



# Blockchain – Is The Mining Industry Ready for The Technology

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There is no doubt that industries today continue to integrate new technologies within their operations in the quest for reducing costs, increase efficiency and production.

The mining industry is not left behind. In particular, the current mining industry 4.0 is jampacked with digitalization of processes and automation, which not only help in increasing efficiency and production but also improve mine safety and safeguards the environment.

Among the new technologies that are available, industry experts believe that Blockchain technology will revolutionize and streamline processes such as procurement, traceability, tracking, and insurance.

As a result, the mining industry players continue to put effort in finding ways to utilize and implement blockchain technology in the processes within the mining chain.

However, not many quite understand how the technology works or the implications and challenges in implementing it — blockchain has been greatly overhyped and misunderstood.

Although it may take a few years for the

technology to be fully utilized in the extractive industry, it should not be ignored.

Rather, decision makers, researchers, and other stakeholders should prepare by learning and understanding the technology to avoid uninformed implementation.

# UNDERSTANDING BLOCKCHAIN TECHNOLOGY

Most of us became aware of blockchain technology after bitcoin became a mainstream few years back.

We understood that the technology was behind the digital currency but did not grasp how it really worked.

Buzzwords such as 'cryptography' and 'smart contracts' were all over the media but provided insignificant or standard definition of the technology.

Basically, blockchain is a digital ledger. In business, ledgers have existed thousands of years throughout human history.

They are used to record transactions and can be interpreted as bookkeeping.

Most governments and companies use third party organizations to record and secure their transactions such as banks to help in accountability and verification of the information recorded.

Therefore, blockchain technology works based on the book keeping principle but with a twist.

The technology allows peer-to-peer transactions to be recorded in a secure ledger that is shared by other computers within the network. In short, it is a decentralized ledger or digital record that requires no third party as it is public.

Each individual transaction is recorded cryptographically and stored in data units known as blocks. The validated blocks are automatically shared within the network making it impossible to change any information; therefore, making it extremely secured.

As transactions are carried out, blocks continue to build up forming a chain — Blockchain.

"The technology allows peer-to-peer transactions to be recorded in a secure ledger that is shared by other computers within the network"

#### APPLICATION CHALLENGES IN MINING IN-DUSTRY

Though blockchain technology offers transparent, secure, and real-time information sharing capabilities, it is critical to first focus on learning the technology itself before investing in implementing it.

#### 1. Data Credibility

While data uploaded in the network cannot be tampered with, it is vital to ensure that the uploaded information is true and correct.

The challenge exists in ensuring the credibility of data uploaded and may depend on a third party that is not immune to bias.

Therefore, connecting the off and on-chain worlds presents a hurdle and only organizations with highest credibility can be trusted with such a task.

For example, Ford cobalt Pilot project that aims at utilizing the blockchain technology, RCS Global is considered the right candidate to ensure credibility and accuracy of the data provided.

#### 2. Scalability

Blockchain technology lacks the capability of scaling well as the industry moves large amounts of data.

This brings a challenge between

decentralization, network performance and technology that often creates a challenge of whether it is feasible using blockchain considering the costs associated.

Will it bring more benefits than challenges?

#### 3. Privacy and security

Whereas the technology offers secured data sharing, there is a challenge for companies to adopt decentralized (public) or centralized (private) blockchain.

Decentralized blockchain offers more security but it is public.

This means that companies using this form of the technology may experience privacy issues that they would not like to share such as competitors and clients among others.

Conversely, centralized blockchain offers privacy but the security depends on the third party responsible for the blockchain functions.

This may increase operational costs.

#### 4. Inclusivity

Considering the artisanal and small-scale miners, there are concerns that using the technology may be detrimental for them.

Inclusivity may be a challenge as it is yet to be affordable for the ASM community and they

may bear the cost when middle companies start investing on the technology, which in turn will decrease their income.

#### POSSIBLE SOLUTIONS

- Whilst challenges still exist, several suggestions may help companies aiming to implement blockchain technology is their supply chain.
- Research and understand how blockchain works, costs associated with its implementation, how it will affect the organizational culture, and solutions associated with the technology.
- To prepare for the technology, organizations should approach it from an interdisciplinary perspective and with a log-term view.

The management should consider their organizational capabilities, philosophical paradigms, and psychological readiness to utilize the new technology.

- To fully understand blockchain, companies can start from the easiest strategy such as starting to use cryptocurrency in their purchases and salaries.
- Communicate to legislators and policy makers that policies may be created that will support shifting from the traditional business model to using blockchain.





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