

Beyond the Swipe: Principles for the New MTA Fare Payment System

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The MTA has a once-in-a-generation opportunity to use new fare payment technology to greatly improve service. It has requested proposals for a contactless, “open loop,” or non-proprietary fare payment system that allows riders to use their phones or credit cards as transit passes to directly enter the subway or bus. While this new technology can improve customer convenience and transit performance, it also can support new fare policies and structures that would have a far greater impact on bus and subway service. **To fully realize the benefits of this investment in new fare payment technology and start a discussion of fare policies, RPA suggests the following six principles for a new fare payment system.**

Six principles for a new fare payment system

1 Speed Up Buses

Our buses are slow and unreliable. To speed boarding and alighting throughout the system, the MTA should install the new fare payment system on buses first.

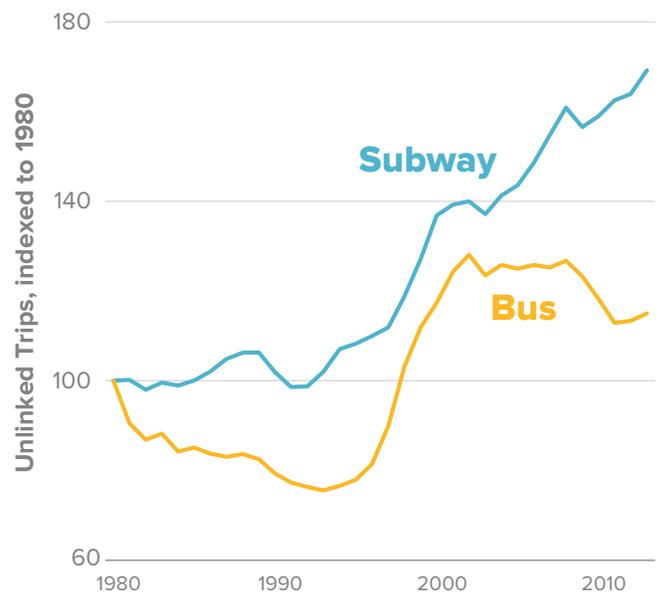
New York City bus ridership has been in decline, falling 10% in the past 10 years. While congestion, lack of priority treatments and stopping patterns are partially to blame, extensive dwell times caused by the queue of riders entering at the front door to pay their fare are a big reason for the drop-off. In an attempt to address this problem, the MTA and NYCDOT launched the Select Bus Service, which installed off-board fare payment machines and deployed fare enforcement officers, allowing riders to enter the buses using all doors. The SBS program improved travel times by 15%-25%. NYCDOT quantified that bus boardings and alighting typically accounts for 40% of the overall travel time, indicating that the implementation of off-board fare payment was a major driver of the travel time savings experienced by SBS riders. But installing and maintaining off-board fare payment equipment is expensive, costing an estimated \$75,000

per stop on average. With more than 16,000 stops in the system, it would cost New York City and the MTA more than \$1 billion to implement off-board fare collection system-wide using this technology.

Expediting the installation of the new fare payment system on buses is a far better option. The new system will provide a similar level of performance as off-board and still allow for riders to enter using all doors. On lower demand routes, validating reader devices should be installed on posts inside the bus. On routes with higher demand, validating devices also could be placed at stops curbside. A critical component of this program will be to equip fare enforcement officers with wireless validating devices so they can scan passengers’ cards or devices to ensure they paid their fare.

Falling Behind

MTA Bus and Subway Ridership, 1980-2013



Sources: MTA; RPA

Background

The MTA has released a request for proposals for a new fare payment system to replace the outmoded MetroCard. The new fare payment system will shift the MTA away from its current role as the distributor of fare cards and passes and would enable most people to directly access the transit system with their personal credit/bank cards or mobile devices. This change could offer significant costs savings, allowing the MTA to dramatically reduce the number of ticket vending machines and the associated high costs of servicing them, including maintenance and armed security. This is a popular technology that other transit agencies around the globe are transitioning to and one that the MTA piloted along with NJTransit and PANYNJ several years ago. RPA has conducted extensive research on fare collection technologies and the opportunities for more equitable and flexible fare policies, published in a [white paper](#) for the Transit Leadership Summit.

The transition the MTA underwent when moving to the MetroCard demonstrates the possibilities for policy changes that benefit riders. The changeover from tokens to magnetic strip cards in the mid-1990s allowed the MTA to create different fare types that weren't limited to just the cash value but also to specified time period and to use the pass to allow for free transfers between subways and buses. These new capabilities dramatically changed how riders used transit. For example, the introduction of a 30-day pass encouraged greater use of the transit system for discretionary trips and was one of the driving factors in a large gain in off-peak ridership. Since the introduction of the monthly unlimited in 1998, weekday ridership has increased by 43%, much of this in the off-peak and overnight periods. Weekend ridership has jumped 70%.



A conductor collects tickets on a Metro-North train

Photo: MTA / Patrick Cashin

2 Reduce Fare Evasion by Electronically Enforcing Payment of Fares

The MTA's new fare payment system must support handheld, wireless fare-validation scanners to read contactless fare cards and other payment devices. This critical tool will allow the MTA to deploy fare enforcement officers throughout the system – on buses, in the subway and on commuter rail trains. Fare-validation scanners typically require a wireless/cellular connection to update “hot lists” (fraudulent or blacklisted accounts) and communicate with the back office to pull account information. They are capable of working offline for short periods of time using hot lists and other local validation techniques for credit cards, such as the expiration date, which would allow them to function when used in places with no network coverage such as subway cars.

3 Reduce Crowding and Congestion

The new fare payment system should be used to help reduce crowding by pairing it with a variable pricing mechanism intended to alter behavior caused by delays in service or major events. To persuade passengers to divert to a less-crowded subway line or the bus, the MTA could offer a discount to customers in the form of additional trips, reduced fare or a time bonus. For example, the MTA could provide a discount for riders to use the Long Island Rail Road to get to a Mets game at CitiField in an effort to reduce crowding on the #7 subway line. There also could be potential to provide discounts to encourage greater use of the subway lines at Herald Square or nearby bus routes (M20, M4, M5 and Q32) for big events at Madison Square Garden, in order to reduce congestion on the 1,2,3,A,C and E lines. This real-time operational awareness will be possible as the MTA deploys wireless internet in all stations along with other sensing services, and as the agency installs central monitoring on the Division B (lettered lines) and communications-based train control.



Priority access at Hong Kong MTR station
 Photo: Richard Barone

4 Make the Subway More Accessible

The MTA should introduce new fare gates as part of the upgrade to improve access for parents with children, riders with luggage/packages, the elderly and the disabled. The authority should remove all high entrance/exit turnstiles, or HEETS - the floor-to-ceiling metal revolving gates - and replace them with high-capacity turnstiles used elsewhere in the system. The MTA also should install more modern and accessible fare gates at busy main entrances. With the removal of token booths and the reassignment of their clerks, the rationale no longer exists for more secure gates to prevent fare evasion at unstaffed entrances. Furthermore, future station personnel likely will be roaming rather than assigned to a fixed post. These agents, coupled with the introduction of fare enforcement officers in the subway with remote validators, should deter fare evasion.

5 More Fare Options and Greater Affordability

The MTA's new fare payment system should offer a wider range of fare plans, including the possibility of a set lower fare for lower-income riders. The new fare payment system will be account-based. Fare type and value will be stored virtually rather than on the card itself, which is only used to identify the user. The account-based system will make it possible to introduce many different possibilities for fares and tiered passes. For example, the MTA could sell passes based on a certain number of trips, rather than on a dollar amount. The more trips purchased, the greater the discount received. Trip-based fares could be combined with another payment plan if the number of trips is surpassed.

The MTA also should explore adopting a lower fare for riders using local buses only. This approach, similar to one already adopted in London, would have the dual benefit of providing a more affordable option and encouraging riders to use the bus, which would help to reverse the decline in bus ridership.

The MTA also should consider adopting subsidized “social fare” policies, a set of discounts available to lower-income passengers that will be easier to deploy with new account-based fare technology. This would address the affordability and equity considerations that have historically depressed base fare prices. It's important that subsidies for these fares come from the state and city, and that they don't hurt the MTA's ability to maintain and upgrade the transit network.

Account-based fare payment and differentiated fares raise questions about equitable fare prices for some passengers, including those who want to buy a single-ride fare, passengers who lack bank accounts, infrequent travelers, and those taking unplanned trips. To comply with universal service obligations, the MTA will still need to provide a way for passengers to pay cash for their fare as an alternative to using bank cards, credit cards or mobile phones for payment.

6 Rethink Commuter Rail Fare Collection

The MTA should move from the paper-based ticketing system it uses today on the commuter railroads to an all-digital approach. This could take the form of fare gates at major stations and fare enforcement officers using hand-held fare readers at others.

