

Living Labs as heaps of innovation: the blockchain case

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Purpose

Blockchain Technology (BCT) has so far generated a great deal of the proverbial ‘buzz’. The creation of decentralized systems, self-executing contracts and intelligent assets controlled over the internet is by some forecasted to lead to an influx of decentralised control over supply chains. Combined with innovative technologies (e.g. internet of things) BCT is expected to allow for improved information sharing, fostering trust and collaboration between companies, for the benefit of the entire supply chain.

Several BCT-focused initiatives and consortia in the logistics and supply chain management areas have been launched in recent years, such as TradeLens, Batavia, we.trade and Marco Polo. Besides these initiatives, new and established technology providers (including TradeIX, Centrifuge, and Tradeshift), have started using BCT in the same areas.

Academic efforts are equally plentiful. For example, Treiblmaier (2018) presents a framework for the development of BCT-based middle-range theories. Babich & Hilary (2019) highlight academic challenges in the field of operations and supply chain management and focus on the need to regulate and govern the use of BCT within supply chains. Wong et al. (2020) warns that small players might not have the means to invest in such technological advancements. Sternberg et al. (2020) analyse BCT adoption for provenance of products, highlighting how attention towards the topic has so far translated in a scarcity of empirical evidence. Rogerson and Parry (2020) recommends additional empirical evidence to be collected, with specific emphasis on longitudinal efforts.

Building on these articles, our objective is to provide additional empirical evidence on the pragmatic value of blockchain adoption in supply chains, projecting the experience of Spark!, an active Living Lab in the Netherlands that aims at fostering BCT adoption in this field. By doing, we aim at (a) expand the current view about existing theoretical perspectives on Living Lab (Dekkers, 2011) and (b) reflect on the role of researchers in generating actionable and yet rigorous knowledge (Martini et al., 2012) within the domain of Living Labs, building on recent calls for leading and concurrent pathways from theoretical work to impact generation (Voss, 2020).

Methodology

As anticipated, this study relies on the activities of Spark!, a Living Lab in the Netherlands focused developing use cases for adoption of blockchain in the context of logistics and supply chain management.

Within the context of Spark!, researchers perform activities through action research (Coughlan and Coughlan, 2002), actively participating and influencing the company processes and decisions, while at the same time stepping out of the system to obtain a broader perspective (Schoenherr et al., 2008). More specifically, we follow the ‘*action research cycle reloaded*’

proposed by Maestrini et al. (2016). The study specifically focuses on one of the case within Spark!, in which a large corporate joined the Lab to evaluate the potential for blockchain adoption in their supply chain.

Analysed case

The analysed case pertains to a food producer active in processing frozen food and distribute it to the horeca sector in Europe. Following the ‘preliminary’ part of the cycle proposed by Maestrini et al. (2016), the research team first identified the appropriate areas for action. These were summarised in two use cases: on the supplier side the management of supplier certifications, and on the buyer side temperature management for condition goods.

This first phase was followed by the main action research steps, which included session of data collection individually from all actors involved in the two use cases, consortium meeting to provide feedbacks on the data collected and discuss next steps, action planning and implementation. Data collection and the other steps focused on measuring organisational barriers, such as trust levels, information sharing and asset specificity, as well as technical requirements for the technological innovation object of the study.

Conclusions

Albeit still undergoing, our contribution has both theoretical and practical insights. Our theoretical contribution pertains to two fields: on one side, we build on Dekker (2011) by expanding on the useful theoretical perspectives on Living Labs, introducing action research and the theory of innovation diffusion. Secondly, through empirical data we provide further clarification on the ‘*action research cycle reloaded*’ (Maestrini et al., 2016). From a practical perspective, we elaborate on pragmatic insights generated from the analysed case in the field of blockchain adoption.

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