

Analysis of the Diffusion Behavior of an Information and Communication Technology Platform for City Logistics

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Abstract : The concept of City Logistics (CL) has emerged to improve the impacts of last mile freight distribution in urban areas. In this paper, a System Dynamics (SD) model exploring the dynamics of the diffusion of a ICT platform for CL management across different populations is proposed. For the development of the model two sources have been used. On the one hand, the major diffusion variables and feedback loops are derived from a literature review of existing diffusion models. On the other hand, the parameters are represented by the value propositions delivered by the platform as a response to some of the users' needs. To extract the most important value propositions the Business Model Canvas approach has been used. Such approach in fact focuses on understanding how a company can create value for her target customers. These variables and parameters are thus translated into a SD diffusion model with three different populations namely municipalities, logistics service providers, and own account carriers. Results show that, the three populations under analysis fully adopt the platform within the simulation time frame, highlighting a strong demand by different stakeholders for CL projects aiming at carrying out more efficient urban logistics operations.

Keywords : city logistics, simulation, system dynamics, business model

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