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Blockchain and Smart Contracts

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Given technological developments that foster innovation within the financial services sector, the MFSA conducted a workshop on 23 March 2023 centred around the theme of ‘Blockchain and Smart Contracts.’ The workshop’s primary objective was to provide MFSA employees involved in authorisation and supervisory processes with first-hand insights into the varied Fintech solutions available in the financial markets.

This workshop consisted of presentations and discussions which covered in detail features of blockchain technology and their inter-relatedness, namely decentralisation, and immutability. The session outlined how cryptocurrencies harness blockchain technology, bypassing the need for intermediaries such as banks or financial institutions. It explored the concept of smart contracts, including self-executing smart contracts, and offered some examples of sectoral applications. The workshop also included a case study, primarily spotlighting the pivotal events attributed to the collapse of one of the largest cryptocurrency exchanges – FTX.

Features of Blockchain

In terms of blockchain technology, several key features were outlined, and their inter-relatedness was acknowledged. The prominent features discussed were namely: decentralisation, the public or permissioned aspect of blockchains and blockchain immutability.

Decentralisation in blockchain technology is achieved through ‘nodes’ – which are a network of computers, each maintaining a copy of all balances and transactions of the entire blockchain; ensuring the blockchain operates in a decentralised and transparent manner. The speakers then highlighted that such blockchain structures significantly reduce the risk of a single point of failure, that can be seen in other systems such as central databases, while also eliminating the need for intermediaries such as banks or financial institutions.

Public blockchain networks are accessible to all users, allowing anyone to run a node and interact with the network. Permissioned networks are characterised by restricting access to participation in the blockchain network to a select number of individuals, thereby enhancing confidentiality.

Immutability is a core feature of the blockchain network whereby validated transactions cannot be modified by any one actor. Hence, ensuring that all data on the network remains untampered.

Practical Applications of Blockchain and Smart Contracts

Although there are clear risks associated with blockchain and smart contracts, they have continued to evolve, leading to various applications across diverse sectors. Some technological applications of blockchain and smart contracts include:

- **Intra-bank Clearance:** Banks retain their individual client transaction and balance data, while blockchain nodes store transaction and balance data for all users, requiring updates for each transaction that takes place. Thus, each blockchain node can be regarded as an identical ledger, in contrast to the separate and distinct ledgers maintained by different banks.
- **Land Registry:** The utilisation of blockchain in land registry guarantees that inputted data is permanent, tamper-proof, and decentralised (absence of a single trusted institution). Hence, this technology has the potential to facilitate property sales on marketplaces with reduced intermediary fees and bureaucracy.
- **Verifiable Credentials:** Tamper-proof systems can be implemented to safeguard documents such as university degrees from falsification. In addition, blockchain could assist in credential validation when physical documents representing academic certificates are lost.

FTX Case Analysis

Following the discussion on Blockchain and Smart Contracts, Dr Michael Scicluna delved into the FTX case study. He outlined the sequence of events which led to its collapse, highlighted the red flags, explored FTX's implications under MiCA regulations, and presented various learning outcomes.

Want to know more about the Blockchain technology applications within financial services sector, then check our [FinSights](#) section. Should you have any queries or wish to discuss your ideas, even within the context of our [MFSA Fintech Regulatory Sandbox](#), contact us at fintech@mfsa.mt.