

Cost-Sharing Transportation Systems

ABSTRACT - A set of nascent industries focusing on cost-sharing transportation systems such as ridesharing/carsharing have recently emerged. These types of cost-sharing transportation systems are also being introduced in freight delivery through horizontal cooperation of their logistic systems to reduce costs and delay times. Horizontal cooperation achieved through pooling of freight transportation networks reduces total shipping costs, and alleviates the impact on traffic congestion. One major impediment for successful implementation of these types of transportation systems is the determination of the cost-share amount for each participant. The cost-sharing problem has largely been neglected in the literature and is the focus of this talk. One crucial component of a cost-sharing transportation system is the allocation of costs and/or savings to each participant in the system. Without a model to allocate costs and/or savings to each participant in the system, there is no basis to allocate the costs in a fair manner to the participants, thus making it less of an incentive to participate. In this talk, we give two examples of models, one for ridesharing and the other for freight consolidation, for determining the cost-share of each participant.



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SPEAKER BIO – Maged M. Dessouky is a Dean's Professor and Chair in the Daniel J. Epstein Department of Industrial and Systems Engineering. His research area is transportation system optimization where he has authored over 100 refereed publications. His paper "Optimal Slack Time for Schedule Based Transit Operations" was awarded the INFORMS Transportation Science and Logistics Best Paper Prize. He is a Fellow of IISE and serves as Associate Director of METRANS, a center focused on solving important urban transportation problems. He is currently area/associate editor of Transportation Research Part B: Methodological, IISE Transactions, and Computers and Industrial Engineering, on the editorial board of Transportation Research Part E: Logistics and Transportation Review, and previously served as area editor of the ACM Transactions of Modeling and Computer Simulation and associate editor of IEEE Transactions on Intelligent Transportation Systems. He received his Ph.D. in Industrial Engineering from the University of California, Berkeley, and M.S. and B.S. degrees from Purdue University.