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A Framework of Blockchain Technology

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Abstract

With the introduction of Bitcoin by Nakamoto (2008), came a key underlying technology that holds great disruptive promise to many crucial industries: Blockchain. The nature of a decentralized, distributed ledger will truly change the way we currently trade and interact through its clear transparency and high integrity (Casey & Vigna, 2018; Sullivan, 2015). Based on trust, Blockchain allows various parties to be involved in transacting with each other without the need to know each other (Botsman, 2017; Deloitte, 2016; Drescher, 2017; Mauri, 2017). The purpose of this paper is to provide a framework for Blockchain by focusing on how Blockchain technology can be integrated and implemented into real world applications (Harvey, Moorman & Toledo, 2018; Iansiti & Lakhani, 2017). As this secure, robust and flexible technology can be applied to numerous industries with a plethora of applications and use cases, Blockchain for business can tremendously save costs, save time and mitigate risk (Gupta, 2017; Mauri, 2017). In particular, we will explore how the premise of provenance in traceability and tractability will affect our supply chains of today and tomorrow (Carson, Romanelli, Walsh, & Zhumaev, 2018; Casey & Wong, 2017; Yiannas, 2018). We will also discuss the technological limitations, the regulations and the social challenges that revolve around Blockchain and its adoption (Commission Nationale de l'Informatique et des Libertés, 2018; Croman, Decker, Eyal, Gencer, Juels, Kosba, Miller, Saxena, Shi, Sirer, Song, & Wattenhofer, 2016; Iansiti & Lakhani, 2017; Global Legal Research Center, 2018). In addition, we aimed to examine the interaction of between Blockchain and various relevant and pertinent emerging technologies such as artificial intelligence, quantum computing, 5G, IoT and among others (Carmichael & Lakhani, 2017; Loukides & Lorica, 2018). Further, we identify the conceivable implications – such as the effect on the workforce, among other concerns – both positive and negative, and how these would

affect us in both the short term and the long term (Schwartz, Wooll, & Monahan, 2019). Lastly, we investigate how and where Blockchain would evolve in the near and far future.

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