Essay: Summarize what processes, challenges, benefits and strategies that should be considered for integrating blockchain in a commercial application that you choose.

For reference, the authors of the McKinsey article, Blockchain Beyond The Hype: What Is The Strategic Business Value, provided a quick summary of blockchain in healthcare. It focuses on the general benefits. Your analysis should also focus on the integration process requirements, performance challenges, the benefits, and strategies to be accepted in the market.

Blockchain technology was initially created to serve digital currency trade, however, different industry experts soon identified its potential in other fields. Not all industries can benefit from blockchain though, some can make their current processes more complicated and difficult to operate.

Before deciding for blockchain we have to analyze its benefits, challenges and implementation strategies.

Benefits

Real life applications have been growing in all industries and supply chain is one of those areas were interest has been increasing lately precisely because it creates value to customers, stakeholders and suppliers. Most of the benefits of integrating supply chain with blockchain are related to its tracking and integrity capabilities. Here are the most important ones[6]:

- increase transparency in documents and transactions: through blockchain, anyone in the supply chain can access real time information, generate reports and identify problems with total certainty.

- smart contracts can streamline payments: blockchain would act as a confirmation for the different stages downstream the supply chain.

- deters fraud and theft: by confirming provenance of products and knowing that documents can't be modified, fraud can be minimized.

In order to explore if a particular supply chain will benefit from blockchain, there are some questions that need to be answered first: Does tracking integrity is important in the supply chain? Is visibility and security of information critical? Would the implementation make processes more efficient? Would it bring benefits to all parties involved? Do smart contracts will facilitate interactions between parties?

Strategies

Strategies for implementing blockchain can be generalized for all industries[3].

1. Identify: A particular project has to be identified with clear benefits.

2. Plan: to avoid wasting time and resources, the project has to be carefully planned. Does the project require blockchain to be centralized/descentralized? Are we going to need smart contracts? Can we leverage from blockchain service providers or we really need to develop our own platform? Which internal and external policies do we need to create in order to implement it successfully?

3. Build: construction phase were all the rules are integrated to the platform. It is also important to test basic and normal cases.

4. Limited implementation: once the platform passed all the internal tests it has to be implemented in real operations. Scope has to be limited to a particular operation, with one specific supplier or a particular carrier.

5. Roll-out: once the system passed the limited implementation tests and no more issues had been found it is important to implement it in all the operations that were initially defined. It would be better if it is done in phases.

Challenges

One of the most obvious challenges for integrating blockchain in supply chains is volume and speed of transactions. Companies with complex supply chain like Walmart and Amazon, where they store and sell thousands of different skus, can't operate with limited amount of transactions per second that characterizes most of the decentralized blockchain platforms.

A second challenge that has to overcome is standardization. It is impossible for every supply chain to create basic principles and rules for reading and processing blockchains, there has to be a standard that is accepted across industries.

The third and most difficult challenge is related to cost. Since some supply chains require to process millions of products, it becomes infeasible to pay per transaction. This is one of the reasons why right now some of the most successful implementations in supply chain have to do with very expensive products such as diamonds.

Supply chain is an area of high volume and expectations, it is not easy to integrate it with blockchain but there are limitless rewards once it is done. Transparency, faster payments, visibility and integrity can be solved easily with blockchain.

There are challenges though, currently most platforms can process at the required speed, but with decentralized technologies it can be accomplished sooner than later.

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