

Central European University

MS in Finance 2022

Capstone Project Summary

How DeFi transforms the Banking Industry

- Case studies from China, Hong Kong and Singapore

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Introduction

This is a 3-pages summary of capstone project. Firstly, I'd like to take this opportunity to thank my project sponsor LIQUID (Hong Kong) for the capstone opportunity. As LIQUID is in Fintech ecosystem applying Hyperledger Blockchain, client is interested in in-depth research and analysis on DeFi in banking for future product development. This research will also help client to promote Fintech ecosystem in a simple and easily understandable way for future practitioners. From the capstone project, I gained much deeper understanding on DeFi world, the visionary web3.0, latest technologies, DeFi potential risks and its applications.

Part 1 – How DeFi transforms the Banking Industry

What is Decentralized Finance (DeFi)

The fundamental innovation of Decentralized Finance (DeFi) replacing centralized platforms with a decentralized system. Additionally, DeFi systems are open to anyone. DeFi uses blockchain technology and smart contracts in application on traditional banking function such as exchange, saving, lending, borrowing, investing, trading and more.

Some history of DeFi

The history of DeFi can be traced back to Bitcoin, which is one of the first protocol to deploy a revolutionary technology of Blockchain. In 2008, Satoshi Nakamoto released the Bitcoin White Paper which outlined how Bitcoin can be make peer-to-peer transactions in a decentralized network. In 2014, Vitalik Buterin published Ethereum White Paper which uses the same blockchain infrastructure but with additional features allowing for smart contracts. Since the launched of Ethereum, it has given rise to many paradigms and industry including DeFi, non-fungible tokens (NFT), and decentralized autonomous organization (DAO). The DeFi industry has boomed and the total value of cryptocurrency (TVL) has exceeded US \$200 billion in the DeFi space.

Technology Development

Blockchains are resistant to modification of their data as once recorded, the data in any given block cannot be altered retroactively without altering all subsequent blocks. With time advance, public blockchain, private blockchain and permissioned blockchain are developed to suit different organizations need. Current largest enterprise permissioned blockchain are Hyperledger and R3 Corda.

Existing Pain Points in the current Banking System

In centralized finance model, central bank controls the money supplies, financial trading done mostly via intermediaries, traditional retail banks are the ones conducting borrowing and lending. From the society point of view, current financial system has shortfalls in term of centralized control, limited access, inefficiency, lack of interoperability and opacity.

How DeFi might be a solution to solve the pain points of current Banking System

DeFi is run by a network of independent individual users. As long as one node and the entire system is running, the data is safe and secured. Since there are hundreds of thousands of nodes running the protocols, meaning blockchain DeFi is immutable. Hacking the blockchain is nearly impossible. DeFi system can serve the global unbanked population. It does not categorize customers and is open to anyone. DeFi can handle financial transactions with high volumes of assets and low friction by creating reusable smart contracts. Blockchain is verified by a decentralized collective, the settlement or withdrawal period is substantially faster. Forking creates competition at the protocol level and creates the best possible smart contract platform. Contractual tokenization enables DeFi platforms to integrate. In the decentralized finance ecosystem, liquidity of traditionally illiquid assets can be unlocked through tokenization. DeFi elegantly solve the opacity or the problem of lack of transparency of the traditional finance system by the open and contractual nature of agreements. Asymmetric information is eliminated.

Part 2 - Case studies on 3 Asia Regions

In the capstone project, I chose 3 regions in Asia, namely China, Hong Kong and Singapore for case studies. For China, I focused on credit and lending, with Ant Financials & Alipay and Du Xiaoman Financial (Baidu financial group); for Hong Kong, I chose trade finance, as our

capstone project client LIQUID is in this field pioneering blockchain data finance, we also view on HKTV mall collaboration with HSBC in this field; for Singapore, I choose embedded finance, with Grab financial group as an example.

DeFi Risks and Opportunities

Same as other innovative technology, new innovation of DeFi also instigates new set of risks. The DeFi risks to be discussed are smart contract risk, governance risk, regulatory risk and country specific risk.

DeFi also give rises to new opportunities, including the visionary web 3.0 world, in which decentralization and token-based economics are applied to the www concept; on the other hand, central banks also borrowed blockchain and distributed ledger technology (DLT) in the issuance of Central Bank Digital Currencies (CBDC).

Conclusion

There are limitations on the existing banking system, and DeFi has potential to solve those pain points. Various fintech companies in Asia have leveraged permissioned blockchain for financial services solutions with enhanced security and efficiency. The future DeFi will continue to shape the banking system for better service, and for a wider population.

Main References

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