Fostering Unassisted Off-hour Deliveries through the Creation of Trusted Vendor Program
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Extended abstract

Objectives and motivation
Economic growth and vitality is dependent upon a well-functioning urban freight system. But a side-effect of this freight system is the accompanying traffic congestion and pollution issues. Therefore, orchestrating freight activity in a manner that maximizes efficiency and minimizes negative externalities is essential to the quality of life of citizens. Off-hour deliveries (OHD) is a Traffic Demand Management (TDM) strategy that has been proven to satisfy the goals of maximizing efficiency within the network and minimizing negative externalities.

However, one major challenge for OHD implementation in the long term is the provision of cost effective incentives to promote OHD participation. Despite the benefits of OHD to the overall society, receivers - the key actor that decides on delivery time – are often unwilling to accept OHD as they see no direct benefit for their participation. In order to identify incentives that are effective, self-sustaining, and cost-effective to public agencies, there needs to be an analysis done to evaluate the effects of different incentives. This type of analysis was undertaken in the OHD implementation project in New York City which was led by Rensselaer Polytechnic Institute (RPI) and the New York City Department of Transportation (NYCDOT) with support from the United States Department of Transportation - Research and Innovation and Technology Administration (USDOT-RITA).

As part of the research the team conducted a behavioral survey about varying incentive both monetary and non-monetary and how they influence participation in OHD. The monetary incentives were a one-time monetary incentive and carrier discount and the non-monetary incentives were business support, public recognition (for participating in a sustainable strategy such as OHD), and having a trusted vendor. The rigorous econometric model was able to quantify the non-monetary incentives. The most important incentive that came out of the study was that of having a trusted vendor, which was found to be valued the highest by the responders with a subjective monetary value ranging from $1,741 to $36,538; this shows the importance given to this factor by some industry segments.

From these findings arose the idea of creating a trusted vendor program (TVP) which would essentially provide trusted vendors for companies without one which would assuage receivers’ concerns and increase their confidence in allowing vendors into their facilities to conduct OHD, minimizing the perceived risk of damage or theft. The TVP would vet the vendors and certify those that meet the requirements as vendors that will be able to conduct safe unassisted (unstaffed) off-hour deliveries (UOHD). This phenomena of a trusted vendor having a value to be able to influence receivers to switch to OHD is the catalyst of this research. The objective of this paper is to assess the attitudes of different industry sectors towards having a trusted vendor program (TVP) which will enable identification of industry sectors that are most receptive to the TVP.

General description
A survey conducted in 2014 further explored this concept of having a trusted vendor program and how it may influence participation in OHD. The survey included respondents from The survey asked about the likeliness of a receiver to participate in OHDs given that they have a vendor that has been certified by a reputable organization as a trusted vendor. The question posed to the respondents is as follows: “If one of your vendors is certified by a reputable organization to do deliveries in the night hours, how likely will you be to consider allowing that vendor to make deliveries at night without any of your staff present?” The response options to measure the likeliness were: Completely Likely; Very Likely; Neither Likely, nor Unlikely; Not Likely; and Completely Unlikely.

The research approach is to utilize behavioral modeling to analyze the responses collected to determine the acceptability of the program and the attitudes that varying industry sectors may have towards it. This research will add further insight into the previous findings that there is a monetary value that can be placed on having a trusted vendor and the effectiveness of formulation a trusted vendor program that is able to certify that a vendor can be trusted to perform OHDs which would minimizing the risk to the receiver’s business, influencing a switch ot OHD.

Results and conclusions
The initial analysis showed that of the 450 respondents to the survey, 438 of them provided a response to the question. Of those that responded, 6% had a positive response—completely likely (3%) and very likely (3%)—while an additional 5% where neutral. The remaining 89% responded negatively. As the overview of the data indicates the favorability of the program is low but this may be due to the newness of the concept. The research is still in progress; next steps include conducting the behavioral modeling techniques to the data and exploring the possible policy implication of the results.

References
- Holguín-Veras, J., et al., Integrative Freight Demand Management in the New York City Metropolitan Area: Implementation Phase. 2013, Rensselaer Polytechnic Institute, New York City Department of Transportation, Rutgers University.


**Keywords:** off-hour deliveries (OHD); traffic demand management (TDM); trusted vendor; econometric analysis.