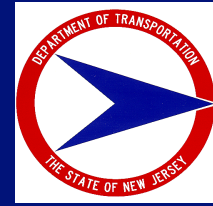# New Jersey Department of Transportation
Bureau of Research
Technical Brief

MyTix: NJ TRANSIT's Mobile Ticketing Application

This research project provides evaluation of the mobile ticketing application (MyTix) for NJ TRANSIT. The app was evaluated in field, and its large-scale use in the whole NJ TRANSIT commuter rail system was analyzed. Overall, the development and use of MyTix was a great success with the gradual improvement on the identified deployment issues by the research team.

Background

NJ TRANSIT's 3- to 7-year strategic plan emphasizes modernizing its daily operations. Mobile phone-based ticketing is the focus of this new plan. Mobile ticketing allows NJ TRANSIT to serve their customers quickly while reducing bottlenecks in ticketing areas. Other payment methods were also considered, yet mobile ticketing became the choice due to a recent NJ TRANSIT customer satisfaction survey that found 99% of rail and bus customers use cell phones and more than 50% owned smart phones. Therefore, it was important to determine if crew members could sufficiently adopt the new technology while also monitoring customers' reactions to the new system.

Research Objectives and Approach

The main research objectives of the project were to assist NJ TRANSIT in the selection and demonstration of a commuter rail electronic fare technology; and conduct an independent assessment of the selected technology in terms of its effectiveness and issues. The existing technologies and lessons learned from other agencies were reviewed and summarized. Then a demonstration / evaluation plan was developed. The use of the selected technology was assessed in laboratory as well as in a number of rail lines by the research team. The user experience and feedback were collected and analyzed.

Findings

A comprehensive literature review was supplemented by interviews with various transit agencies to achieve a thorough understanding of the state-of-practice in electronic ticketing, with an emphasis on smart phone based mobile ticketing applications. To evaluate this new technology, the research team conducted laboratory usability tests as well as field tests. Usage data were also analyzed to better understand major and minor problems before proposing suggestions and reaching statistical conclusions.
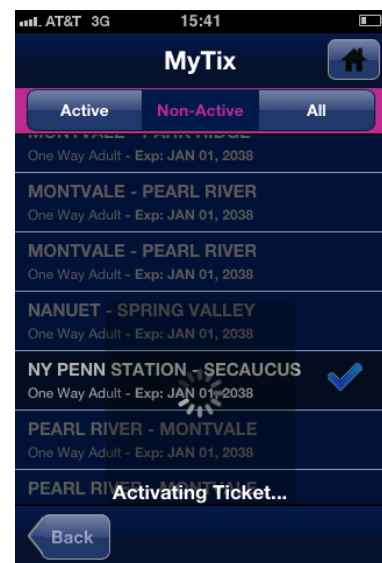
Through the project, it was found that:

- Carefully designed and administered laboratory evaluations of the MyTix app by the research team prior to its actual deployment were extremely useful in identifying and then fixing issues such as freezing screens and registration errors.

- The overall usability scores of the MyTix app were well above the literature's accepted usability scale of 68.

- Similar to the lab tests, field evaluation tests conducted by the research team members were instrumental in identifying some of the issues that were immediately addressed by NJ Transit. Among these are the field tests on Pascack Valley Line and Main/Bergen Line that found that scanning at the fare gates was an issue as well as the cellular network signal failure as another important problem in some of the stations.

- The adoption rate of the MyTix app sharply increased as the app was launched to the whole commuter rail network.

- Overall, the project was a remarkable collaborative success between University researchers and NJ Transit from its inception to the final field deployment. The use of the MyTix app saves commuters' time during ticket purchases and helps them avoid surcharges when purchasing tickets on-board.

For More Information Contact:

NJDOT Project Manager:	Daniel LiSanti
	New Jersey Department of Transportation
	Daniel.LiSanti@dot.nj.gov
Principal Investigator (s):	Hani Nassif / Kaan Ozbay
	Rutgers University / New York University
	Telephone number: 848-445-4414 / 646-997-0552
	E-mail: nassif@rci.rutgers.edu / kaan.ozbay@nyu.edu

A final report is available online at: http://www.state.nj.us/transportation/refdata/research/. If you would like a copy of the full report, send an e-mail to: Research.Bureau@dot.state.nj.us.

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