SONchain: A Next Generation Protocol for the MENA Region's Young Economy

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I Abstract

Over the past twenty years, people have increasingly shifted their presence from the physical to the digital world. As humans transitioned into the digital world, there was little discussion about the parties that enabled trusted digital transactions. In 2009, Satoshi Nakimoto launched the Bitcoin protocol, which would become the first open protocol to enable digital transactions that required no trusted middleman [1]. At its core, a transaction is simply a message between two or more parties. We wish to continue to build on the work of Satoshi and other blockchain pioneers to create an equally trustworthy protocol, SONchain, for more advanced forms of communication, specifically open market protocols that have the potential to accelerate the growth of the developing world.

Powered by its native cryptocurrency, SEEDS, SONchain will be application agnostic and more scalable than legacy systems. With strong developer incentives, a fully-tooled SDK (software development kit), and unrivaled user reach in the developing world, the SONchain infrastructure will be the foundation for a plethora of Web 3.0 applications. All of the applications built on SONchain will be accessible through SOMA and Coco, which will both incorporate a wallet and browser. SOMA and Coco are instant messenger applications with 43 million and 39 million users respectively, most of which reside in the MENA (Middle East and North Africa) region. By leveraging these two applications, SONchain will enable millions of people in the developing world to join the Web 3.0.

II Introduction

Instant messenger applications have positioned themselves to become portals in the digital economy because of their high utility and already established trust with users. Users already send valued, confidential information over messenger applications. The implementation of a wallet and browser into an instant messenger application will allow users to send more complex messages than what messenger applications currently offer.

Instant messengers can earn users' trust with regards to these more complex messages by creating systems that require no trusted third parties. The Web 3.0 has attracted so much attention because of a new technology that removes trusted third parties from the digital infrastructure: a blockchain.

A blockchain is a ledger. There are two types of ledgers, those that are permissioned and those that are permissionless. Permissioned ledgers have proven to be significantly more scalable than current permissionless ledgers because permissioned ledgers pre-assign their validators and consequently mitigate the competition over block rewards. However, a permissioned ledger is not censorship resistant, as the ledger's validators have the ability to prevent messages from the network's users with minimal ramifications.

We are attempting to balance the censorship resistance of a permissionless ledger with the scalability of a permissioned ledger. For that reason, we have decided to

secure SONchain using the BFT-style DPoS (Delegated Proof of Stake, Byzantine Fault Tolerant) consensus algorithm. BFT-style DPoS leverages pre-assigned validators with a liquid, representative democracy, allowing for both a scalable and decentralized ecosystem. To improve upon SOMA and Coco's current user privacy features on a public ledger, messages sent through the SONchain network will be encrypted using Bulletproofs, a type of zero-knowledge proof that requires no trusted set-up and no trusted third parties. We are constantly researching other types of zero-knowledge proofs and analyzing the trade-offs between emerging cryptography methods.

We recognize that other similar blockchains have developed first mover advantages with regards to both attracting users and developers. By adding a light wallet and browser to the SOMA and Coco messenger applications, we seek to reach users who are still mostly uninvolved with the cryptocurrency revolution but statistically show a high tendency to become involved because of their age and distrust in centralized institutions. All of our users will have the ability to create a SOMA or Coco wallet immediately after the SONchain network launches. Assuming that only 2% of our users provide the necessary additional information to register a wallet on SOMA or Coco, our wallet and browser will become one of the most used portals in the cryptocurrency sector. We are confident that developers will want to reach our users, as they are the users that blockchain enthusiasts have promised the greatest benefits. In the meantime, we will leverage Instanza's team of developers to continue to build on top of SONChain and provide our users with functionalities not currently available on SOMA and Coco.

III Background

Instanza Ltd. was founded and introduced to the Harvard Innovation Lab in 2011. The company has created multiple social media applications that have garnered significant popularity in the MENA (Middle East and North Africa) region, namely SOMA and Coco. The two messenger applications offer features outside of messaging, such as mobile games, e-commerce, and content aggregation and distribution.
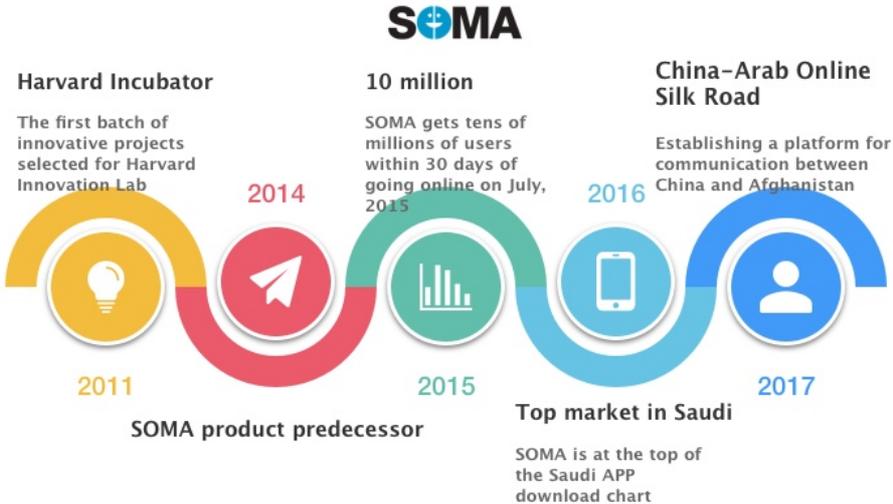

Figure 1: SOMA's Roadmap

SOMA's user penetration in the MENA region is as follows (as of July 13, 2018):

Saudi Arabia	11,116,202, representing 34.4% of the country's population.
Egypt	5,041,203, representing 5.29% of the country's population.
India	4,403,065, representing 0.34% of the country's population.
Iran	3,186,884, representing 3.97% of the country's population.
Morocco	1,660,096, representing 4.71% of the country's population.
United Arab Emirates	1,372,403, representing 14.8% of the country's population.

Coco's user penetration in the MENA region is as follows (as of July 13, 2018):

Saudi Arabia	11,116,202, representing 34.4% of the country's population.
Egypt	5,041,203, representing 5.29% of the country's population.
India	4,403,065, representing 0.34% of the country's population.
Iran	3,186,884, representing 3.97% of the country's population.
Morocco	1,660,096, representing 4.71% of the country's population.
United Arab Emirates	1,372,403, representing 14.8% of the country's population.

The total population in the MENA region is approaching 500 million people and rising, signaling significant potential growth for SOMA and Coco's user bases. The Middle East is also one of the world's youngest regions, with a median age of 22 and 60% of the population under the age of 25. We believe this heavily favors SONchain and SEEDS. Young people have proven to be the most willing to use blockchain technology.

The governments in the MENA region, particularly those of the United Arab Emirates (UAE) and Saudi Arabia, have also been very receptive to blockchain technology. Crown Prince Sheikh Hamdan bin Mohammed Al Maktoum has made public his desire for numerous government documentation processes, such as visa applications and bill payments, to be transacted using blockchain technology by 2020 [2]. Additionally, Saudi Arabia's central bank is testing a cryptocurrency with the UAE's central bank with the intended use of creating cross-border payment channels between the two countries [3]. The endorsement of blockchain technology by MENA governments coincides with MENA governments' increasingly progressive social views, whose benefits to SONchain will be discussed in sections below (Section V, Go-to-market Strategy).
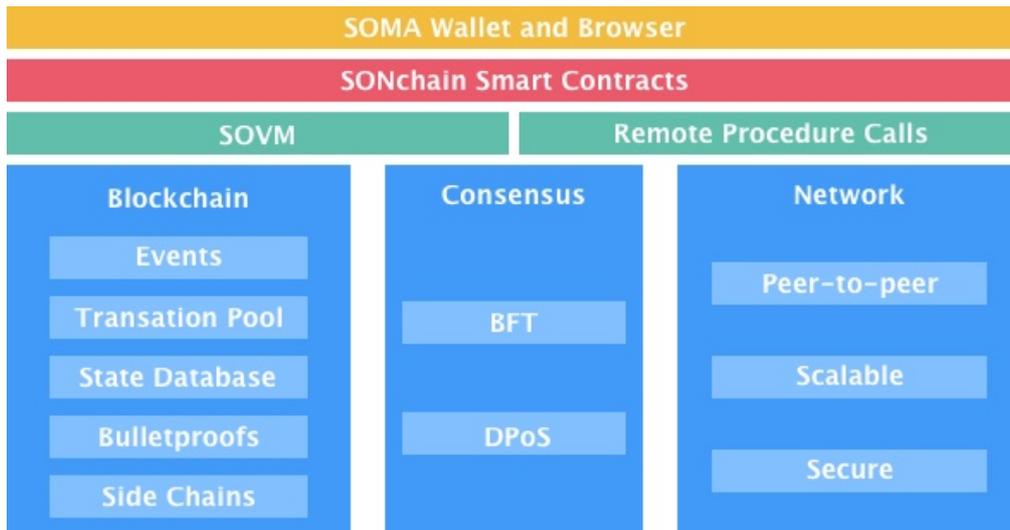
IV SONchain

Figure 2: SONchain infrastructure

State-Based

SONchain will be a state-based blockchain, meaning that it will leverage a key-value mapping between accounts and their respective value declarations, such as the account's balance, nonce, smart contract, or other stored data. The state will be stored in a Patricia Tree, with only the root hash of the tree stored in each block. Patricia Trees encode the path to a chunk (in this case, the value in the key-value mapping pair) within the chunk, thus ensuring the determinism of the total blockchain state between both block producers and listening full nodes [4]. Because they ensure a deterministic state across all nodes, Patricia Trees provide more capabilities for light clients or full nodes that wish to query or test potential inputs to SONchain's state. For example, a full node could know with certainty how an input into the state (such as a transaction or a storage request) affects the state before propagating the input irreversibly throughout the protocol. Other benefits of Patricia Trees will be discussed further in the Interoperability sub-section.

Consensus Algorithm

SONChain will be secured by the BFT-style DPoS consensus algorithm. DPoS (Delegated Proof of Stake) requires its validators to obtain a certain percentage of votes from token holders in order to produce their own blocks and to commit to other producers' blocks [5]. The requirements to be a block producer are determined by the voters, the token holders of SEEDS. Because the SONchain team and foundation will hold a significant portion of SEEDS tokens during the first several years of SONchain's growth, we have outlined potential requirements for block producers: to bond a significant amount of SEEDS tokens in a smart contract for the duration of their block production, to provide fee-less transactions for all users, and to commit a certain portion of future block rewards to reinvesting into the securitization of SONchain.

If a block producer does not follow voters' preferences, voters can vote to replace that block producer with a new one after the current round of blocks has been finalized. On SONchain, a round of blocks is 66 blocks. There will be 11 block producers, with each block producer assigned to produce 6 blocks per round. Block producers produce blocks in an order agreed upon by at least 2/3 of themselves (in this case, 8 block producers). If a block producer fails to produce a block at their scheduled time slot, that block is skipped, causing both throughput and finality to be delayed by one block. We estimate that one block will be produced and finalized in under 1 second.

There are two types of Proof of Stake: chain-based Proof of Stake and BFT-style Proof of Stake [6]. These two styles of proof of stake also apply to Delegated Proof of Stake. In both styles, the ordering of block producers is chosen using a secured randomization algorithm. Chain-based DPoS allows for blocks to be appended significantly faster: after the assigned block producer creates a block and references its preceding block, the ensuing block producer can append a new block immediately. However, the time to append a block is not relevant if there are no guarantees that a block could be part of an illegitimate fork. In BFT-style DPoS, 2/3 of the block producers (in SONchain's case, 8 block producers) have to commit to a block before that block appended to a chain. Consequently, users can assume with high confidence that after a block is appended, it will stay final forever. SONchain has opted to use BFT-style Proof of Stake because of its sub-second finality properties.

Forks are still possible on SONchain, but are very unlikely because of the nature of BFT-style DPoS. A fork would likely occur only if token voters decided it would be best to revert past blocks on SONchain. Token voters could make this decision because of a bug that led to undesired transactions or censorship resistance from cartels formed among block producers.

Inflation Based Mining

Block producers will be compensated through inflation, unless a majority (51% or more) of token holders should vote on a significant change to the payout system through a SONchain Improvement Proposal (SIP). Block producers will be paid no more than 5% annual inflation of the network's total circulating tokens. Block producers will be encouraged to share a fraction of their profits through an airdrop to SONchain's users, as a competitive market to be a block producer will likely require some sort of payout to those that make the network valuable, the users themselves.

Below are the principles driving our mining mechanism:

To end users and DApp developers: 0 transaction fees for all transactions, smart contract deployments, and other data storage. Transaction fees create friction and are likely to stifle

network growth. People have become accustomed to interacting with the internet for 0 fees, and we see no reason why the Web 3.0 should change that pattern. However, 0 transaction fees do leave the network vulnerable to Sybil/DDoS attacks.

To prevent Sybil/DDoS attacks: Each block producer must post their capacity for three variables (bandwidth, computation, and state) during each voting period. Ideally, block producers' capacity will grow with time as they invest further into their mining resources. When the network is at capacity--meaning that block producers no longer have all of the pre-listed resources in excess--the SONchain software allows each account to consume a percentage of available capacity proportional to the percentage (relative to the circulating supply) of the account's SEEDS tokens locked in a smart contract.

For example, if a blockchain based on the SONchain software is launched and if an account holds 1% of the circulating tokens, then that account has the right to utilize 1% of the entire network's state storage capacity.

If block producers are not at capacity, then block producers should accept unlimited access to bandwidth, updates to the state, and computation requests from any account. Accounts are only limited to their percentage of SEEDS tokens staked when the network is at capacity.

Accounts can lend their tokens to other accounts at any time, thus giving the borrower the ability to bond SEEDS tokens to obtain proportional access to the block producers' resources . It is up to the lender and the borrower to decide on the interest rate of the SEEDS loan. A decentralized marketplace for renting SEEDS tokens will be created after the launch of SONchain.

SOVM (SONchain Virtual Machine)

The SONchain Virtual Machine (SOVM) implements WebAssembly (WASM) because of its near-native performance. However, SOVM does not excessively pursue the highest throughput possible. While fast enough to support our large ecosystem, SOVM is designed to avoid the remote execution of arbitrary code and other smart contract vulnerabilities that WASM has proven to not be able to protect [7].

The language used to create smart contracts on SOVM is our independently created scripting language, Elasticity. Elasticity solves the smart contract insecurity problems that have arisen in other WASM-based virtual machines by keeping constant the length of validation data so that faulty data or code can be easily identified and not executed when compiling. If the input data value is not sufficient in length, placeholders will be implemented automatically to properly adjust the length. Elasticity operates under the assumption that all length representations should use unsigned numbers when writing smart contracts.

We understand that there is a high barrier to entry to convincing developers to learn a new scripting language. Thus, at SONchain's launch, SOVM will be able to compile the following programming languages with Elasticity: Java, C/C++, and Python. SOVM will continue to support other languages in the future.

SDK (Software Developer Kit)

SONChain's SDK provides a complete front-end development framework, including a visual integrated development environment (IDE). We have integrated almost all client-side interface controls, which we have fully self-developed with no third-party framework.

The SDK provides developers with a cross-language, cross-platform development framework. It will be compatible with Java, C/C++, C#, and Python language development, as well as with iOS, Android, Windows, MacOS, and Linux platforms. On SONchain, developing software that runs on multiple platforms requires almost the same amount of time and intellectual capital as development on a single platform. The SDK also includes a complete communication framework, docking, and a set of scripting languages.

The goal of the SDK is to make the development process more in line with enterprise application software development practices. Using the SDK, developers will be able to quickly develop a variety of applications on SONchain. We also expect third-party developers to continue to add to the SDK as the ecosystem grows.

Parallel Processing

SONchain incorporates multithreaded, parallel processing to optimize throughput without jeopardizing other performance variables or the blockchain's state itself. Block producers will need to develop software to organize actions into separate shards in such a way that the determinism of the blockchain's state is not affected. For example, if two decentralized applications, such as a home rental market and a bike rental market, do not interact directly, it would be simple for block producers to separate each application's respective contract executions so that each event can be run simultaneously without affecting the state's determinism. There may be instances when the same account is involved in both of these applications within the same block, although developing software to alert these specific instances is also simple.

We are researching solutions to enable sharding that could be implemented directly into the protocol itself, thus removing the burden of organizing shards from the block producers.

Side Chains

Enterprises may wish to keep their data isolated from the mainchain for reasons such as increased privacy assurances. SONchain supports the creation of side chains. The node that acts as the auxiliary link (referred to as the auxiliary node) for a side chain will need to determine how to maintain that side chain's own consensus. The auxiliary node is assigned to the side chain at the formation of the side chain. Should the auxiliary node exit the network, the side chain will lose access to the main chain until it establishes an auxiliary link with another connected node. Side chains will have the option to use merge mining to leverage the security of SONchain.

There are two types of communication driven by a side chain: communication with the main chain and communication with another side chain. Communication

between a side chain and main chain is simple: the auxiliary node propagates its message to the other main chain nodes, and the main chain must come to consensus on its response to the auxiliary node. After the main chain's response is given, both the main chain and the side chain store the transaction onto their respective chains.

Communication between side chains proceeds as follows:

a. The communication request and the target information are broadcast on the main chain through the auxiliary node.

b. After the broadcasted information has reached the main chain node that acts as the auxiliary link with the targeted side chain (referred to as the targeted node), the targeted node will respond to the requesting auxiliary node alerting the requesting node of its response and identity.

c. After the requesting auxiliary node receives the response information, the two auxiliary chains can separately establish a communication channel for current and future communication.

d. After communication between the two nodes is completed, the result data is saved to the respective auxiliary links and their respective side chains.

Interoperability

Cross-chain interaction is currently the focus of research in the blockchain field, and further exploration is needed in terms of security, fraud prevention, data consistency, and efficiency. We are committed to creating light clients that allow for verification of our state without the need of processing all transactions ever created. Thus, we are seeking to create SONchain light clients with the highest utility using Patricia Trees. Patricia Trees allow light clients to interact with multiple nodes simultaneously without any risk of compromising the mission-critical deterministic properties of SONchain's state.

Because there will be multiple blockchains with high degrees of use, it will be imperative for SONchain to be able to communicate with them effectively, so that our users can partake in the entire blockchain ecosystem.

Privacy

SONchain uses a multi-level, comprehensive security protection to meet the high demands of our privacy standards. All types of messages between our users will be encrypted so that only our users, both consumers and enterprises, know what has been sent. Users will have the option to be provided with an anonymous transactional identity through the use of multi-party addresses and group signatures. Multi-party addresses combined with group signatures allow one user to send a message in such a way that the message appears to be sent from a group of users. There is no way for the outsider to know who in that group sent the message, nor can

an outsider see who received the message if the receiver also uses a multi-party address.

All transaction data and account statuses will be encrypted through Bulletproofs, which are a type of a non-interactive, zero-knowledge proof that require no trusted set-up [8]. We are also researching the trade-offs between the implementations of other encryption algorithms, such as zk-SNARKs and zk-STARKs.

V Go-to-market Strategy

By incorporating a light wallet and browser onto the SOMA and Coco messenger applications, we seek to reach users who are still mostly uninvolved with the cryptocurrency revolution but statistically show a high tendency to become involved because of their age and distrust in centralized institutions. All of our users will obtain a SEEDS wallet after the SONchain network launches. Assuming that only 2% of our users provide the necessary information to register a wallet on SOMA or Coco, our wallet and browser will become one of the most used portals in the cryptocurrency sector.

We also plan to heavily market the advantages of a cryptocurrency mobile wallet to the female population in the MENA region. In recent years, MENA governments have become significantly more progressive. For example, the Saudi Arabian government is currently giving women rights that have been afforded to women in developed nations for the past decades, such as the right to drive [9]. However, because woman have not been encouraged consume in Saudi Arabia, many have not actively used physical wallets in their lifetime. Additionally, women in Saudi Arabia tended to turn to their phones for social interaction because of all the time they were encouraged to spend in their homes. These factors make women in Saudi Arabia likely to be early adopters of digital wallets. As women in the region are given more encouragement to utilize and deploy capital, we will give them a way to securely store and use their capital without fear of recourse by a legacy system.

VI SEEDS Use Cases

SONchain's native token, SEEDS, will have numerous use cases in the SONchain ecosystem, ranging from the securitization of SONchain to the incentivization of certain user behaviors:

Mining

As discussed above, block producers will receive block rewards for securing the network. Additionally, it is very likely that block producers will be forced to lock a certain amount of SEEDS tokens in a smart contract in order to be voted to be a block producer.

Governance

SEEDS token holders hold exclusive rights for the governance of SONchain. The two most important features of governance include votes in the decisions on block

producer designations and SIPs. Should an account not feel comfortable with the responsibilities of governing a decentralized networks, that account will have the option to delegate their votes to another account. An account that has delegated votes will always have the option to recall its right to vote after the incumbent voting period is complete.

Cross-border Payments

SOMA's Middle Eastern users often work in different countries or continents from where their families live. This is a quite common user scenario that creates a large flow of foreign currency exchanges with high exchange fees for our users. SEEDS makes this kind of exchange significantly more convenient and cheap through our wallet implementations. The exchange from SEEDS to local currencies can also be implemented directly into our wallets.

Gaming Payments

The Middle Eastern population has shown tremendous passion for mobile gaming. Due to the hot weather and religious practices, the internet represents home, leisure, and wealth for a variety of young Middle Easterners. Instanza will continue to develop and distribute a variety of games. The monthly active users (MAUs) of our games broke 1 million people this year. Gamers will be able to make in-game purchases using SEEDS. It is also likely that a decentralized exchange for mobile gaming products will be built on SONchain, with SEEDS as the primary trading pair.

DApp Store Payments

SOMA will provide a DApp store with the frontend built into both SOMA and Coco. Payments for downloading DApps will be done in SEEDS. We expect a diverse group of decentralized applications to be built on SONchain.

Personal Loans Services

Although holding cryptocurrencies may raise the price in the short run, excessive hoarding can make markets become more vulnerable by creating excess volatility. Personal loans are optimal to counter this aspect of the cryptocurrency. A personal credit score will be calculated for all of users using transaction histories recorded by SOMA. Initially, Instanza will offer users with adequate credit scores loans in return for their cryptocurrencies as collateral. However, we assume that as the SONchain ecosystem grows, this service will become decentralized.

Direct Purchase of Goods

SEEDS will be used to purchase goods both within and outside of SOMA and Coco. We already have existing partnerships with popular Middle Eastern e-commerce pages such as awok.com, on which users will be able to use SEEDS to pay for items.

We plan on expanding our third-party partnerships and rewarding our partners by connecting them with users that they previously struggled to access.

Incentivizing Behavior

Behaviors will be rewarded through the use of a secondary currency, known as Gold. 10 Gold = 1 SEEDS. Unlike SEEDS, Gold is not divisible, and Gold can only be redeemed for SEEDS in multiples of 10.

The types of behaviors that will be incentivized are: onboarding friends onto SOMA or Coco, VoIP usage, mobile game promotion, and daily tasks that will drive increasing traffic our applications:

- Onboarding a friend onto SOMA or Coco will be worth 2 GOLD.
- A VoIP call that lasts 5 minutes will be worth 1 Gold. A VoIP call that lasts 10 minutes will be worth 2 Gold. In a world where cross border calls carry incredibly high rates, VoIP will drive traffic to the SOMA and Coco platforms as internet access expands in that region.
- Successfully sharing or challenging a friend to a mobile game will be worth 2 Gold.
- A messaging pair (meaning a sent and response message from two unique SONchain accounts) on SOMA or Coco every day for seven consecutive days will be worth 10 Gold.

These incentives will continue until the Ecosystem Rewards allocation (Section VIII, Token Distribution) has spent 33% of its allocated SEEDS tokens. At that point, SEEDS token holders will vote on what to do with the remaining 67% of that specific token allocation. Possible scenarios will be: to continue to incentivize user behaviors, to shift the allocation to the SONchain Foundation for the purpose of increased DApp development, or to airdrop onto all users (to provide a significant supply increase to augment liquidity on platforms or exchanges).

VII SONchain Decentralized Applications

The Value of DApps

High utility DApps are the most critical piece for the growth of SONchain. The demand for security on SONchain will grow proportionally to the transaction throughput of SONchain's DApps. Simply put, greater security is needed for greater value. Security on SONchain will be proportional to the price of SEEDS. The more expensive SEEDS are, the more expensive an attack on SONchain becomes. Thus, enterprises who utilize SONchain effectively will likely store value within SONchain, so as to invest into the security of their businesses. Because of our desire to create secure public infrastructure, we will create numerous in-house DApps and promote SONchain to third party developers in order to increase the human capital needed to improve our DApp ecosystem. We believe this promotion will be enhanced by our large young, user base in the developing world, which will be an attractive user base to mission-oriented blockchain developers.

Example: SONchain Identity Authentication

Internet Identity Authentication is a fundamental internet service that has become centralized. Facebook and Google serve as the backbone of online identity and in turn simplify end user experience by providing all login credentials from their own serves. On SONchain, self-sovereign identity authentication will become a fundamental use case as SONchain identity services will be easily integrated into legacy internet systems just as Facebook and Google authentication are. While self-sovereign identity merely acts as a parallel commodity to sovereign identity in the developed world, there is a strong desire for it in the developing world because of a distrust in sovereign entities.

SONchain identity services will store data securely on-chain using Bulletproofs, giving our users full control over their own digital identity, as opposed to giving centralized institutions over control over their valuable personal information. With strong identity service features, many other decentralized applications can be built that need to follow the appropriate Know Your Customer (KYC) or AML (Anti-Money Laundering) laws.

Example: Freelance Services Marketplace

We are also building a marketplace for hiring and selling freelance services relying on smart contracts to reduce the inefficiencies found within freelance services. Customers and freelancers usually agree to a payment plan similar to the following: half of the overall amount is paid upfront as a deposit and the subsequent half is due upon completion of the work. Smart contracts provide a means to transform this transaction into trustless service, providing protection for both buyers and sellers that popular payment options, such as PayPal, cannot provide.

Furthermore, user profiles can include a reputation section with reviews. Reviews will only be able to be posted by accounts that have transactions with the associated wallet of the freelancers. Authentic reviews can be accomplished while still preserving users' full privacy using Bulletproofs. This eliminates fake reviews and "blackhat" tactics to boost rankings found on other sites with similar marketplaces. All reputation systems within SONchain will be backed by the trustless and concealed identity services mentioned above.

VIII Token Distribution:
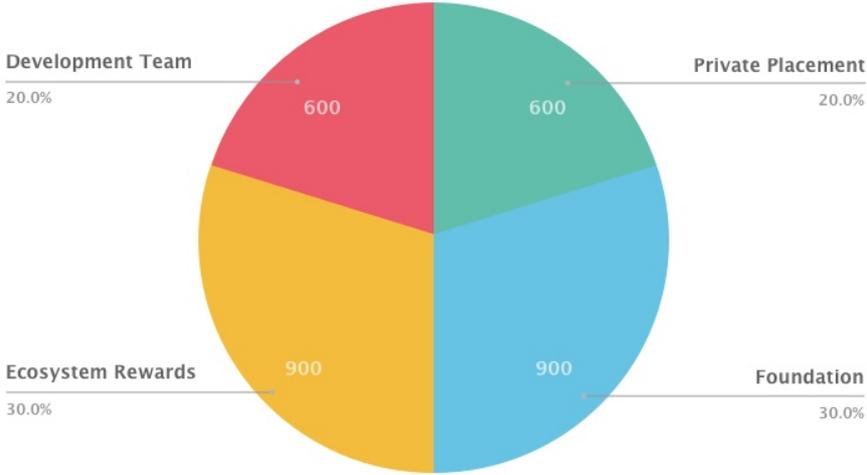
There will be an initial supply of 3 billion SEEDS tokens, distributed as follows:

- 600mn (or 20% of all) tokens will be issued in the first two rounds of private placement by invitation only. Unpurchased tokens will be allocated to the Ecosystem Rewards category.
- 900mn (or 30% of all) tokens will be retained in the SONchain Foundation. The capital allocated to the foundation will be used to build the SONchain ecosystem through marketing, acquisitions, DApp funding, and other business expansion opportunities.

- 900mn (or 30% of all) tokens will be allocated to the users. The tokens will be used to incentivize user behaviors that drive the adoption of the network. These incentives will continue until the Ecosystem Rewards allocation (outlined in Section VIII, Token Distribution) has spent 33% of its SEEDS tokens. At that point, SEEDS token holders will vote on what to do with the remaining 67% of tokens allocated to this category, the decision on which will likely depend on the success of the rewards system.
- 600mn (or 20% of all) tokens will be retained for and awarded to the development team. The token will be vested in four years with 150mn (or 5% of all) tokens released to the team in each year.

IX Token Repurchasing and Burning

SOMA and Coco are already applications with profits and positive cash flows. In order for the profit to be connected to the token value, SOMA and Coco will allocate 20% of their combined quarterly profit to re-purchase SEEDS tokens from the market. The repurchased tokens will be burned and cannot be recovered. After 30% of all SEEDS tokens have been repurchased and burned, the repurchase will end. The repurchase and burn mechanism will either provide price stability or upward price pressure on SEEDS, benefiting our ecosystem in either scenario. SOMA and Coco's future profits may not follow past performance, as SOMA and Coco are both adding features and transitioning to a decentralized infrastructure.

X Team

The SEEDS team consists of international individuals with experience and expertise in the blockchain industry:

Core Team

Andrew Bakst (Chief Executive Officer)
Andrew recently graduated from Stanford University, earning his B.S. in Product Design. Andrew has previous work experience as an entrepreneur in government technology, an associate in venture capital, and an analyst in private equity, but now spends his time researching and investing in crypto assets. He is also the CIO of Bizantine Capital, a hedge fund specialized in cryptocurrency investments, and advisor to IoTW Cryptocurrency.

Jay Mo (Chief Technology Officer)
Jay Mo is an opinion leader in network performance, distributed databases, and decentralized technology. He is a former Alibaba chief scientist and senior director from 2009 - 2013. Jay Mo lead the development of Alibaba IM (Taobao Wangwang), with over 500 million users, and over 30 million PCU (peak concurrent users). He was integral in the construction of Alibaba Cloud Feitian infrastructure and lead the development of Alibaba Cloud email. More recently, he is the CTO of the SOMA Instant Messenger application.

Dr. Mohammad-Hassan Al Emara (Head of MENA Region)
Dr. Mohammed-Hassan Al Emara is the co-founder of The Continental Group, a London based company which has developed several startup businesses including Continental Estates, which advises international clients on property related investments within the UK. The company has overseen over £100 million in contract exchanges since its formation. Hassan is a milestone achievement-driven individual with an attitude to succeed and the initiative to think outside the box. Completing a BSc in Biochemistry at King's College, followed by a MSc at University College London in Biochemical Engineering. Hassan went on to gain his PhD in alternative energy with the intention of implementing his research based finding of deriving carbon neutral biodiesel from microalgae to a commercially viable venture.

Alexander Wilhelm Lempka (Head of European Markets)

Alex is the CEO and co-founder of Coinounce, a Switzerland-based localization and marketing company assisting ICOs in their market expansion. He has acted as an advisor to ICOs and worked in various positions of companies in the FinTech space. He has an educational background from the University of Warwick and has acted as a blockchain enthusiast throughout the UK.

Sarah Austin   (Chief Marketing Officer)

Sarah Austin is a Forbes 30 Under 30, a seasoned entrepreneur, author, and award winning marketer. She is a graduate of Dominican University with a degree in Business Strategy, a certified Data Scientist from John Hopkins University school of Arts and Sciences and was one of the first to complete Stanford's New Media Program.

March Zheng (Chief Strategy Officer)

March Zheng recently earned in B.A. in Economics and Chinese at Washing and Lee University. March was an early investor in Ethereum, Neo, and Litecoin, and has become an active member of the crypto community, splitting time between California and Beijing. March is also the Head of Asian Markets at Bizatine Capital.

Roland Li (Chief Operation Officer)

Roland recently earned his B.A. in Economics at the University of Chicago. Roland has previously worked at KKR in Global Risk Strategies and as an investment analyst at Teng Yue Partners, before deciding to pursue a path as a day trader for cryptocurrencies. Roland is also the Head of Business Development at Bizantine Capital.

Other Notable Team Members

Olga Rogaleva

Olga is an employee at Instanza Capital, an investment arm under Instanza Group. The Instanza Group is the chief backer of the SOMA and Coco instant messenger applications.

Andrew Musk
Andrew is currently earning his B.A in Computer Science at UCLA.
He is the Co-Founder of Blockchain at UCLA.

Advisors

Adwa AlDakheel (Global Ambassador)
Adwa became the first place winner of three Capital Trading Market competitions, a professional guitarist, an author of a best-selling book in Saudi Arabia, an award-winning poet, a squash champion, and one of the most influential figures on Social Media in the GCC region all by the age of 25. In a recent study done on the most influential Social Media figures in the Middle East, Adwa was in the top three along with Ahmed Alshugairi and Thunayan Khalid. With a reach of over 2+ million individuals on social media, Adwa's content revolves around education, social responsibility, and lifestyle. In another study done by Ithraa Consulting Group, university students were asked if they had a role model, and 80 percent of the students answered Adwa Aldakheel - mostly due to her close age to these students. Because of her eclectic range of interests and subjects to discuss, Adwa's personality and content appeal to a large audience from all different ages and background.

Gordon Lu (Deputy Chairman)
Gordon Lu has been an avid technology investor as well as an executive director of numerous listed companies in the Chinese TMT industry. Before his proprietary business endeavors, Gordon worked at Goldman Sachs and China International Capital Corporation.

Alex Mashinsky (Vice Chairman)
Alex is a serial entrepreneur who has founded several notable technology firms in the United States. He was one of the first developers of Voice of Internet Protocol (VoIP), which has since been noted as one of the most significant internet protocols. Alex founded Arbinet in 1996 as a commodity exchange for telecommunication companies to trade unused long-distance minutes, Groundlink in 2004, and Celsius Network in 2018 as a secure cryptocurrency wallet and loan services platform.

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