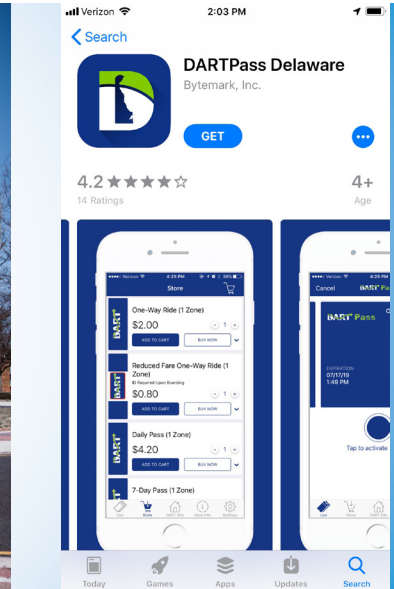




NASCIO 2019 Recognition Awards Nomination



State of Delaware
Department of Transportation
Department of Technology and Information

DART Transit Mobile App and Fare Modernization

Category: Government to Citizen
Project Initiated: Summer, 2017
Project Completed: (implementation-ongoing) - August, 2018

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Executive Summary



The mission of DART First State and Delaware Transit Corporation (DTC), an operating division of the Delaware Department of Transportation (DelDOT), is to design and provide the highest quality public transportation services that satisfy the needs of the customer and the community. DART/DTC aspire to be a premier transportation organization with accessible facilities and interconnected services incorporating state-of-the-art technologies. Our well-trained workforce, using clear communications and beneficial working partnerships, will enable us to connect people to their destinations

in an affordable, safe, and efficient manner. DelDOT Tech and Innovation and the Department of Technology and Information (DTI) provided technical, business analysis, and project support for this DART/DTC undertaking.

The DelDART/DTI/DTC cross-functional team effort began with a Sussex County resorts (aka Beach Bus) area pilot to better understand mobile ticketing so that the team could procure a solution most suitable to the ridership needs of Delaware Transit Corporation. The team produced an RFP with extensive requirements, attracting competitive vendors. A contract was awarded to Bytemark, who worked with Delaware Transit Corporation and DelDOT Tech and Innovation to produce a DART-branded mobile ticketing application for iOS and Android, allowing for customers to securely purchase a number of fare types using their credit card and smart phone. The project was highly successful in reducing boarding time for riders, minimizing bus driver involvement, thereby improving on-time performance of fixed route buses. Additionally, the project has also resulted in less cash on buses, and greater convenience to riders.

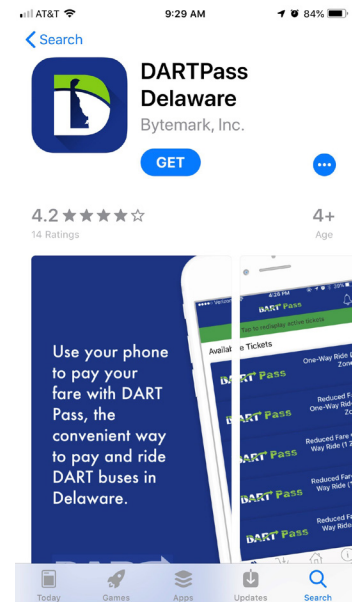


Exemplar

DART Pass provides innovative technology that leverages a transit rider's smart phone to enable purchase and wallet storage of bus tickets. The platform offers robust, highly available, secure, and PCI compliant credit card processing.

Further, the DART Pass app is integrated into the existing Delaware Department of Transportation (DelDOT) and DART mobile applications to provide a seamless user experience that allows riders to plan trips and explore the range of travel options based on real-time traffic and bus information personalized to their exact location.

Visual validation of mobile tickets improves boarding times significantly over cash or stored value card transactions, and improves on-time performance. Mobile ticketing is also largely fraud-proof, and its adoption reduces cash stored and carried on buses, along the associated security risk.



Concept

The Transit Mobile App and Fare System Modernization team includes staff from Delaware Department of Transportation (DelDOT), Department of Technology & Information (DTI) and DelDOT/DTC. The team's mission is to modernize and improve fare options for the riders of Delaware Transit Corporation to achieve the following:

- Provide greater convenience to riders by offering a secure smartphone solution for purchasing transit fare and boarding the bus.
- Reduce the amount of cash on buses, and eliminate situations where proper change cannot be provided.
- Reduce the time to board the bus, therefore improving on-time performance of buses.
- Reduce fraud risk associated with stored value cards.

The DART Pass Mobile Ticketing cross-functional team effort began with an initial pilot. In the summer of 2017, the Sussex County resorts (aka Beach Bus) area was selected as a pilot for mobile ticketing. The goal of the pilot was to better understand mobile ticketing so that the team could procure a solution most suitable to the ridership needs of Delaware Transit Corporation. The process used to define root causes and/or opportunities for improvement involved piloting a mobile ticketing solution and analyzing results, reaching out to other transit entities on their experiences and best practices, and also soliciting rider and operator feedback. The pilot ended at the close of Resorts service in September. While limited in scale, it did provide ample lessons learned and further inputs to a more robust RFP to achieve this goal.

The team was subsequently able to produce an RFP #18-011, titled Transit Mobile App and Fare System Modernization, which was released and awarded, with product delivery occurring in 2018. With extensive requirements, the team was able to select from a number of competitive vendors. The result was an awarded contract to Bytemark, who would work with Delaware Transit Corporation and DelDOT/DTI Tech and Innovation staff. The team initiated the implementation phase in March of 2018 after negotiating contract and pricing terms most suitable to the State of Delaware. The goal was to produce a DART-branded mobile ticketing application for iOS and

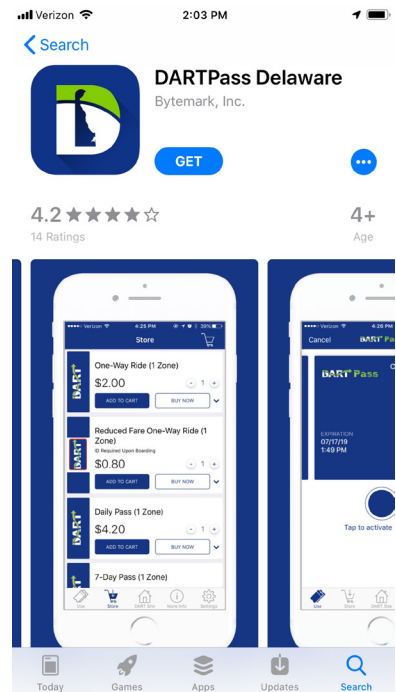
Android, allowing for customers to securely purchase the range of fares available via DART Pass statewide. These include one-way rides, daily passes, weekly passes, 30-day passes, reduced fare passes, and employee passes.

The initial pilot process had helped to reveal all internal and possible external stakeholders. When the project itself commenced, the team had a good idea of what to expect as a result. Operational readiness was identified as a possible point of resistance in the beginning, and the team countered it through frequent, proactive engagement with the Operations team. The official launch of the DART Pass Mobile Ticketing Application occurred in early August of 2018.



The DeIDOT app is available free to download for riders who have Apple and Android devices. After setting up an account with a credit or debit card, riders purchase bus tickets by launching DART Pass under the Transit icon, and selecting the fare type from a single ride to a 30-day pass.

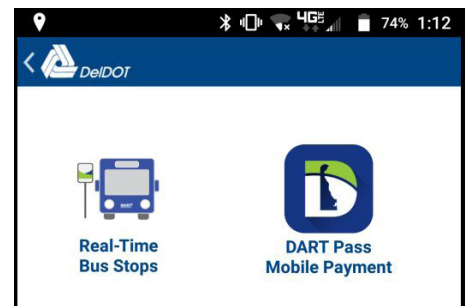
Then the ticket has to be activated and a pop-up message appears with an expiration date. Once purchased, a live Internet or WiFi connection is not needed: the purchased fare is stored locally on the user's device. When boarding the bus, the rider confirms the activation, shows the bus driver, and taps the screen, showing a moving green image.



Significance

As of 5/15/19, since go live in early August of 2018, the platform has sold more than 107,000 tickets statewide, and served more than 5,600 unique riders. The DART Pass effort received a 2019 Governor's Team Excellence Commitment Award, recognizing the team for their commitment, effort, and growing use of quality improvement techniques. This cross-functional team carried out the implementation of a new mobile fare payment option for DART riders called DART Pass. This DART-branded mobile ticketing application allows customers to securely purchase a number of fare types using their credit card and smartphone.

The fare modernization effort, like many others, had boundaries that were budgetary, resource, and time-based. The team did proceed under the assumption (formed from analysis) that cost savings would be realized with an overall strategy of effectively outsourcing payment processing, as opposed to building highly secure and available PCI compliant credit card processing functionality internally. Instead the DeIDOT Tech and Innovation Mobile App team was able to deep link the new application into the new DART app and the DeIDOT app, creating a seamless user experience. The team also conversely decided to utilize internal development resources to build other pieces of functionality offered by the vendor, because estimate analysis revealed internal development was a more cost effective approach. The result was a new DART app, encompassing real-time bus tracking, multi-modal trip planning, and other features more

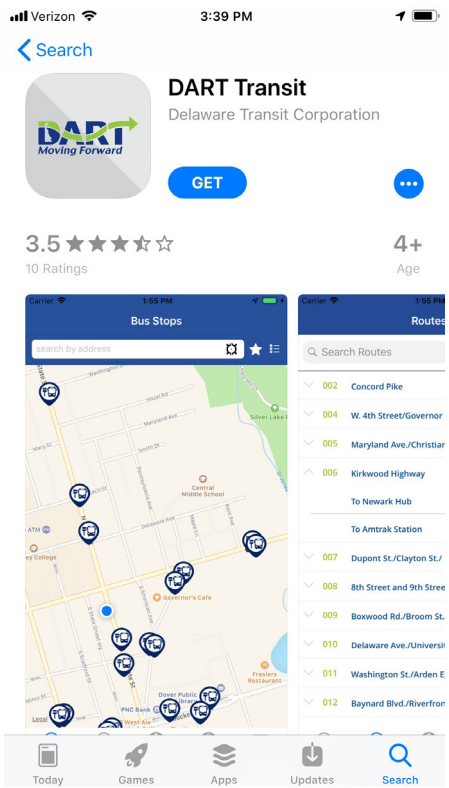


effectively built with internal development. Vendor performance at several times became a project risk, but mitigation was achieved through management intervention. The interlocked application approach also presented risk, but the risk was reduced through proper project planning and estimation.

The project was highly successful in reducing boarding time for riders, improving on-time performance on fixed routes, and enhancing the customer experience. It is lauded for providing a popular, convenient service to the riders of Delaware Transit Corporation.

The DART Pass is linked with the DeIDOT Transit app, also available for mobile. This app has real-time bus information, along with other complementary tools, such as trip planning to enable riders to get the most out of the DART transit system.

Since then, team has commenced a subsequent phase to add validator hardware to buses, to continue to modernize fare offerings, reduce cash on buses, and reduce fraud risk associated with stored value cards.



Impact

Key stakeholders include Delaware Transit and DeIDOT leadership, Delaware Transit Operations (including bus drivers), and many members of the team due to their day-to-day responsibilities for fare administration, ticketing stores, and general fare production support. These stakeholders report that they benefit from greater customer satisfaction provided, increased ridership and revenue.

Delaware as a whole benefits from reductions in traffic corresponding with the aforementioned increased ridership. Delaware Transit Corporation riders benefit from having a convenient, secure way to purchase tickets and ride the bus. Customers also benefit from faster boarding and improved on-time performance of the transit service.

Roll-out of the mobile ticketing solution provided the secondary benefit of improved customer perception of Delaware Transit Corporation. A Spanish language version was released at the beginning of May 2019, but the app also supports Dutch, Polish, and Vietnamese. Family Sharing on iOS allows up to six family members to share the app. Numerous riders have commended DTC for providing such an innovative solution.

...the roll out of our Mobile Fare Payment App has been great. It streamlines our boarding process, which in turn increases our on time performance. Passengers simply show us their fare on their mobile device as they board. It takes a couple of seconds for the driver to visually verify the fare, press one button on the fare box and that concludes the collocation process. In many cases it's become a fluid motion that does not require the passengers to stop at the fare box.

William D. Webb
DTC Fixed Route Operator