UnitedCoin

Cryptocurrency for Everyone

Yes We Coin!™

White Paper

Abstract

Financial Services, the most profitable industry in the United States (US Department of Commerce). In 2016, finance and insurance represented 7.3 percent (or $1.4 trillion) of U.S. gross domestic product. Total Global Assets Under Management is currently $63T and projected to rise to $102T by 2020. Currency Trading reaches upwards $5.3T per day, and $220 billion per hour. The financial services market is robust, and being disrupted by blockchain technology: secure, automated chain of custody.

Blockchain is on the rise since 2009, however, less than 1% of the current population uses it or has heard of it. But banks and Wall St have taken notice. JP Morgan is now coming out with their own coin. Financially savvy individuals are positioning themselves to use blockchain technology to increase their profit margins. Unfortunately, there is still a gap. The 99% are not being rewarded for their support. UnitedCoin aims to “bridge the gap” and make these same services accessible to the 99%, through intuitive access and education.

Data, referred to as the new oil. Sources project revenues from data sales to be $49 billion in 2019. Next, research bank account overdraft revenues for banks in 2016: $35 billion. Amounting to $84 billion dollars in loss income from individuals and customers. You and me. If 20% of these revenues were shared with the customers, who make the industry and networks possible, it would give every human being on earth over the age of eighteen (18) approximately $2 billion dollars. A year.

We can do this. Hosting blockchain services and education, UnitedCoin operates as a supportive resource for the community. Providing individual and corporate members with an intuitive blockchain platform, and the tools to be successful. UnitedCoin manages the space where members do the most valuable transactions on earth. They are Unique, Special, and One of a kind.

Blockchain operations can be costly. Bitcoin uses the energy equivalent of Ireland to process a block of transactions. A small level of adoption has resulted in classical blockchains becoming less scalable, leading to transaction backlogs.

Powering a robust blockchain requires a robust power source. Mobile phone, especially smartphone use is expanding everyday. In parallel, mobile storage and calculation capacity is also expanding. However it is not being leveraged wisely.

UnitedCoin's blockchain, UnitedChain, uses a new consensus algorithm and chain structure resolving problems faced by classical blockchains. Operating directly on mobile phones through a distributed wireless blockchain network, UnitedCoin leverages the untapped resource of latent mobile device storage and calculation capacity to power the member owned blockchain, UnitedChain.

The UnitedCoin Network empowers each member through an intuitive mobile and web application, monthly rewards, a UnitedCoin debit card, and blockchain education resources. Complex technology is now accessible. Powered by UnitedChain and UNITs.

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1. Definitions

DPOS: In UnitedCoin members are also voters. Thus, we have implemented a voting system where the UNIT holders elect the node which is going to put the block on the ledger, the witness. The witness is elected each round depending on their ability to produce and broadcast blocks, collecting transactions.

POR: To be an active member in the network, a proof needs to be given each round of:

- CPU speed capacity
- Bandwidth availability
- Disk Space
- Online time

Each member has the option in the mobile/desktop app settings to select the amount of resources they are willing to allocate to the network. Once activated, the node is included in the UnitedCoin Member List to receive the additional rewards.

UnitedCoin Active Member: To qualify as Active, a member needs to give >0 POR and have a minimum of .001 UNITs in their account.

Zero-knowledge Proof: In cryptography, a zero-knowledge proof or zero-knowledge protocol is a method by which one party (the prover) can prove to another party (the verifier) that a given statement is true, without conveying any information apart from the fact that the statement is indeed true.

UnitedCoin Member: A person holding UNITs.

UNITs: a network bound unit of account for the UnitedCoin Network.
UNITs are earned by:
- rewards for storing of data
- rewards for retrieving data
- rewards for transmitting of data
- rewards for appending data to the ledger
- Monthly Member Rewards

UNITs are spent by transmitting and retrieving data.
UNITs can be lost due to malicious behaviour.

Monthly Member Allowance (MMA): 20% of UnitedCoin Network net revenue distributed amongst UnitedCoin Members monthly.

Monthly Member Benefit (MMB): 2% average monthly minting benefit on the UNITs for the Active Members.

UnitedCoin UNITs Distribution
UNITs are distributed as follows:

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10% for Founders and Advisers
10% for Development of the Network
10% for the IMO: Initial Member Offering
70% for Member Reserve for Monthly Member Rewards

UNITs community sale: Initial Member Offering (IMO).
UNITs are being introduced to the community through a member only sale, an Initial Member Offering (IMO). UNITs purchased during the IMO are to be held in the UPX for a period of 1 year. This allows UnitedCoin to comply with all Security Exchange Comission (SEC) regulations. It also allows upgrades to occur in a secure, insured environment.

UNITs issued during the IMO use the ERC-223 protocol on the ethereum blockchain. Upon release of the mainnet, ERC-223 protocol UNITs will be replaced with UNITs from the UnitedChain.

2. UnitedCoin Blockchain: UnitedChain

“The UnitedCoin Blockchain is called UnitedChain. UnitedChain uses the newly developed Proof-of-Membership (POM) protocol: a hybrid of POR/DPOS protocols with Checkpoint Consensus.”

Hybrid consensus uses the blockchain not to agree on transactions, but to agree on randomly selected committees which in turn execute permissioned consensus protocols to agree on transactions.

- The criteria used for POM are as follows:
- CPU speed
- Bandwidth availability
- Disk space
- Online time
- UNIT stake age
- Participation in the voting mechanism

UnitedChain engages member support to store, retrieve, verify and validate transactions and perform consensus depending on their node type.

UnitedChain creates an environment where any blockchain business can be plugged in with its own business logic and unit of account, know as Subchains or Links.

There is an issue with blockchain storage referred to as Blockchain Bloat. Each node is required to store all transactions since the blockchain was created and reprocess all of them in order to be in sync with other nodes. UnitedChain resolves this problem by separating the transaction into 2 different types: member tokens and transactional tokens. Transactional tokens allow any type of business to customize their subchain or link to run in parallel and connected to UnitedChain with its own unit of account. These links enable additional transaction power without increasing the size of the main ledger.

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The UnitedChain allows just a certain transaction type to be stored on the mainchain, member UNITs. The movement of the UNIT is the state (consensus result) of the subchain (as a block containing account balances of all subchains).

Processing transactions in this manner empowers the mainchain to remain light. Through the block, all the data of the subchain is stored on the mainchain. Allowing the subchain to only require the last 4 blocks of data to be required since its state is already coded and stored for reference in the mainchain.

Similarly for the hashchain (personal record of transactions), and the subchain. The oldest transactions on the hashchain can be removed because it's past state is stored on the subchain.

This special transaction type contains as an attachment a list of one or more transactions belonging to a single subchain.

3. UNITs

UNITs are a network bound unit of account used in the UnitedCoin network. UNITs are used to pay exchange costs, and for securing the network through staking (saving) in order to receive Member Rewards. Member Rewards include the Monthly Member Allowance (MMA)- 20% of UnitedCoin Network net revenue (Network exchange costs, and third party payments ...) distributed amongst UnitedCoin Members monthly; and the Monthly Member Benefit (MMB) - a 2% monthly minting benefit on the UNITs held in each active member's wallet.

UNITs are earned by transmitting data, holding data, retrieving data, and verifying transactions. UNITs are spent by transmitting and retrieving data. UNITs can be lost due to malicious behaviour.
There is no block reward for participating in the POM. Large mining farms are discouraged, securing distribution and decentralization throughout the network. In order to receive member rewards, members must be an active member.

UNITs are earned by :

- storing of data
- rewards to retrieve data
- transmit data
- append data to the ledger
- MMA
- MMB

4. UnitedCoin Network

Each node which joins the network has an identifier (SHA256 identifier) which is similar to an IP address allowing the UnitedChain network to identify him and XOR distances (mathematical distance) between these identifiers to anonymise and globally distribute all data and traffic.

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We have integrated a DNS to give human-friendly form for this 256 bit identifier. That way, UnitedChain allows its users to send and receive data thanks to their email address.

A proof needs to be given to the network each round of the UMV capacity of :

- CPU speed
- Bandwidth availability
- Disk space
- Online time
- Holdings of the UNIT (locked for a month)

For network efficiency, nodes have slightly the same resources to work together (8 to 20 nodes so minimum 8 replicas of the data) to establish consensus on the data for it to be stored securely and to not slow down the network. The greater the number of nodes in the network the greater the number of groups created, however the network maintains the same performance.

5. Node types

Each member in the UnitedCoin network holds an encrypted chunk of data stored in the secure element section of their device. This area is known as the UnitedCoin Member Vault (UMV). Depending on the resources each member wants to give, the UMV may contain various amounts of data.

UMVs are used to store data, retrieve data, and transmit data on the network. Nodes that choose not to participate, do not receive rewards.

All the data held in the UMV is self-encrypted by the private key of the owner. They are the only ones who can access it.

The user chooses how much storage he wants to allocate to the network. If the personal data held exceeds their allocated amount, it is split into chunks and spread throughout the network. Each chunk has an identifier and this list of identifiers are held in a rooting file which is another chunk.

The UMV holds:

- Personal and chunks of other member's data storage (depending on allocated capacity).
- Hashchain containing at least 2 checkpoint blocks.
- The UnitedCoin Distributed Hashing Table: a distributed hash table for decentralized peer-to-peer computer networks. It specifies the structure of the network and the exchange of information through node lookups.

Node types:

- Basic node: nodes that verify transactions and are eligible because they are trusted if they store, retrieve, transmit data correctly.
- Elected nodes: trusted nodes that run the consensus on the mainchain and append data to the ledger.
- Bootstrap nodes: connect nodes when a member enters the network.
- Full nodes: nodes holding the entire mainchain and used to sync and re-upload each transaction when downloading the UnitedCoin Software.

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- Swap nodes: connection between external blockchains and UnitedChain for exchange of value (also trusted nodes).

6. Hash-channel+mesh network

Inside of a subchain, if users are in the same region and do many transactions, UnitedChain allows members to operate a hash-channel and transact between each other without access to internet or any prerequesite infrastructure, they just need their mobile phones. This solves the problem of network congestion or lack of internet access.

UnitedChain uses the mesh network to allow users to transact without the need of an internet connection, meaning instead of asking the router (the device connected to the internet) to broadcast the data, the node asks its neighbor to broadcast it. For executing the transaction the node is rewarded. After closing this channel, at least 3 trusted nodes (if the channel contains 100 users) needs to broadcast the state of the channel to the subchain, then to the mainchain.

The more nodes in the network, the faster the transaction will be broadcasted and the more transactions will be accepted in the network.

Schema:
A use case can be merchants inside of an African village out of internet . habitants devices will be connected to this network and each time a users want to pay something, the merchant verifies the customers hashchain to double check his account balance (checking if the other half of the last transaction exists in counterparty's hashchain) and then process the transaction. Once the transaction executed, the transaction is broadcasted all of the network and stored in each user hashchain.

(note that to check if a transaction happened the node can process the verification protocol which is to check if the both parties have the same transaction and if it's stored in both hashchains).

7. UnitedChain Upgrades

Members are the UnitedChain. Blockchain governance and upgrade decisions are conducted via a simple yet mandatory voting system through the member app. Only 1 proposal can be made every 30 days and are held in queue on a first come first served basis. When a new proposal is presented to the network, there is a 30 day voting period to determine if it is an upgrade is desired by a majority of members.

A simple in app voting form is displayed prior to access to the member account during the voting period. The proposal is described in 180 characters or less with a choice of yes, no, or no contest. If the member chooses to ignore/close the voting form without a selection, a vote of no contest is entered. In order to be implemented, a proposal must have 51% member participation with 51% member approval.

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8. The UPX

The UPX is the interface between the end user and the network. It translates the email to a node identifier to send and receive data from it, and locate and translate data from the network the readable data.

The UPX is a marketplace where members can exchange units of account or data with absolute security and trust.

The UPX relies on the swap nodes to allow the platform to interconnects with multiple blockchains allowing simple and fast exchange and transfer of funds.

Legacy financial systems and traditional banking services are bridged with blockchain and cryptocurrency services through the UPX. Using the UPX, members deposit funds with a bank account or debit card, and withdraw funds with a connected bank account using Blockchain Software oracles.

The connected UnitedCoin debit card allows online and in-person transactions at over 49 million locations worldwide. The UnitedCoin card facilitates an easy transition for members using their familiarity with debit cards to connect them with the future of finance.

The UPX is accessible from the browser or can be downloaded on member's machine. The members of Unitechain can access and read the data on their account using email and password, to write and send data from it, users need to enter 12 word password phrase.

9. UnitedCoin Blockchain Embassy

For mass adoption of Blockchain technology and cryptocurrencies non-technical individuals need a place to learn and grow. UnitedCoin Blockchain Education Centers (UBE) are hubs for blockchain education and innovation. Each center provides access to individuals to learn blockchain basics and advanced methodologies complementing online resources.

Conferences and classes are held with blockchain experts, researchers, and pioneers in the field. Partnerships with Universities, allow us to broadcast education and facilitate public integration of Blockchain technology. All geared towards making the novice user a Blockchain expert and advocate.

At the UBE, individuals can expect to have access to all the facilities they are familiar with at a traditional bank: ATM, deposits, withdrawals, etc. In addition to scheduled meetings focused on blockchain financial education, University Alumni, hosted workshops and seminars geared towards understanding the underlying technology of blockchain as well as its applications. The curriculum includes cryptocurrency miners who provide training on mining rig construction, programming, and maintenance. Traders show step by step strategies they use in their own portfolios. Blockchain researchers share knowledge of future implications and applications. UnitedCoin's objective is to fully prepare individuals for the technological shifts taking place around the world.

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The first UBE is located in Morocco. The first UBE in the UnitedStates is in Cleveland, OH.

10. Conclusions

For blockchain and cryptocurrencies to reach their full potential, mass adoption is a necessity. To facilitate adoption, individuals must have the skills, knowledge and be able to use the equipment they currently own to use blockchain and cryptocurrency services. UnitedCoin facilitates this through innovation, access and education.

The UnitedCoin account is connected to legacy systems with which members are familiar. Bank accounts and debit cards. The account is also connected to blockchain services. This includes access to the peer-to-peer transaction network connected to multiple blockchains and services, and a rewards for participating in the network. Members are therefore able to join the blockchain community and learn as they grow. UnitedCoin Blockchain Education Centers provide access to education, research and training to empower these same members with the knowledge to form a pathway to blockchain growth and success.

The UnitedChain provides a truly scalable blockchain accessible by corporate and individual members worldwide in any industry. Its modular protocol design allows horizontal scalability, permitting the UnitedCoin network to become faster and more efficient as it grows. Through the employment of a hybrid POR/POS protocol, double spending attacks and fault tolerance issues are eliminated. Thus making the UnitedCoin network and its members fully prepared for the future of finance.

Together, Yes! We Coin.

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