Production Planning & Control ›
The Management of Operations
Volume 27, 2016 - Issue 6: Smart Cities and Operations Management

Articles

Identifying design criteria for urban system ‘last-mile’ solutions – a multi-stakeholder perspective

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Pages 456-476 | Received 04 Aug 2015, Accepted 11 Dec 2015, Published online: 18 Apr 2016

Cite this article https://doi.org/10.1080/09537287.2016.1147099

Abstract

This study presents a novel approach to design and evaluate ‘last-mile’ solutions – encompassing the social and economic perspectives of key stakeholders. While urban system initiatives have been implemented in practice, theoretical gaps remain at the operational design level. A theoretical framework is developed, based on design criteria identified from a critical synthesis of supply chain and operations management literature, and ‘operationalised’ using an in-depth case study demonstrating implementation of a Consumer Choice Portal-Package Consolidation Centre solution, within a densely populated urban geography. Findings suggest that there is a need to re-define the role of institutional actors beyond that of the traditional governance task, to one of being able to facilitate performance outcomes. Similarly, industrial efficiency

dimensions need to be reorientated to include consumer participation, social considerations and multi-stakeholder service outcomes. Finally, implications for operations theory and practising managers in city logistics are highlighted, with suggested directions for future research.

Keywords:

‘Last-mile’ operations | urban systems | smart cities | evaluation criteria | stakeholder analysis | service supply networks design

Acknowledgement

The authors would like to acknowledge support from the UK Technology Strategy Board and the various stakeholders involved in this 'Informed Logistics' project.

Notes

1. Note: to illustrate material flows within the urban system ‘last-mile’, Tables 2–4 are organised in order to distinguish between freight transportation and ‘stations’ within the ‘last-mile’ value chain. For example, freight transportation includes ‘upstream logistics’ and ‘transportation to drop point’ by the logistics service provider and parcel ‘pick-up distance’ by the customer. ‘Stations’ within the last-mile value chain include the ‘transit-‘, ‘drop-‘ and ‘destination’ points. The pick-up distance may be zero, in the case of the destination point being the drop point.