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Title

Blockchain-as-a-Service for Business Process Management: Survey and Challenges (Viriyasitavat et al. (2023))

Abstract

Blockchain technology (BCT) has brought a paradigm shift to Business Process Management (BPM). BCT provides a trusted decentralized infrastructure to secure data and process executions using distributed ledgers and smart contract to manage complex business processes. Numerous efforts have been made to exploit BCT in supporting dynamic and trusted collaborations of business processes. This paper aims to understand recent BCT development for its BPM applications and identify the limitations and challenges for further development via a systematic literature review (SLR). It is found that numerous works have reported using BCT as technical solutions to fulfill some traditional BPM functions. This paper is distinguished from existing works, especially several relevant surveys in the sense that (1) the impact of using BCT in BPM is thoroughly explored to identify new constraints and challenges explicitly brought by blockchains; (2) the requirements for Business Process Compliance (BPC) are firstly analyzed in detail. Note that BPC is to assure the adherence of business processes to pre-defined policies, standards, specifications, regulations, and laws when business processes are executed. To fill the gaps of BCT applications in these two aspects, Blockchain-as-aService (BCaaS) is adopted in business process architecture, and the trends of BCT developments are identified accordingly.

Keywords

Blockchain Technology, Blockchain-as-a-services, Business Process Compliance, Business Process Management, Business Processes, Smart Contracts, Systematic Literature Review

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Reference

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Viriyasitavat, Wattana, Li Da Xu, Gaurav Dhiman, and Zhuming Bi. 2023. “Blockchain-as-a-Service for Business Process Management: Survey and Challenges.” *IEEE Trans. Serv. Comput.* 16 (3): 2299–2314. https://doi.org/10.1109/TSC.2022.3199232.