Transit Cooperative Research Project Update

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Transit Cooperative Research Program Project A-1 Fare Policies, Structures, and Technologies

This study is part of the new Transit Cooperative Research Program (TCRP) being administered by the Transportation Research Board. As you may know, problem statements developed by a number of sources, including TRB Committees, have provided the basis for the first set of research projects for the TCRP. This project—Fare Policies, Structures, and Technologies—represents the combination of numerous research issues and problem statements, including several identified by the TRB Committee on Fares and Marketing.

Joseph Simonetti, from the Chicago Transit Authority, is the Panel Chair for the project. The research team on the study is comprised of Multisystems, Inc., J. W. Leas & Associates, R. L. Oram & Associates, and Applied Systems Institute. I would like to review the main elements of the study and the current status of different activities. Also, I hope we will have the opportunity over the course of the Workshop to discuss ideas and issues you would like to see addressed in the project.

The study is very broad in scope. It is based on the realization that transit agencies currently use a wide range of fare policies and structures in response to fiscal constraints, operating needs, and the changing demands of the market. Further, new approaches to fare collection and media distribution are becoming available through the application of advanced technologies. At present, there appears to be little systematic evaluation of the relationships among fare policies, fare structures, and emerging fare collection and distribution technologies.

One of the major purposes of the project is to examine and evaluate how fare policy objectives can be addressed through current and emerging practices and technologies. This should provide transit agencies and other interested groups with a better understanding of the costs, benefits, and trade-offs in adapting evolving technologies to address local needs and conditions. Thus, the main objective of the research study is to provide guidance for all sizes of transit agencies in evaluating appropriate fare structures and technologies and making fare policy decisions.

The project is divided into four phases. The first phase will provide a state-of-the-art review of current practices and develop a framework and methodology for evaluating the interrelationships among fare policies, structures, and technologies. A preliminary analysis and evaluation will also be conducted in the first phase using this framework and methodology. An interim report will be prepared detailing the results from the first phase.

The project was just initiated a few months ago. It is scheduled to be accomplished over a 27 month time period, with completion in June of 1995. Phase I of the project is currently underway. Information from members of the research team, relevant literature, industry databases, and discussions with transit professionals are all being used to identify the current state-of-the-art practices related to fare policies, fare structures, and fare collection and distribution techniques. The results from this will be used to develop and apply a framework and methodology for analyzing and evaluating the interrelationships among these three parameters.

A variety of fare policy issues have been identified already from the preliminary review. As you know, transit agencies currently utilize a wide range of fare policy goals. Fare policies often attempt to address customer-related, financial, management-related, and political issues. The importance of these goals and concerns vary between systems in response to local needs and issues. Further, fare policies may change over time in response to changing priorities. In addition, many fare-related goals are competing and resolving conflicts among goals is not easy.

Phase I will also examine the generic types of fare structures being used throughout the country. Fare structures currently in use include flat fares, consumer-based fares, distanced-based fares, and service-based fares. Pre-paid fare options are currently very popular. According to the American Public Transit Association (APTA), 75 percent of the systems, including 85 percent of the rail systems, offer passes. Further, 45 percent of the reporting transit systems offer discounted tickets or tokens. Fare differentials based on time of day and distance appear to be less common, with 37 percent of the systems reporting the use of distance-based fares and only 5 percent utilizing time-of-day differentials.

Fare payment methods are also being examined in the first phase. Current fare media and payment methods include cash, tokens, paper tickets or time-based passes, magnetic cards, smart cards or memory cards, and credit or debit cards. The type of fare media used is often related to the fare collection strategy, the type of fare structure, and the policy goals. The fare collection and media distribution strategies are also being documented. A summary of current techniques is being compiled.

The next activity in the first phase is to develop an evaluation framework and methodology. This includes the identification of the key decision points and the questions that should be addressed in making fare-related decisions. Three generic approaches to fare-related decision-making have been identified at this point. One is a policy approach, one is a technology-driven approach, and the third is a service-oriented approach.

The study is beginning to examine the development of the framework and methodology. This is one area we would like to get feedback on from the participants at this Workshop. The nature of the interrelationships is very complex and developing a practical structure that can be applied by a variety of operators will be a challenging task. This portion of the first phase will also identify the advantages and disadvantages of different technologies, develop possible evaluation criteria appropriate for different sized transit systems, and produce evaluation matrices to help analyze how well alternative fare structures and technologies address various policy goals. Further, it is anticipated that the study will identify and rank appropriate combinations of fare structures, fare media, collection strategies, and equipment by different sizes of transit systems and different modes.

The first phase is scheduled to take six months. A revised work program will be developed and submitted to the Panel at the end of Phase I. Based on approval from the Panel and authorization from TRB, the next phases will then be initiated. At this point, it is anticipated that a case study approach will be used in Phase II to conduct a detailed analysis and evaluation of the interrelationships among fare policies, structures, and technologies. The case studies will be selected based on systems that either have made or are planning to make significant fare-related changes. The case studies will address a range of system sizes and modes, fare structures, and technologies. A cross-cutting analysis of the case study results will also be conducted to evaluate the relative advantages and disadvantages, the costs and benefits, and any additional issues associated with different combinations of fare structures and technologies.

Phase III will focus on fare-related technology developments and the potential application of emerging technologies from other fields to public transit. Key trends will be identified and analyzed, and possible applications will be discussed. An interim report will be prepared documenting the results of this phase.

Phase IV will focus on the development of a set of procedures and guidelines for use in making decisions regarding fare policies, fare structures, and fare technologies. These will be designed to address the needs of a range of transit agencies and operators. Thus, the outcome of the project is intended to produce a practical set of guidelines for use by technical staff and decision makers. The final report, which will document all aspects of the study, will also be prepared in this phase.

Thank you again for the opportunity to present a brief summary of this very interesting and exciting research project. I would be happy to discuss the study further with you, and I welcome any comments or suggestions you might have on elements that should be examined in the study.