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The New York City Off-Hour Delivery Project: Lessons for City Logistics

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Abstract

The paper identifies and discusses the fundamental tenets that should guide planning and implementation of City Logistics projects, and the chief lessons learned from the off-hours delivery project conducted in New York City.

Keywords: City logistics; urban freight policy; off-hour deliveries

1. Introduction

The New York City off-hour delivery (OHD) program provides an interesting example of multi-stakeholder cooperation between public and private sector partners, community advocates, and trade organizations. Large and complex, the project required stakeholder collaboration to fully achieve its goals. Begun as a small research project in 2002, the original idea was transitioned into practice because of its potential economic and environmental impacts. It is estimated that, if fully funded, the program could switch in excess of 20% of the congested day hours freight traffic deliveries to the off-hours (between 7PM and 6AM). The impacts would be tremendous: $150-$200

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million/year in economic benefits associated with travel time savings, productivity increases, and sizable pollution reductions (e.g., 20.9% of OHD leads to reductions of: 202.7 metric tons (t) of CO, 40t of HC, 11.8t of NO_x, and 69.9 kg of PM_{10}) (Holguín-Veras, Ozbay, Komhauser, Brom, Iyer, Yushimito et al., 2011b). Recognizing these significant impacts, the City of New York adopted OHD as part of its sustainability plan (City of New York, 2011), and the United States' Federal Highway Administration decided to create their own program to foster OHD, based on the concept pioneered in NYC (Federal Highway Administration, 2012).

The path to implementation began when the project demonstrated how it could benefit all stakeholders: citizens and bicyclists would enjoy enhanced quality of life with less interference from deliveries; the urban economy would be improved by lower delivery costs; carriers would benefit from increased productivity; receivers would enjoy increased reliability; day-hour travellers would experience faster travel speeds; and with the use of low noise truck technologies, local communities would not be impacted by night noise. The research conducted enabled a concept design that addressed the needs and concerns of all parties. This gave stakeholders confidence that the proponents had thoroughly considered and would have solutions for all key issues.

While the OHD project is now widely recognized as a success, the road to implementation was not smooth. At various stages, potential participants and stakeholders showed lack of interest, scepticism, and even hostility. At the outset, the prevailing attitude of most city agencies was that urban freight operations were a private sector activity; one that they "should not mess with." On the private sector side, most carriers were in favour of the project because of the lower costs, though they realized that nothing would happen without the approval of receivers. Receivers, on the other hand, were content with the status quo (regular-hour deliveries), and saw no need to change. The carriers, who stood to benefit, do not generate enough profits from OHD to compensate the receivers for their extra costs. Thus, the urban freight system (UFS) was locked in a sub-optimal solution. Without public sector incentives to receivers in exchange for their participation in OHD, no change was possible. The lack of any history of cooperation between the public and private sectors was another obstacle to change, with uncertainty on both sides about whether "the other side" would do what was necessary to jumpstart the program. The carriers were unsure of the public sector's commitment to offering incentives to the receivers, and how long lasting that commitment would be. Meanwhile, some in the public sector were unsure whether the incentives would have the intended effect, and whether such intervention was even warranted.

This paper discusses the lessons learned during the OHD project, and the important role cutting-edge research can play in defining new paradigms of UFS. It identifies the most effective paths to achieving the desired goals: building coalitions of agents-of-change involving both private and public sector partners; pilot-testing as an external validation for research concepts; and the importance of defining implementation pathways for promising concepts, while also accounting for the complex political realities of modern urban environments. These lessons are framed in the dual contexts of the fundamental tenets that should guide sustainability efforts, and the market conditions that influence UFS participants' behaviour.

The paper has five sections: Section 2 addresses the tenets that should guide efforts to improve UFS's social performance; Section 3 summarizes the key economic factors that influence UFS behaviour; Section 4 elucidates the top lessons learned from the OHD project; and Section 5 considers the question of transferability. The Conclusions section synthesizes the paper's chief findings.

2. Fundamental Tenets

This section discusses the chief principles that, in the opinion of the authors, should guide City Logistic efforts. Taken together, these tenets provide a solid foundation for research, policies and programs that seek to advance UFS sustainability, now and in the future.

2.1. The importance and behavior change to foster sustainability

The quest for sustainability is fundamentally one of behaviour change, both short- and long-term. Central to the effort is public sector policy, combined with proactive engagement of the private sector, to transform UFS operations (the short-term) and the strategic decisions of firms (the long-term), towards increased sustainability,