Utilizing Distributed Ledger Technologies (DLT) And Blockchain In Oil & Gas Industry To Unlock Potential Benefits

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Abstract

Objectives/Scope: Blockchain is an emerging technology in our current life; it provides efficient and secured solutions to almost every business. Blockchain can play a vital role in digital transformation, which is one of the most imperative goals that the oil and gas industry is trying to achieve. Blockchain solutions can significantly affect the oil and gas industry, the largest industry in the Kingdom. The purpose of adopting blockchain solutions is to boost operational excellence and enhance cyber security, thereby benefiting the industry as a whole.

Methods, Procedures, Process: The proposal is to establish a blockchain-based platform that will be used for several functions such as data management, contracts, and some supply chain and logistic operations. The platform will be used to digitalize and automate the contracts and secure data storage and sharing via the cloud. All employees will be able to access the platform; however, there will be certain permissions according to the employee’s position and duties. The workflow will be automated according to defined business rules, and processes can be tracked by the parties involved. The platform will also generate digital ID cards to replace physical ones. Contracts and payments will be digitalized and self-executed.

Results, Observations, Conclusions: The blockchain-based platform provides faster and more secure transactions, boosts and sustains operational efficiency, reduces dependency on third parties, and decreases the third parties’ associated risks. The platform will ensure secure data storage due to the proprieties of blockchain, cryptography, decentralization, and consensus. Moreover, digital contracts will provide clarity, speed up transactions, and ensure on-time payments. In addition, the reduction in dependency on third parties will cut costs as well as improve cyber security. Lastly, there will be an opportunity for continuous improvement and additions to the platform. A specialized team can be selected to continuously assess the platform, look for required additions, and implement the necessary updates.

Novel/Additive Information: The novelty of this paper is to provide the advantages of applying DLT to the oil and gas industry as a whole. The blockchain-based platform will enhance the overall efficiency, boost cyber security, and contribute to digital transformation of the industry.