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Paper title: On the adoption of blockchain for business process monitoring

Keywords specific to the paper: Blockchain · Distributed ledger technology · Business process management · Software architectures · Business process monitoring

Summary of the main contributions:

Blockchain helps create environments of trust, particularly in business processes. On the one hand, it ensures data reliability since it immutably records process information. Secondly, unlike traditional approaches, it does not require the presence of a third party. What's more, blockchain-based smart contracts regulate the way in which data is stored, ensuring that it is collected at the right time and in the right way. Finally, blockchain enables transparency and traceability, creating trust in the execution of processes.

The adoption of blockchain in monitoring processes presents several challenges. Firstly, it is imperative to develop robust, blockchain-based monitoring platforms. This means designing efficient smart contracts, managing monitoring data and identifying reliable data sources.

It is also necessary to integrate on-chain events with external ones, to obtain reliable and complete logs.

Ensuring that blockchains are interoperable is imperative, particularly in business processes involving many players, each of whom may have their own blockchain. To avoid conflicts and inefficiencies, effective and fluid communication strategies must be developed.

Finally, transparency is a key challenge for blockchain adoption. Smart contracts must consider transparency and compliance verification. These enable real-time analysis of the state of the process and facilitate compliance by the parties involved.

Today, we can see how the world is approaching these blockchain integration challenges. Today, there are monitoring platforms dedicated to blockchain. They integrate functionalities such as real-time analysis, compliance verification, data collection and reporting.

Also, to meet the challenge of interoperability between blockchains, new strategies are facilitating communication and data exchange through standardized gateways and protocols.

Transparency and traceability have been enhanced using blockchain, thanks to smart contracts that enable processes to be verified and tracked, reinforcing trust and offering high visibility over activities.

Supported by a software application?

The paper mentions 2 software applications in a business process monitoring context:

Hyperledger fabric

How it works: this is an open source blockchain platform designed for enterprises. It enables the creation of permissioned and private blockchain networks. It offers a modular, flexible architecture for decentralized applications.

Application: It can be used in a wide range of sectors, including finance, healthcare, procurement, and logistics. The software can be used to create smart contracts, ensure data confidentiality, identity management or even the scalability of blockchain networks.

Corda enterprise

How it works: Corda Enterprise is a blockchain platform that meets the needs of businesses in terms of confidentiality, scalability, and security. It offers advanced functionalities for inter-stakeholder transactions and smart contract management.

Application: the platform is used to securely exchange data and values between companies. The platform can be used to create private and semi-private blockchain networks.