making the fare payment process easy for all potential riders and those new to the public transit system led the partners to develop additional payment options for the MOD service. For example, new riders were less likely to already have an ORCA card, and other means of payment, like credit cards, were more accessible and user-friendly for them. While these groups constitute a minority of transit riders in the region, it was still important for the agencies to provide multiple payment options.

However, the agencies ran into several challenges when attempting to incorporate on-board credit card payment into the pilot. In early spring 2019, the Puget Sound transit agencies were made aware of a King County policy that requires all vendors to use a county-approved credit card payment processor, and regulators found that Via's did not qualify. As a result, the service only accepted Transit GO mobile ticketing and ORCA when it launched in April 2019.

Limited payment methods during the first two months of the pilot imposed barriers to access for tourists, occasional riders, and populations with limited or no smartphone access such as lower income households and older adults. King County ultimately granted the agencies a 12-month exemption from its payment processor policy, allowing the MOD pilot to accept credit cards by the end of May 2019 and expanding riders' fare payment options.

While the addition of credit card payment provided riders with more fare payment options, the credit card system did not allow for free transfers. Every user that opted to pay with card had to enter their ORCA number into the Via app. Via, however, did not have access to the ORCA database and could not validate whether a user was transferring to or from transit. Transferring riders using credit or debit cards thus had to pay two fares.

Despite these challenges, the addition of credit card payments was important for the goal of attracting new riders to the transit system, even though most riders did not use that option. This system not only increased access to the pilot, but also reflected the importance of regional coordination and adaptability among agencies, private partners, and other government entities in fare integration and equity considerations.

3.2 Fare Integration in the Los Angeles Region

In the Los Angeles region, the original goal of account-based fare integration with the LA Metro Transit Access Pass (TAP) card system was only partially realized. LA Metro's Office of Extraordinary Innovation (OEI), which ran the pilot, developed an early working relationship between OEI staff and the

TAP office. The TAP office developed some initial systems to integrate with Via, but they were not used for long as MOD trips became free for riders.

When LA Metro received the FTA MOD Sandbox grant award in 2016, the TAP office was already planning to upgrade its fare payment system to a new, account-based system called TAPForce. This initiative was a major upgrade for LA Metro's fare payment technology, and was designed to integrate with most application programming interfaces (APIs). TAPForce likely could have integrated with Via's payment system for the pilot, but the existing timeline for the TAP overhaul did not align with the pilot launch.

Without integration with the existing TAP system, LA Metro decided to use the default Via app to collect fares. Initially, riders entered their TAP card numbers into the Via app. This enabled the agencies to provide free transfers and validate youth, disabled, or senior fare eligibility. It also allowed the research team to track travel patterns throughout the transit system.

Soon after the pilot's launch, all MOD pilot rides became free in Los Angeles, eliminating the need for fare collection. This decision was made by Via and supported by LA Metro, with the hope to increase ridership. Via staff were worried that continuing to ask riders for their TAP number would foster suspicion over whether the service was truly free and add another burden to users. The OEI project team agreed to remove the TAP card number entry in the Via app.

Removing the need for TAP cards provided more riders with easier access to the pilot. However, the lack of TAP integration removed the ability of researchers to track individual passengers through their entire trip on Via and the LA Metro system, diminishing pilot assessment and research possibilities.

Now that TAP made significant progress towards implementing TAPForce, fare integration with future MOD services is much more feasible. Such a system could allow for flexibility, straightforward integration, and valuable research data, underscoring the value of the investment in a more open, adaptable fare system.

4. Recommendations

Opportunities for fare payment integration between transit systems and private companies are complex and vary greatly by region, company, and transit agency. The following recommendations provide the FTA, transit agencies, and private mobility companies with guidance to consider before embarking on partnerships involving fare payment and potential integration.

Prioritize project goals. Fare integration is a worthwhile and important goal for a MOD pilot project. However, agencies should weigh this goal against other project objectives and take into account time and expenses when determining how much effort to devote to achieving integration. In Los Angeles, LA Metro prioritized getting the pilot project up and running over waiting for full fare integration.

Use the benefits of positive partnerships. Spending time and resources to develop trustworthy partnerships is important, particularly when used to improve projects. The mutual trust and accountability systems developed between the Puget Sound agencies and Via when deploying portable ORCA readers allowed for a user-friendly fare system, better customer experience, and more equitable access to the pilot.

Design adaptable fare systems. Although companies and technologies change, some fare systems are more adaptable and flexible than others. The Ventra system in Chicago, ORCA in Puget Sound, and TAPForce in Los Angeles all took different approaches to incorporating adaptability into their systems at various costs. When investing capital into a new fare system, planning for future changes and adaptability reduces costs and headaches in the future.

Coordinate early and often with the agency staff who are responsible for fare collection and media. While fare collection at transit agencies constantly evolves – sometimes rapidly and sometimes slowly – each agency's fare payment system and structure provides different opportunities for integration. Achieving fare integration is more likely and feasible with a full and early understanding of the opportunities and limitations of both existing and future fare payment systems, as well as robust collaboration within the agency.

Recognize the utility of fare payment data. Fare payment systems are sometimes set up not only to benefit users and operators, but also for the benefit of modeling, assessing, or evaluating elements of a transportation network. Being able to access fare data is immensely useful for agencies to assess whether a service is useful to passengers, and whether or not to continue the service in the future. The integration of Via with the ORCA system in the Puget Sound region provided a rich dataset on rider behavior that allowed the agencies and research team to analyze trip patterns and determine whether the MOD service was a useful way to spend limited agency dollars.

Consider fare-free and free-transfer options. Fare-free transit can still use fare media and collect data associated with it. Maintaining fare payment systems allows transportation providers to track travel behavior, even when the cost of a ride is free, though deploying and operating these systems comes at a

cost. Deploying fare payment systems also allows transportation providers to offer free transfers to riders, though the need to enter payment information or use a fare card for a free trip may inconvenience riders.

Allow for multiple payment methods to increase equity in access. MOD services invariably use app-based hailing and routing as the primary way to deliver their rides. However, not every passenger has a smartphone with data access to request and pay for their trip. A true integrated system should ensure that standard fare media is able to be re-filled in various locations with cash and card, and allow for additional methods of payment on-board such as pre-paid or credit cards. Doing so helps provide access to transportation services for un-or under-banked populations, or people who do not typically travel to locations where fare media are loaded with value.

5. Conclusion

Fare integration is an important goal to consider when adding new modes and travel options in a region, especially if these modes fall under the purview of an existing provider like a transit agency. The unique needs and dynamics of each region inform how agencies pursue integration, both with other public entities and private mobility providers. In the case of partnerships between public transit agencies and private mobility providers, experiences in Los Angeles and Puget Sound demonstrate that valuable lessons were learned and unique alternatives were developed. Fare integration results from both pilots underscore the importance of mutual trust, early coordination, and flexibility in achieving an integrated system.

Appendix

Fiscal Year 2016 Mobility on Demand (MOD) Sandbox Program Projects

Project Sponsor	Description	Funding
Regional Transportation Authority of Pima County, Arizona	The Adaptive Mobility with Reliability and Efficiency project, integrating fixed route, subscription based ride-sharing and social carpooling services into an existing data platform to provide affordable, convenient and flexible service. The project augments transit by addressing first mile/ last mile issues and congestion mitigation by incorporating shared ride-on-demand services, integrated open payment systems and advanced traveler information systems.	$669,158
Valley Metro Rail, Inc., Phoenix	A smart phone mobility platform that integrates mobile ticketing and multimodal trip planning. The network will include a range of mobility providers, including ride-hailing, bike sharing, and car-sharing companies, allowing all levels of income, age and people with disabilities to have access to an integrated, connected multimodal transportation system.	$1,001,000
City of Palo Alto, California	The Bay Area Fair Value Commuting Demonstration project, which aims to reduce single-occupant vehicle driving from 75% to 50% in the Bay Area. The project includes commuter trip reduction software, a mobility aggregation multimodal trip planning app, workplace parking rebates and analytics to compare commutes.	$1,085,000
Los Angeles County Metropolitan Transportation Authority	A two-region mobility on demand partnership with the car-sharing company, Lyft*, in Los Angeles and Puget Sound. The project will explore the viability of first/last mile solutions for trips originating and ending at select transit stops. Customers can use the Lyft* app or call a dispatcher phone number, providing equity to lower income individuals. (*Partnership changed from Lyft to Via since announcement.)	$1,350,000
San Francisco Bay Area Rapid Transit	An integrated carpool to transit program that will help users find carpool matches as well as match them to their transit destinations. The project will provide a seamless way to reserve and pay for in-demand parking spaces at BART stations, allow preferential parking for carpoolers while increasing transit ridership by improving access to BART stations. The software will include ways to identify drivers with wheelchair-accessible vehicles.	$358,000

Project Sponsor	Description	Funding
Pinellas Suncoast Transit Authority, Florida	For the Paratransit Mobility on Demand Demonstration, a set of partnerships with a taxi company, a paratransit service and a car-sharing company to develop a model to provide more cost-effective on-demand door-to-door paratransit service. The project will feature a central dispatch software that provides users with a selection of transportation service providers based on an estimated time of pickup, available payment types, and physical limitations.	$500,000
Chicago Transit Authority	A project that will incorporate the local bike sharing company, Divvy, a 580-station bike share service, into CTA's existing transit trip planning app so users can identify the availability of bikes or docking stations near their transit stops, and pay for bike rentals.	$400,000
Tri-County Metropolitan Transportation District, Oregon	An Open Trip Planner Share Use Mobility project that will create a platform integrating transit and shared-use mobility options. TriMet will build on its existing trip planning app to incorporate shared use mobility options and more sophisticated functionality and interfaces, including data sharing for shared-use mobility providers. By integrating data, the project will allow users to plan trips that address first/last mile issues while traveling by transit.	$678,000
Dallas Area Rapid Transit	A project that integrates ride-sharing services into its GoPass ticketing app to solve first and last mile issues. This project will combine traveler applications to create an integrated, multimodal application that leverages ride-sharing services. The project will improve ease of access to DART stations, particularly in non-walkable areas not well served by transit.	$1,204,000
Vermont Agency of Transportation	A statewide transit trip planner that will enable flex-route, hail-a-ride, and other non-fixed-route services to be incorporated in mobility apps. The online trip planner for both fixed and flexible transit services particularly benefits non-traditional rural transit system users, allowing universal access to transit information, including to people with disabilities.	$480,000
Pierce County Public Transportation Benefit Area Corporation	The Limited Access Connections project, an initiative connecting Pierce Transit local service, Sound Transit/Sounder regional service, and local ride-share companies in order to increase regional transit use. By providing first/last mile service in and between traditional zones, guaranteed rides home, and rides to park-and-ride lots, the project will extend service hours and provide access to transit for riders who have limited transit options.	$205,922

Source: Federal Transit Administration

Endnotes

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