

## **Digital Supply Chain in Industry 4.0**

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### **Abstract**

**Purpose:** Current supply chains have an accelerated life cycle and are in constant evolution; this evolution is driven by changes in the markets and emerging needs in the Fourth Industrial Revolution era. The purpose of this paper is to present a conceptual model that defines the essential components shaping the new Digital Supply Chains (DSCs) in the environment of Industry 4.0.

**Design/methodology/approach:** The scope of the present work is based on a conceptual approach and review of key literature concerning the evolution and transformation of logistics and Supply Chain Management (SCM) with the examination of 13 different conceptual models proposed and studied from 1989 to 2017.

**Findings:** The main components defined by the authors of the 13 models were studied in detail, and thus, a referential and systematic model that fuses the inherent concepts of SCM, together with the new technological trends, was formalized. Finally, the components of Industry 4.0 that impact DSC Management are described, and a conceptual model is proposed on the future of the interconnectivity between different DSCs, grouped in clusters to add value through the digital integration.

**Originality/value:** The model provides a novel and comprehensive overview of the components driving the nascent and current DSCs. This conceptual framework will further boost researchers in the exploration of knowledge regarding the variables and components presented, as well as the verification of the constructs.

**Keywords:** Industry 4.0, Supply Chain Management 4.0, Smart Factory, Cyber Physical Systems, Internet of Things, Cloud Computing, Cloud Robotics.