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Startups in the supply chain ecosystem: an organizing framework and research opportunities

August 2021 · International Journal of Physical Distribution & Logistics Management ahead-of-print(ahead-of-print)

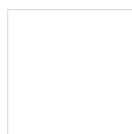
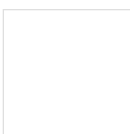
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Authors:

**Stephan M. Wagner**
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Abstract and Figures

Purpose Startups are associated with innovation, emerging technologies, digitalization and disruptive business models. This article aims to provide a better understanding of startups in logistics and supply chain management, organizes the contemporary discussion around startups in the supply chain ecosystem and outlines opportunities for future research. **Design/methodology/approach** This study draws on the prior supply chain, logistics and entrepreneurship literature and discusses key themes along the six identified startup issues. Furthermore, it proposes several perspectives and theories for grounding future research. **Findings** This study discusses the roles and success factors of startups in the supply chain ecosystem. It lays out how startups need to organize their own supply chains, how supply chain management (SCM) startups incubate and accelerate their ventures, the financing of SCM startups, as well as their positions as service providers, suppliers and customers. **Originality/value** This research brings together the sparse and dispersed literature on startups in the supply chain ecosystem, motivating scholars to increase the involvement of startups as important stakeholders in SCM research.

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ecosystem: an organizing framework and research opportunities

Stephan M. Wagner

*Department of Management, Technology, and Economics,
 Swiss Federal Institute of Technology Zurich, Zurich, Switzerland*

Abstract

Purpose – Startups are associated with innovation, emerging technologies, digitalization and disruptive business models. This article aims to provide a better understanding of startups in logistics and supply chain management, organizes the contemporary discussion around startups in the supply chain ecosystem and outlines opportunities for future research.

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Keywords Supply chain management, Logistics, Entrepreneurship, Startups, Organizing framework

Paper type Research paper

1. Introduction

Startups – innovative, young and fast-growing entrepreneurial firms [1] – are involved in supply chains and supply chain management (SCM) in three ways. *First*, as “the predominant goal of entrepreneurial ventures is to find customers” (Shankar and Shepherd, 2019, p. 18), startups are likely to become suppliers in established supply chains. They need to create a customer value proposition and diligently serve products and/or services to consumers or business customers (Wouters *et al.*, 2018). Therefore, established and larger firms might source products or services from startup suppliers. For example, the German railway company Deutsche Bahn established a relationship and recently closed a long-term frame contract with supplier KONUX, a startup that offers a hardware and software solution for the maintenance of railroad track switches based on industrial Internet of things (IIoT) devices and artificial intelligence (AI). In turn, product-based startups need to find suppliers who can manufacture their products beyond the prototype (Lucash, 2014), and to liaise with logistics service providers for product delivery and potential returns processing (DHL, 2020). Established firms might provide products or services to startups. For example, through its “Inno.Wafer” startup cooperation program, Infineon Technologies offers to become a supplier of semiconductor technology and other hardware and embedded software solutions for startups.

Second, supply chain resources and capabilities are fundamental for startup growth and survival (Amedofu *et al.*, 2019; Song *et al.*, 2008). Startups need functioning supply chains to satisfy their customers’ needs and to become successful in the marketplace. The supply chain

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... There are many arguments stating that the fundamental reason for a nascent startup's low survival rate is substantially due to a lack of access to resources. The limitations of smallness, access to finance, lack of market information, and immature management skills signal a lower survival rate for startups [2]. From the perspective of supply chain management, it is indeed overarching that the company's ability to efficiently manage the value-added process is crucial to its performance [3]. ...

... The nature of a small startup indicates a relatively limited demand for leasing requirements, resulting in less or no benefit from economic scale. Additionally, the potential agency-issue might encounter when searching for office renting as startup is much more easily to receive deception than mature firms [2]. One of the basic functions of an incubator is to shelter premature startups by providing an affordable turnkey office and sharing administrative services [18]. ...

... This mitigates the information asymmetry, as the interactive activities of the incubator are facilitating the situation where startups have difficulty identifying external parties and have limited channels to access critical information. Since it is known from Eisenhardt [5] that the agency problem could arise from the contractual relationship where the principal has difficulties monitoring the agent's behavior, the deception behavior can easily occur between startup and its business partner as mentioned in Wagner [2]. Incubator alleviates the startup's agency-cost involved in interaction with external parties by filtrating trustworthy processionals and networking connection. ...

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... The CMaaS based on a platform approach allows to dynamically manage the smart manufacturing and supply chain in real time, focusing on customer needs (Ghobakhloo, 2018; Xu et al., 2018; Hasan and Starly, 2020; Ivanov et al, 2022; Kusiak, 2023;). The CMFMC is represented mainly by SMEs distributed within its boundaries and focused on network collaboration within locally distributed open manufacturing (Ingaldi and Ulewicz, 2020; Dudek et al., 2019; Dudek et al., 2022; Wagner 2021; Kusiak, 2023). In these conditions, the use of a service-oriented network business model based on the CMaaS is relevant. ...

... In these conditions, the use of a service-oriented network business model based on the CMaaS is relevant. It is also important that such a business model can be part of a network of CMFMCs within a megapolis, which contributes to the expansion of the range of manufactured products and goods in order to better satisfy consumers , Wagner 2021

... The CMFMC is a structural unit of the smart sustainable CMFM within the megapolis. CMFMC is a territorial integrated network of production and service enterprises, which are located mainly in multi-floor buildings in the residential area of the megapolis and operate within the framework of the Industry 4.0, smart sustainable city concepts and its following key structural elements: Wagner, 2021; Ivanov et al., 2022). The CMFM as a key structural element of the CMFMC is a network of manufacturing enterprises located in multi-floor buildings of the cluster and operating within the framework of the CMaaS concept and interacting with other key elements of the cluster to meet the consumer's needs in innovative products and goods (Rauschecker et al., 2011; Ghobakhloo, 2018; Kusiak, 2019; Kusiak, , 2020; Kusiak, , 2023; Deja et al., 2021; Dudek et al., 2022). ...

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... In many industrial markets, suppliers can simply choose their customers , and buyers might have to compete for suppliers' resources. In this paper, we take the perspective of startups as buyers (Wagner, 2021) . Startups depend on their suppliers to pursue innovation (Song and Di Benedetto, 2008) and success

... Several authors have therefore called for more startup-supplier research. This call includes research into how startups could mobilize supplier resources (La Rocca et al., 2019b), which startup strategies to employ to involve suppliers in new product development (Bolumole et al., 2015), and how they could find and attract suppliers (Wagner, 2021)

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... An optimized supply chain can create employment opportunities (Salehi-Amiri et al., 2022). As supply chain activities expand and become more efficient, they create jobs across various stages, from production to distribution (Wagner, 2021) . This job creation not only contributes to economic growth but also directly impacts the livelihoods and financial security of individuals, further enhancing their welfare (Manzoor et al., 2019). ...

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entrepreneurial action. We assert that entrepreneurs regularly ignore SCM, which may be the determining factor in the viability of their business (Wagner, 2021), and that SCM impacts entrepreneurship at both the societal and the firm levels. To explain how SCM can directly impact a firm navigating the phases of entrepreneurship, we draw on research regarding the evolutionary perspective and routines (Nelson & Winter, 1982) to explicate how these routines manifest paths to the efficiency and flexibility entrepreneurial firms require. ...

Supply chain from start to finish: the implications of supply chain management for entrepreneurs

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... The last group of entities and organizations involved in activities managed and coordinated by WFP are enterprises and start-ups, which in practice implies the admission to the GLC and humanitarian logistics system not only of global concerns, but also economic entities from the small and medium-sized enterprise sector, including entities innovative, at the initial stage of designing a business concept. It is worth mentioning that on the initiative of the WFP, a program called the Innovation Accelerator was implemented, in which start-ups were sought for cooperation in order to protect and strengthen the potential of local food supply chains and distribute humanitarian aid among beneficiaries (Wagner, 2021 (Wagner, , p. 1146). ...

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... The government will play a significant role in facilitating the ecosystem that promotes these processes and technological solutions. Previous literature reports the genesis of multiple start-ups that will adopt intelligent technologies and help supply chains make decisions (Wagner, 2021). ...

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... Fourth, support flow intermediaries such as Minka-Dev or YSB can play a key role in creating inclusive and diverse supply chains by linking buyers with small-scale, diverse, and minority-owned suppliers. This area has many relevant research questions such as how intermediaries can enable focal firms to create sustainable value from business models and technologies of small enterprises, or how the relationships between focal firms and small enterprises as suppliers or customers can be managed (Wagner, 2021). ...

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... Most of these start-ups rely on business models that involve leveraging digital platforms, making use of the increasingly more digitized communication and distribution systems to connect global communities and providing access and shared knowledge, products and services that were previously unavailable (de Reuver et al., 2018; Spagnoletti et al., 2015; Tiwana et al., 2010; Wagner, 2021). The platforms permit collaborators to undertake a range of activities, forming entire ecosystems for value creation (Gawer, 2014; Magliocca et al., 2022). ...

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Supply chain management accelerators: Types, objectives, and key design features

August 2022 · Transportation Research Part E Logistics and Transportation Review

● Stephan M. Wagner · Alexander A. Fink · ● Maximilian Klöckner · Tobias Räder

Startups often lead the technological transformation of logistics and supply chain practices. To shed light on the engagement between established (logistics) firms and external startups, this study takes up the emerging collaboration vehicle of supply chain management (SCM) accelerators. In contrast to few previous studies investigating generic, cross-sector accelerators, this work examines the ... [\[Show full abstract\]](#)

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Chapter

Startups in the Logistics Sector: Value Propositions and Potential Impact

December 2022

● Stephan M. Wagner · ● Stefan Kurpjuweit

As a driving force of innovation and digitalization, startups have become important players in the logistics sector. Startups might be suppliers, partners, competitors, or acquisition targets in the eyes of established logistics service providers and shippers. Disregarding the role startups will play in the logistics sector, a better understanding of the phenomenon "logistics startups" will lead ... [\[Show full abstract\]](#)

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Startup Supplier Programs: A New Model for Managing Corporate-Startup Partnerships

April 2020 · California Management Review

● Stefan Kurpjuweit · ● Stephan M. Wagner

Collaborations between established firms and startups are increasingly considered an ingredient of corporate strategy. This article describes a startup collaboration model that has emerged in practice, a model that complements today's predominantly used engagement vehicles of corporate accelerators and corporate venture capital. Startup supplier programs are outside-in programs that enable firms ... [\[Show full abstract\]](#)

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Supply chain capabilities and new venture growth

February 2023 · International Journal of Logistics Research and Applications

● Stephan M. Wagner · Ingmar Zanger

We build on dynamic capability (DC) theory and apply inductive case study research to shed light on how new venture manufacturing firms develop and nurture supply chain (SC) capabilities. Our findings discern SC capabilities related to dimensions of DCs (sense, integrate, develop, reconfigure) and show how these SC capabilities evolve throughout new venture life cycle stages. We find that SC ... [\[Show full abstract\]](#)

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