Capital Markets

Blockchain solutions offer benefits to issuers, fund managers, investors, and regulators

* Issuers are able to create and send digital assets and securities in minutes, as well as providing a way to encode terms and conditions into assets which can provide transparency and efficiency.
* Fund managers using blockchain operate on a peer to peer trading system with a verifiable ledger. The risks of trading compared to traditional markets are greatly reduced as everything is easily verifiable. Operational efficiency allows a significant reduction in costs as tasks such as accounting, allocation, administration, and fund servicing are simplified.
* For investors, blockchain reduces the barrier to issue new assets or financial products. Risk management is instrumental for investors which is something addressed by the programmable nature of digital assets and financial instruments.
* Immutable nature of blockchain means that once transactions occur, they cannot be changed, which enables regulators to automate functions such as auditing and compliance.

What are the use cases of blockchain in capital markets

* For issuance, blockchain enables the creation of digital representation of existing conventional securities, and wholly new digital assets. Blockchain also enables new ways of efficiently raising capital through models such as decentralized crowdfunding.
* Blockchain enables digital securities to enter the market through unique ways such as bilateral negotiations, centralized and decentralized exchanges, matching algorithms, and auctions. Blockchain also allows for assets to be made with instantaneous and customizable issuances depending on the business model.
* Manual reconciliation and physical delivery of securities limit the ability to respond to the market. Blockchain enables a more efficient collateral management system by ditizaling collateral holdings into a single optimized registry. Digitally represented collaterals on blockchain can be redeployed and settled in real time, which eliminates the delay between valuation and call.
* Blockchain can improve the business operations of exchanges through their functions. Blockchain transparent ledger can aid exchanges with data verification, access rights, and could potentially provide robust warning systems for trading activity.
* Smart contracts can be programmed to match payments to transfers through off chain cash payments, cryptocurrencies, or stablecoins
* Blockchain enables any entity to create digital currency backed by any asset they wish.
* Blockchain can automate and streamline processes in post trade services which can reduce costs and settlement times
* Blockchain enables automation of digital security lifecycle events such as coupons, dividends, exercise of rights, maturity, and pricing, streamlining service, and management processes.
* Fund management currently relies on manual processing of fund data and other administrative tasks that are prone to error. Blockchain enhances the fund management process by automating and securing fund reference data in near real time.
* Decentralized nature and cryptographically secure code ensures assets are kept extremely safe.
* Smart contracts and digitization allows a blockchain network to act as a digital transfer agent by maintaining a chain of provenance for assets and coded asset lifecycle payment instructions.

What is a Central Bank Digital Currency (CBDC)

* Digital form of central bank money which is legal tender and backed by a central bank.
* Can be used in retail and wholesale situations of traditional fiat currency such as payments between individual and businesses, or used to facilitate interbank settlement.
* Central banks currently face many challenges such as accessibility and the decline of use of traditional bank notes.
* CBDC enables a digital currency that can be distributed on mobile devices which allows for usability, requires no costly and time consuming reconciliation for e-commerce and cross border payments, gives banks direct influence over the money supply, improves interbank payment settlements through automation and decentralized netting solutions, reduce counterparty risk, and a whole host of other benefits not available to traditional fiat currency.

Blockchain for Decentralised Finance (DeFi)

* Refers to the shift from traditional centralized financial system to a peer to peer financial system enabled by defi technology. DeFi operates on the blockchain which removes the need for traditional financial systems such as central authorities and intermediaries.
* Some benefits of DeFi include the ability to program smart contracts to automate execution and enable the creation of new financial instruments and digital assets, tamper proof data coordination across a blockchain, open transparency, and permissionless access, are a few examples.
* There exists many uses for DeFi ranging from things such as asset management to insurances to lending and borrowing, to trading.

Blockchain and Identity

* 1 in 7 people in the world do not have any physical identification, the use of mobile based identity backed by blockchain can suit the needs of these vulnerable citizens.
* We store our valuable information on centralized government databases which can be prone to failures as well as being targeted by hackers. Decentralized system of storing personal information, as well as a permissionless nature of blockchain reduces the likelihood of these issues.
* Fake identities between the real world and the online world can be dangerous to society through the creation and dissemination of “fake news”. Blockchain allows tools to build new identity management systems based on the concept of decentralized identifiers (DIDs).
* DID is a pseudo anonymous identifier for a person, company, object, etc that is secured by a private key. A person can have multiple DIDs for many situations such as one for real life activities and one for a gaming platform. DID are cryptographically signed by their issuers which allows the owners to store these credentials themselves instead of relying on a profile provider such as google or facebook. Private keys are known only to the owner while a public key is disseminated widely. Once paired with a DID, users can present their identification in the form of a QR coffee to prove their identity to access services.
* Self sovereign identity, or SSI, is the concept that people and businesses can store their own identity data on their own devices, choosing what information to share to validators without relying on a central repository of data.
* Decentralized public key infrastructure (DPKI) is the core for DID. Blockchain enables DPKI by creating a tamper proof and trusted medium to distribute the verification and encryption keys of identity holders.

Blockchain and Energy/Sustainability Uses

* Blockchain allows consumers to trade and purchase energy directly from the grid rather than from retailers.
* Blockchain can allow people who generate their own energy to potentially distribute it to others.
* Blockchain can be used to safely and securely store data for energy infrastructure as well as energy commodities such as oil and gas. This can ensure no corruption through open transparency, as well as reducing the costs of things such as accidental clerical errors.
* Most blockchain applications in the energy sector revolves around the usage of the idea of ledgers to securely track and store data.

Blockchain and Finance

* The many benefits of blockchain technology in the financial world includes: security, transparency, trust, programmability, privacy, high performance, and scalability.
* Digital financial instruments can allow for data integrity, allowing code that addresses governance and compliance, can streamline processes to improve overall operational efficiency, and to be customized to react to market demands.
* Blockchain can greatly reduce the usage or intermediaries in the traditional financial world which will greatly cut down on time and and costs. Furthermore, the programmability of blockchain can allow for any enterprise to customize their programs to meet the demand of any entity as well as to ensure compliance with any regulations in place.

Blockchain and Government

* Blockchain based government can protect data, streamline processes, reduce fraud, waste and abuse while simultaneously increasing trust and accountability.
* Blockchain based government has the potential to solve legacy problems to ensure benefits such as: secure storage of data, reduction of labour intensive processes, reduction of excessive costs, reduction potential for corruption and abuse, and increase trust in government and online civil systems.
* Digital ledger format can be used for things such as digital currency payments, land registration, identity management, supply chain, health care, taxation, voting, etc.

Blockchain in Healthcare

* Centralized data systems, regulation and the focus on digitizing medical data are focal points which the healthcare industry has been affected. Healthcare system currently has many different entities who all do not wish to interact with each other. For example, in terms of patient providing data, administrators requesting medical data, pharmaceutical companies authenticating drugs.
* Redundancies in the medical system such as patients getting multiple of the same examination or lack of transparency for medical data wastes time and can be expensive.
* Some benefits of blockchain in the healthcare industry include: secure management of electronic health records, patient consent management, drug traceability, data security, and incentivization through micropayments.

Blockchain in Insurance

* Blockchain can be applied throughout the insurance industry across many lines of business including: registries of high value items, KYC and AML procedures, parametric products, reinsurance practices, claims handling, distribution methods and peer to peer models.
* Blockchain can create immutable records of products and can track product ownership to ensure high value items are legitimate.
* Automated parametric insurance can be seen in embedded policy logic in smart contract to automatically trigger upon a predefined loss event cutting down on time

Blockchain in Law

* Benefits of blockchain in law includes: accessibility, transparency, cost savings, automation, and data integrity.
* Lawyers can leverage blockchain tech to streamline and simplify their transactional work, digitally sign and immutably store legal agreements. Scripted Text, smart contracts, and automated contract management reduces excessive time spent preparing law documents.
* Shared ledger accessible by all parties to an agreement makes things more transparent.
* Some usage of blockchain in law can be seen in electronic signature which is faster, cheaper, and more efficient than other e-signature platforms.
* Other applicable uses include: intellectual property protection, property rights, chain of custody, tokenization, decentralized autonomous organization (DAO) and limited liability autonomous organization (LAO), automated regulatory compliance, machine to machine payments, and blockchain based arbitration system.

Blockchain in Media

* Benefits of blockchain includes: decreased IP infringement through time stamped and immutable ledgers, disintermediated content from industry intermediaries, and direct monetization of all copyrighted assets through smart contracts and p2p micropayments.
* The uses of blockchain includes the peer to peer sale and distribution of digital media goods without costly intermediaries, streamlined royalty payments through examples such as in NFT, and usage based billing models for content such as streaming services.

Blockchain in Real Estate

* Tokenization of real estate assets in particular can streamline the real estate market. Furthermore, blockchain can allow for automation of the market as well as enabling a choice audience to the market ranging from local to global.
* Many of the use cases in real estate can be seen in financial uses of blockchain such as asset management, loans, crowdfunding, DIDs, and real time settlements and payments.

Blockchain in Retail Fashion and Luxury

* The biggest benefit of blockchain in this sector includes the ability for goods to be transparent, traceable, and tradable.
* Transparency of luxury goods prevents any fake or third party good from flooding the market as brand authentication will be widely disseminated.
* Blockchain can be used to verify goods through digital twins, whereby real items can be paired with a verifiable measure such as RFID, QR code, or photo with the blockchain to ensure authenticity as well as being able to see the history of the goods.

Blockchain in Sports and Esports

* Benefits of blockchain in both sports and esports environment includes: enhancing fan interaction and experiences by incentivizing engagement, providing new revenue models through tokenized teams and enhance loyalty programs, creating new markets for sports betting and collectible trading, and enabling athletes to crowdfund their performance.
* Fan loyalty can be greatly increased through loyalty programs that can be more readily tracked

Blockchain in Supply Chain Management

* Use of smart contracts ensures transparency into the provenance of consumer goods, accurate asset tracking, and enhanced licensing of services, products and software.
* Implementation of blockchain in current supply chains can greatly increase efficiency by cutting down on paperwork and administrative redundancies. Additionally, blockchain can also help cut down on the distribution of counterfeit goods and exploitative/illegal practices such as in preventing goods from illegal mines or illegal fishing.
* Blockchain’s shared infrastructure would streamline workflows of all parties in the supply chain.
* The traceability, transparency, and tradability examples referenced in luxury goods are also applicable in supply chain management. Traceability improves operational efficiency by mapping and visualizing supply chains. Transparency builds trust by capturing key data points such as certification and claims and provides this data publicly. Tradeability redefines conventional marketplace framework by tokenizing assets to split ownership shares of an object much like how stocks work.

Blockchain solution in asset management

* Slow and complex process that involves multiple intermediaries. Codefi streamlines asset insurance and lifecycle management process, digitization of traditional securities and new financial instruments allows a wider range of assets to be monetized.
* Requirements for compliance and regulatory reporting have intensified significantly to keep up with financial innovation. Manual audits prone to human error, manipulation and fraud. Codefi issues digital assets on an immutable ledger with built in compliance functions and automated real time transaction monitoring.
* Traditional fund subscription and asset lifecycle management are reliant on complex, manual, paper based processes involving intermediaries which are prone to human error, data manipulation and fraud. Codefi digitizes security lifecycles events on one platform and retains a single source of truth for all platform activity, eliminating need for manual reconciliation.
* Investment firms traditionally rely on banks, brokers and other intermediaries to distribute their products which incurs middleman costs and promotes a removed relationship from investors. Codefi enables direct asset distribution on its digital asset marketplace.
* Clearing and settlement cycles can take up to three business days from transaction which can create delays in payment among stakeholders and impacts cash flow. Blockchain eliminates the need for intermediaries which makes near instant transactions a reality.
* Custodians rely on sources to provide accurate security reference and fundamental asset reference data, for this, they pay premium fees and work to standardize info across the industry. Blockchain transforms the way digital asset data is collected, validated, updated, and maintained by providing a single source of truth that eliminates the need for data reconciliation.

Blockchain solution in capital markets

* Security issuance today is complex and time consuming which involves multiple parties. This is multi-stepped which is both inefficient and prone to errors. Codefi enables easy and quick ways to create digital representation of conventional securities. Blockchain based securitization can digitize documents and also create and customize financial instruments and new digital assets.
* Sales and trading today are fragmented across exchanges, brokers, and order matching systems which can result in delays up to 10 business days. Blockchain solutions enable digital securities to seamlessly go to market through a variety of automated mechanisms such as bilateral negotiations, defi and cefi exchanges, matching algorithms, and auctions.
* Collateral management involves manual reconciliation and physical delivery of securities which can take up to two days. Codefi provides a view on all margin calls and pledges in a single dashboard to analyze collateral balances in real time.
* Exchanges are responsible for a complex array of tasks which are prone to latency problems, technical constraints, and costly overhead. Codefi facilitates fair and orderly training and efficient price discovery, as well as accommodating new digital asset classes and ensuring security and compliance.
* Clearing and settlement currently built upon fragmented financial infrastructure which can take up to 10 days leaving parties exposed to the risk of not receiving securities or payment on time. Codefi smart contract enables asset settlement and ledger consolidation in seconds instead of days.

Defi solution for institutions

* As ETH defi grows, more people are searching for a way to keep up with defi innovation. Metamask gives investors access to the defi ecosystem.
* Thousands of validators have staked billions, but being a validator is complicated and maintaining the infrastructure to be a validator generates overhead and risk exposure. Codefi enables institutions to stake ETH without the complexities of maintaining validator infrastructure or ever surrendering custody of ETH to a third party.
* DEX users don’t receive best prices automatically. Codefi offers a price information API that collates prices from multiple DEXs .

Blockchain for global trade and commerce

* Trade and financing industry suffers from a lack of trust and coordination between exporters and importers. Industry also maintains various operational inefficiencies due to the complex nature of operational processes in the international trade of goods and commodities. The potential impact of blockchain tech on international trade has spurred many companies to update their outdated tech. Blockchain enables tokenization of existing documents, letters of credit and more, while smart contracts will improve coordination between exporters and importers through the automation of agreements, business events, and other manually intuitive processes.
* Blockchain provides the capability to reduce fraud through a distributed and immutable ledger where information cannot be manipulated without notifying all parties involved. Blockchain native ability to create and transfer digital assets enhances various existing commodities trading processes while real time data and transactions enabled by smart contracts has the potential to reduce delays and automate manual processes.

Blockchain solutions for real estate

* Property development firms face challenges raising finances for new projects. Codefi simplifies access to alternative financing models by facilitating direct interaction between multiple participants.
* Loan and mortgage approval remains time consuming and insecure with non standardized paper based processes. Codefi offers banking institutions a single version of verified info, secure data sharing, immutable transaction monitoring, and real time payment settlement. This makes lifecycle management of the loan or mortgage much more efficient.
* Large scale property management firms endure inefficient oversight on global portfolios. Blockchain facilitates data sharing and can streamline rental collection and payments to property owners.
* Land titles rely on paper documentation which is vulnerable to loss and fraud. Codefi eliminates complexity of legacy system and offers a secure and immutable digital registry with document authentication and transaction transparency.
* Lack of trust from the local community with regard to urban planning. Blockchain based planning platforms can include educational resources, token based participation incentives, and a feedback loop between stakeholders to build community trust and confidence.
* Larger construction projects have become increasingly difficult to manage. Blockchain platforms simplify procurement, automate contract management, authenticate product quality and streamline project management which helps to minimize bottlenecks in the construction process.

Blockchain solution for syndicated loans

* Execution and administration of syndicated loans is inefficient and costly, relying on many intermediaries and legacy systems. Digital standardization across lead agents, lenders, and secondary agents can reduce the risk and manual efforts required to facilitate syndicated loans.
* Manual tracking and recording of stakeholder votes requires manual effort which is inefficient and can be prone to errors. Codefi automates both the collection of votes and editing of documentation which will drastically cut down on time.
* Verification of many similar or same documents among syndicates can be costly to verify. Codefi document management enables stakeholders to be assured of the latest version of a document as well as the immutable history of past versions.
* Settlement times on loans can reach more than 20 days. Syndicated loans built on blockchain technology enables near real time settlement and effectively eliminates risk, inefficiency, and costs associated with long settlement times.