Tokenizing Commodities

An Industry Analysis

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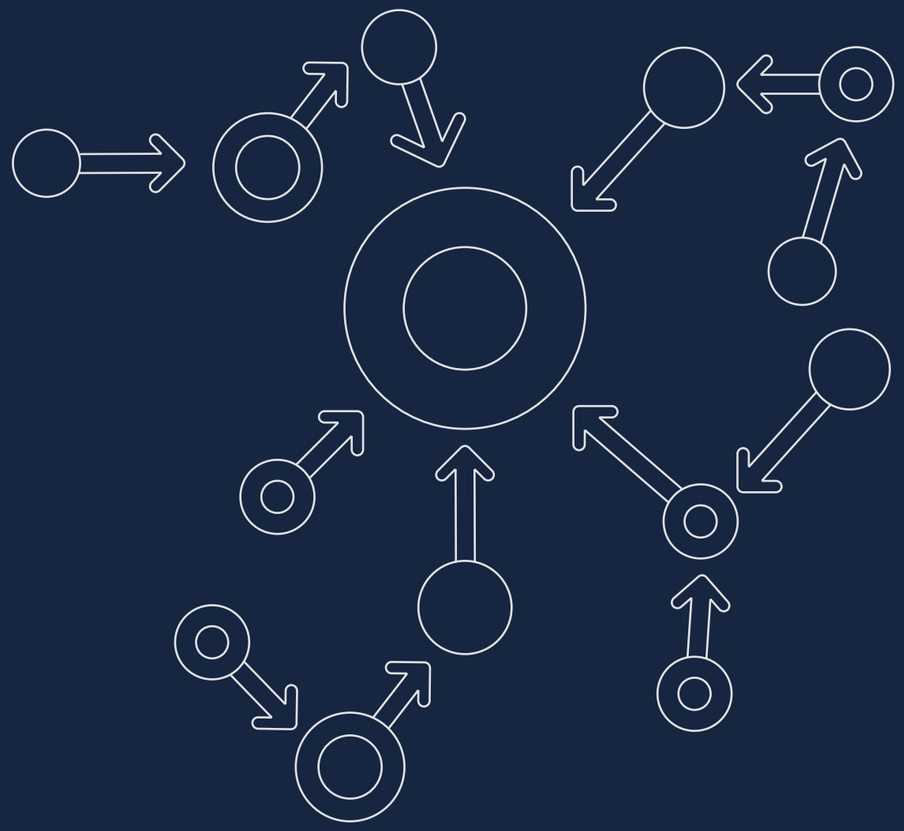
HARNESSING TRANSFORMATIVE POWER THROUGH PERMISSIONLESS INNOVATION.

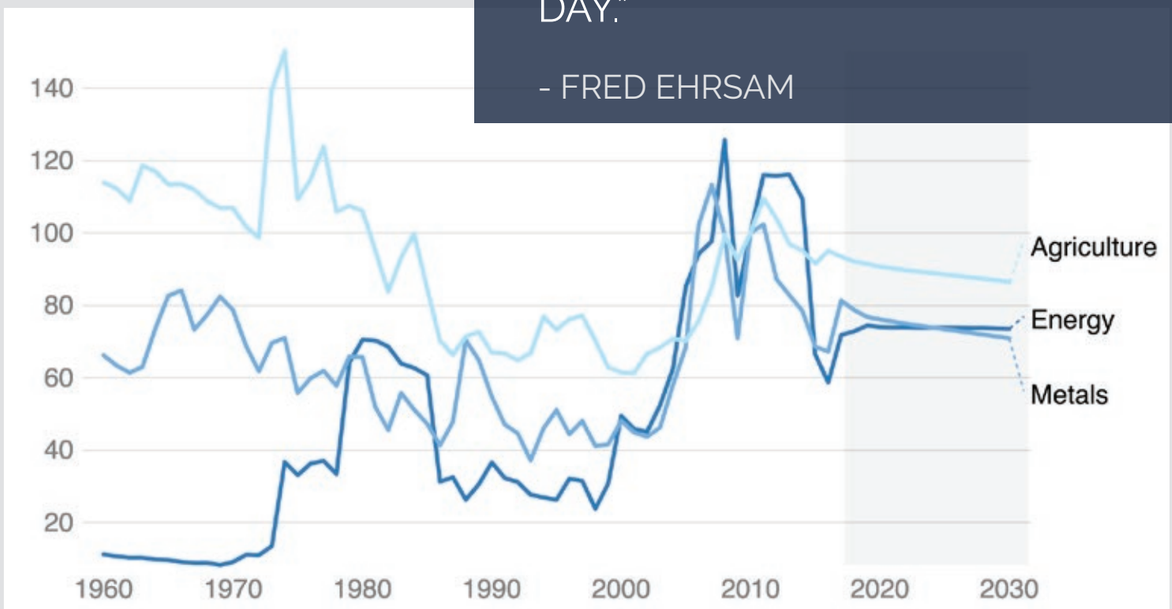


Tokenizing Assets on the Blockchain

With the mainstream adoption of blockchain technology occurring worldwide, the ability to digitalize and evaluate assets on the blockchain has become an in-demand service. Digitalizing goods not only allows for easier division of assets, but they are also easier to transfer, are less susceptible to cross border regulations, remove the necessity for intermediaries, and function in a much more transparent and verifiable way. The trend appears to be that eventually, every asset will be able to be represented, tracked, and transferred digitally using blockchain technology. The digitalization of commodities is already occurring in the blockchain space, for example, projects such as Digix, Oilcoin, and Wepower are tokenizing gold, oil, and green energy sources respectively. The benefits substantiated by utilizing blockchain technology provide those dealing in commodities a more efficient and transparent system, allowing for simpler funding of projects, disbursements of dividends, and the ability to maintain trust with investors.

"EVERYTHING WILL BE TOKENIZED AN CONNECTED BY A BLOCKCHAIN ONE DAY."

- FRED EHRSAM



Commodity Prices Stabalize after a Boom and Bust Cycle

Source: World Bank

Situation Analysis

"THE ONLY CONSTANT IN THE TECHNOLOGY INDUSTRY IS CHANGE"

- MARK BENIOFF

Political & Regulatory Drivers

The tokenization of commodities must take into consideration existing legislation as the industry is one that is highly regulated and monitored. Selling even a fraction of an asset to the public without government consent is prohibited by securities laws.1 The issue becomes even more blurred due to the natural global reach of blockchain tech. As assets cross global jurisdictions, differing legislations can lead to problems for issuers of tokens. Regulators also want to ensure that the assets that are being sold are in fact tied to a real asset that can be verified and tracked.1 With advances in blockchain technology, legislation may have to change in order to allow for nascent technology to work effectively, and certain states already are taking such action. Fortunately, there are many assets that can be digitalized without enduring these legal barriers. New business models running on blockchain technology have already contributed several successful projects to the commodities trading industry while obeying existing legislation.

Economic Drivers

Commodities represent some of the largest global markets, for example, oil alone is a $1.7 trillion dollar industry.2 The global market value of commodities is massive, yet raising funds for projects can be a cumbersome and drawn out task. Traditionally, banking institutions and accredited investors would have been the most likely source for the much-needed funds. Using blockchain and cryptocurrency to create an online platform for purchasing assets would open up the space to more investors and increase resources for companies operating in the commodities space.

Social Drivers

Growing adoption rates of cryptocurrencies are still met with hesitation from those concerned with the volatility of the digital currency. However, tokenizing commodities would be tying a digital coin to a real-life asset, and as long as that asset can be verified and tracked, it would become a more stable token than those that are not backed by any kind of value. These kinds of investments would be a lower risk opportunity to enter the market, further increasing adoption.

Technological Drivers

The technological benefits of utilizing blockchain and cryptocurrency create a transparent and trustless system for commodities investment. Verified resources could be tracked and tagged in order to ensure reserves are maintained, and if any assets are moved, there would be a digital record of such. For example, from the time an ore is mined, the amount can be verified and written to the blockchain, it's movement to a processing plant can appear as another step in the resources journey, and finally if it is sold to a manufacturer, another record would indicate its final location. All of this would contribute to a system where investors are kept in the know regarding their investments, ensuring a trustworthy system where fraud is exceptionally difficult.

Market Dynamics & Competition

The competitive landscape for commodities generally operates as an oligopoly. Exchanges have recently shifted to a massively consolidated institution regulated to ensure that all trading occurs within its walls.3 Looking at more specific commodities, you notice a monopoly effect on a product to product basis. Certain commodities are only available on a particular exchange, giving that entity global control of transacting with the asset.3 Partaking in these exchanges can be a nightmare across borders since there is no simple way to access the exchanges, effectively reducing global reach and market cap. Of course, these exchanges are not likely to be accepting of a new, global, online exchange for commodities, however, there are already projects capitalizing on this idea that have not experienced much push back.

Blockchain Use Cases

In each of these use cases, blockchain allows the market to be opened up to a global scale. However, it would be of utmost importance to follow the regulations and legislation tied to commodities and securities to prevent compliance issues leading to fines or closures.

Oil

Tokenizing oil would require an audited reserve of barrels to be digitally represented on the blockchain via a cryptocurrency. This cryptocurrency would be free from price volatility linked to government intervention or arbitrarily valued digital currencies. The cryptocurrencies could be exchanged in a global marketplace, cashed out for fiat, or in some cases the oil itself.

Mined Ores

Ores would have a verified supply validated through government security legislation prior to a token sale occurring. The tokens would represent the amount of usable resources that will become available once the mining has concluded. In these cases, the tokens can be sold prior to mining in order to organize capital for the project. At the time of mining, the resources can be tracked so each investor is aware of the activity surrounding their goods and make informed trading decisions.

Renewable Energy

The tokenization of energy, whether it be solar, wind, or water, would work similarly to ores. In this case however, a token would represent an amount of power to be generated from the renewable resources. Tokens would go through a sale or auction period where investors can choose to buy tokens that represent the future output. The owners of these tokens could choose to cash in their tokens in order to use the power themselves, sell their tokens to another party, or exchange their tokens for cryptocurrency or fiat.

"THE NEXT STEP IS TO... WELCOME A TRULY NEW ERA OF DIGITAL TRADE FLOW MANAGEMENT ON A GLOBAL LEVEL"

- LOUIS DREYFUS COMPANY

Blockchain Solutions

The following chart outlines some of the current issued faced in the commodity ecosystem and a few possible solutions using blockchain technology. Overall, tokenizing commodities through blockchain technology can lead to a much more transparent and adoptable product. The examples below provide a small sampling of how one could execute building a blockchain platform, however, it is important to note that there are many customizable options based on the issuers needs.

Problem	Solution	Use Case
Entering the commodity market is not traditionally inclusive of regular investors.	Create a platform that creates global reach for not only accredited investors but also lower stake participants.	Using a cryptocurrency to create an online, digital exchange of tokenized assets would provide a platform for asset purchase, trade, and sale. It would not be as highly regulated as traditional exchanges, therefore lowering the barriers to entry.
The division of assets is not always a simple task.	Utilize a value system that is easily divisible based on the provisions of the issuer.	Digitalize assets using a cryptocurrency that can represent the desired amount of a good. These tokens would have a verified footprint that includes any necessary data that an investor would need. Therefore, any legal identification information for the transfer of the asset would be embedded into the token itself.
Traditional systems provide little information on the status of assets.	Provide a history of transactions and movements of an asset in an immutable record.	Blockchain technology would provide a historical and tamperproof record that can be verified and accessed at any time. The database could be private, with access only granted once an investor has interacted and completed the steps necessary in a contract. However, this ultimately would provide information that investors would need in order to make informed decisions regarding their investment. As purchasers track their goods through their lifecycle, they would be able to make more reliable transaction decisions.

Blockchain Solutions Cont.

Problem	Solution	Use Case
Liquidating assets involves lots of processes and paperwork.	Operate on a platform that provides third party liquidity to users.	Operating on a platform that has built in third party exchange capabilities makes it easier for users to trade their tokenized asset into either another cryptocurrency, or potentially even directly into fiat. Depending on the specifications of the exchange and approved third party channels, a user may be able to liquidate in a single transaction.
Commodity investment scams have been able to fraudulently raise funds.	Provide a verified, monitored, and audited record of assets in a tamperproof system.	Blockchains would allow for a digital and immutable record to be kept in a database available to potential investors. This database could include a record of any security or commodity documents necessary to sell shares of those goods, an ongoing audit of resources, and even a record of the good's movement throughout its life-cycle. All of these benefits are inherent in blockchain technology and are the reason why the system is seen as trustless. Information written to the blockchain is difficult to fake and tamper with, making the system trustworthy for investors.
Centralization leads to higher costs and more fees.	Decentralize operations to reduce costs and stop the unnecessary charging of fees for company profits.	Decentralizing operations across a network of nodes reduces costs and the risk of system overload. Without a central entity looking to maximize profits, costs to the user, such as high administration fees, would be reduced or eliminated.
Paper based contracts and transfers are time consuming and inefficient.	Reduce redundant paperwork and manual data entry associated with asset transactions.	Create smart contracts that issuers and investors can interact with to provide and purchase tokenized assets. The smart contract would automatically check for any required information and provide access for the purchaser to monitor their good, as well as settle the transaction.

About Us

Ronald Chan
Co-Founder

Ronald Chan is a hands-on entrepreneur and born leader who has spent his entire career immersed in technology and its revolutionary effects. Ron's ambition to adapt and advance as an early adopter of incipient technology has lead him to blockchain technology and its disruptive nature. While applying his more than 25 years of change management, Ron is creating new business models and developing solutions for the web 3.0.

Alex Sheluchin
Co-Founder

Alex Sheluchin is an experienced software developer with an unwavering interest and belief in the efficiencies of emerging blockchain technology. With over 6 years of specialized software development as a Senior Developer at Netquity, a commercial aviation enterprise software firm, Alex has honed his programming skills and gained experience in high pressure, time sensitive projects.

Conveniently available by phone, email, or appointment.

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