Universal Basic Income

An EOS Blockchain Based Decentralized Application

Technical White Paper
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EXECUTIVE SUMMARY

Blockchain technology uses the concept distributed public ledgers that hold immutable data in a secure and encrypted way and performs multiple transactions simultaneously ensuring that they can never be altered. There are many examples of blockchain technologies today which are using this "distributed ledger technology" (DLT) and are exploring a broad range of uses like data storage, financial transactions, real estate and many more. Having mentioned that, these blockchain technologies lack the provision and capability of fulfilling the real needs of developers and end-users to contract together and more importantly, to develop and build large scale businesses.

The **EOS.IO** software introduced a new blockchain architecture designed to enable vertical and horizontal scaling of decentralized applications which is achieved by creating an operating system-like construct upon which applications can be built. The resulting technology is a blockchain architecture that may ultimately scale to millions of transactions per second, eliminates user fees, and allows for quick and easy deployment and maintenance of decentralized applications, in the context of a governed blockchain.

UBI is the Universal Basic Income decentralized application that runs on EOS blockchain which leverages human biometrics for security of the user and IPFS for decentralized data storage all running synergically, cohesively and seamlessly on the decentralized environment.

This paper narrates the vision, mission, values and software architecture of UBI which is built to serve a broad and diverse group of users with free market economy through blockchain.

THE BLOCKCHAIN TECHNOLOGY
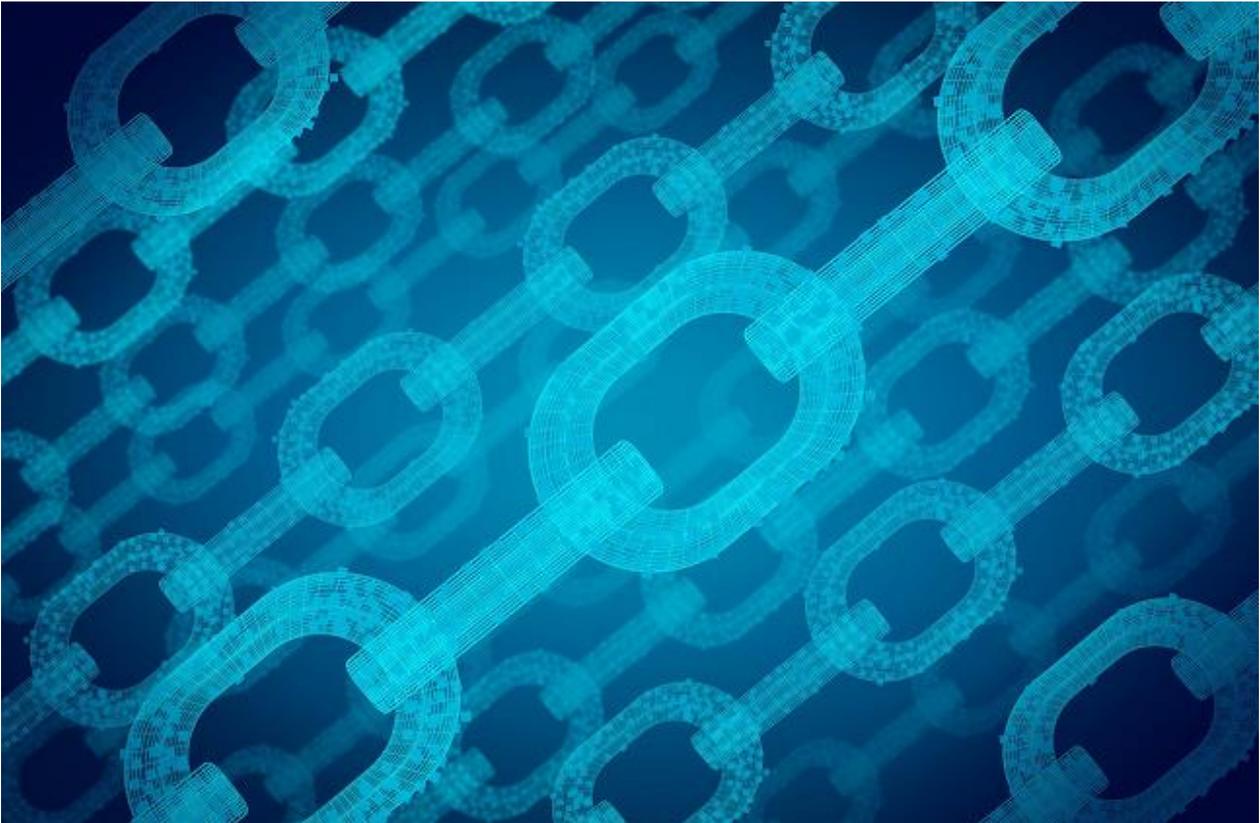
INTRODUCTION

Blockchain, sometimes also called as Distributed Ledger Technology (DLT), is a mechanism containing continuously growing list of records or digital assets of any kind, wrapped in a container called a block and then linked together using cryptography with other blocks. The blockchain is designed and managed in such a manner that it is unalterable requiring decentralized consensus of the network majority making it secure by design for the transactions or recorded data by minimizing the risk of alterations in today's digital world.

For better understanding of blockchain technology, take a simple example creating and saving a document online on the web to be accessed and modified for a group of people. When the document is created and the link to it is shared,

it gets distributed instead of copied or transferred. This creates a decentralized distribution chain that gives everyone access to the document at the same time while no one is locked out awaiting changes from another party and all modifications to the document are being recorded in real-time, and can be seen by anyone anytime and hence making the changes completely transparent and the document completely decentralized.

Of course, blockchain technology is actually more complicated than saving and sharing a simple document on the web, but this example is taken to illustrate the following critical ideas:

- Assets (sensitive data, transactions, documents, multiple files etc.) are saved digitally and distributed, making it completely decentralized and enabling full real-time access to everyone at any given time, instead of being copied or transferred hence avoiding any type of confusion for version mismatch (copy) or relying completely on a single entity for the access of digital asset (transfer).

- A transparent and distributed ledger of all the changes ever made to the asset which can be referred anytime, preserves integrity of the data digitally saved initially and then modified later as and when needed resulting in creating a high level of trust and providing full-fledged security to the asset.

History

 Blockchain technology was introduced in 2008 to provide a peer to peer electronic cash system and to serve as a public transaction ledger in the form of cryptocurrency, named as bitcoin. The purpose of bitcoin was to provide ultra-transparent ledger system to operate on, it also

seemed promising to fulfill the needs of both digital cash and smart contracts in the real world. While it captured the attention of digital currency investors and media as well but it failed to be proved to be useful enough in the business sector.

This concept of blockchain technology, by providing transparency and security in a unique way, got attention of many and a growing adoption in a number of areas, businesses and organizations. The result of which was the development of another blockchain ethereum, a combination of traditional blockchain and the feature of enabling the developers to create and execute the computer code i-e smart contracts. In other words, ethereum blockchain lets developers to create programs for the end-users that can perform multiple tasks and can communicate with each other in order to contract together and to build large scale businesses.

REAL WORLD EXAMPLES

Using this smart contract feature, ethereum programmers were able to create programs and code in order to create tokens representing any kind of digital asset, track its ownership and execute its functionality accordingly. Those file can be any media files, contracts of any kind, movie tickets or even a patient's medical record. This opened up the possibility of utilizing the blockchain technology in other sectors like media, government and identity security etc. Just like the understanding and awareness of blockchain technology, the utility of this ledger system will grow in direct proportion to the growth of the technology.

Today, many entities of almost every scale are currently looking for possible utilities and developing products and ecosystems that run entirely on the burgeoning technology. While ethereum was created as an attempt to fulfill the smart contract promise with an "unstoppable world computer", hundreds of other alternative blockchains or altcoins also made efforts to make small difference and made them seem louder in order to stand out in the competition. Even some of them, backed away from blockchain entirely and opted for other workflow solutions.

EOSIO

BACKGROUND

With the creation of bitcoin platform where transfer of values can be done over the internet without middlemen, banks or counterparty risk, this concept gave birth to the idea and possibility that if the blockchain technology could also be

used for the trade of multiple assets without the need for a broker or centralized clearinghouse. BitShares, in 2014 by Daniel Larimer, was introduced and presented a technology for enabling the trading of multiple asset, and has coined the term "decentralized exchange" (DEX). Currently, it supports trade not only in digital assets, but also traditional financial instruments and securities on the blockchain.

Since many developers and business makers strove for blockchain products in order to generalize the technology to support a wider range of applications on a single blockchain platform. Keeping that in view, a number of those platforms have struggled to support functional decentralized applications, application specific blockchains such as the BitShares (2014), the very first decentralized exchange (DEX) and Steem (2016), a social media platform heavily used blockchains with tens of thousands of daily active users. They have achieved this by increasing performance to thousands of transactions per second, reducing latency to 1.5 seconds, eliminating per-transaction fees, and providing a user experience similar to those currently provided by existing centralized services. These blockchains failed to provide a full-fledged provision and are not capable enough to develop and build large scale businesses and hence limiting so many businesses and industries to rely upon.

To overcome these issues, EOS, a performance-based and self-governing blockchain, was introduced that provides an operating system for building large-scale consumerfacing distributed applications. Additionally, a developer friendly mechanism and architectural structure having the capability of programming and execution of limitless applications, scalable and upgradable at any stage without having much hassle enabling the end-users to have a variety of applications and products to use.

PROBLEM

Bitcoin established proof of work over a shared or distributed ledger in which all parties hold a complete copy. This proved to be a lottery for many miners to determine who mines each block, tickets to which are solving highly complexed computation cryptographic SHA2 puzzle at the cost of high energy consumption using expensive and high maintenance hardware. The winner of the lottery is rewarded with a fixed amount of Bitcoin which is getting less and more costly at the same time as the difficulty is rising by with the increase in number of blocks mined. The fully shared ledger and the cost of proof of work, have offended many.

In Ethereum, gas is the cost of every transaction, the price of which depends on complexity on the transaction and network volume. It is a big obstacle from a business standpoint since companies and customers alike have to accept a certain loss of control. Also, creating applications and utilities like eBay, Uber, Whatsapp and Facebook etc. require blockchain technology capable of handling tens of millions of active daily users. In certain cases, an application may not work unless a critical mass of users is reached and therefore a platform that can handle very large numbers of users is paramount.

In other words, these technologies failed to be sufficient enough because of high transactional fees, high energy and hardware resources consumption and computational costs and also are not financially feasible for what developers and end-users actually need in order to contract together, inflexible for any size and type of business as needed. This, in turn, limited the horizon and have affected the enthusiasm of many, raising questions and confusions about the technology they were considering to apply and develop upon.

At the sametime, it created a monopoly of selected miners who are able to buy and maintain high-end top notch hardwares and mining machines and capable

of affording high energy costs and hence limiting the service for few to offer publically. Moreover, even for those selected ones, this service offering proved to be very less cost effective as the competition raised in time and more and more miners joined the league and hence dropping the mining rewards.

Hence having so many incapabilities and problems in the blockchain technologies, some of them which are mentioned above, the blockchain industry proved to be not at the stage where it is useful and practical enough for many businesses and also limited the developers to provide and serve with cost efficient, more secure and flexible softwares on the blockchain.

SOLUTION

In 2017, EOS.IO software was introduced as a smart contract blockchain platform under the administration of a native cryptocurrency EOS and was established by a private company called "Block.One". On Friday 1st of June, 2018 the platform was launched as open-source software for extensive distribution of the native cryptocurrency at the launch of the blockchain. The project quickly rose from just another blockchain project to compete with blockchain giant, Ethereum. EOS is so far the biggest ICO of all time raising a spectacular $4 billion in its funding rounds.

The EOS blockchain architecture was designed to enable vertical and horizontal scaling of decentralized applications which is achieved by creating an operating system-like construct upon which applications can be built. In addition of having the feature of creating and deploying smart contracts, it also creates fully decentralized applications that are indistinguishable from normal solutions. Some salient features of the software includes provision of accounts and their authentication, databases, and asynchronous communication etc. across many of CPU cores or clusters.

The result is a blockchain based software architecture that is already able to serve upto ten thousand transactions per second and can support and have the capacity of achieving even higher number eventually handling tens of millions of daily active users. Unlike Ethereum, transaction are feeless and instead of paying gas, users lease their tokens to cover bandwidth to pay for a transaction and hence eliminating user fees. For the developers, the EOSIO blockchain allows for quick development and deployment and also easy maintenance of decentralized applications, in the context of a self-governed blockchain. In other words, the idea behind EOS is to create and deploy scalable applications rapidly at ease and also to make them look like a utility as the standard solution.

TECHNICAL SPECIFICATIONS

To overcome with the challenging problems of the blockchain industry and to meet the needs and standards of the blockchain application as the standard, many features have been introduced in the platform. Thus, making the decentralized applications easy to create, cheaper to maintain and compatible with any business of any size in any sector.

SCALABILITY
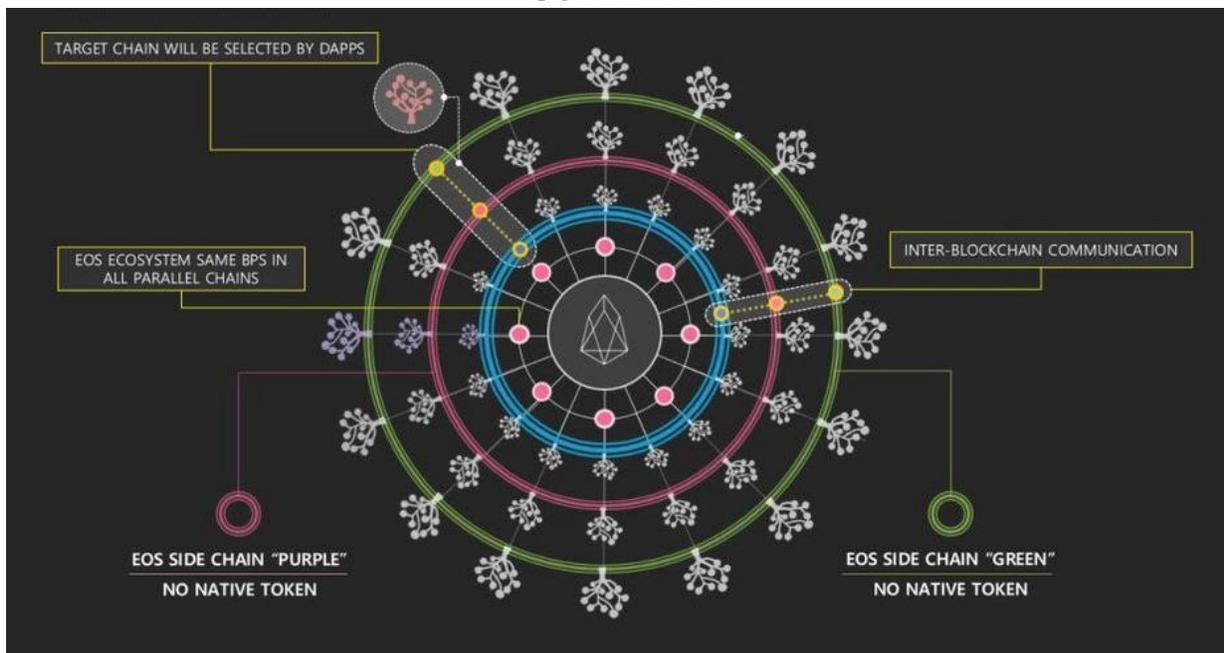
So far, Ethereum is able to achieve up to fifteen transactions per second, which is not yet efficient enough to compete with many businesses like eBay, Uber, Facebook and even any payment system such as visa. These applications and utilities process several thousand transactions per second on peak days with millions of daily active users. EOS.IO realized that for their decentralized applications to scale properly, they need to make changes and updates accordingly. For example, by maximizing their RAM usage.

To achieve this, the EOS.IO software is already enhanced and the modifications are made in a way that could multiply the number of processed transactions to 100,000 per second. An intriguing way that they are approaching this is by using side chains with independent memory regions. The concept is very simple, in essence, having a parallel chain which runs along with the main chain. The side chain will be attached to the main chain via a two-way peg. The EOS developers are planning to use side-chains to kill two birds with one stone, that is, to scale up and to create a sense of competition between the side chains.

Technically, the EOS block producers work on the side-chain of their choice and use the token to buy RAM from the side-chain. The side-chains will follow the governance protocols that have been laid down by the main EOS blockchain. Each of these sidechains can potentially have >1 TB of their own RAM. These sidechains will gain interoperability by having the ability to "talk" to each other via Inter-Blockchain Communication (IBC). Using IBC, Daps will have the ability to buy unused RAM from the other sidechains, which will result in the scaling of RAM usage.

Second motive of EOS for using side-chains is to build an environment of competition between all these sidechains which is aimed to achieve by giving decentralized application (DApp) developers the option to choose to operate on a sidechain where they are getting the cheapest RAM as the price of RAM is not

fixed across all the side chains. This will help incentivize the sidechains to offer the best value proposition.

FEELESS TRANSACTIONS

Most of the blockchain technologies follow the typical trend of charging fees for the transactions just like banks and exchanges etc. hence making it another challenge for blockchain implementation. With Ethereum, every transaction costs gas the price of which depends upon the transaction complexity and network volume. Typically, application developers are flexible to offer free services to the users and most people recommend the platforms and use the services where they do not have to pay which is not the case with most of the blockchains.

In EOS, transactions are fees free. Instead of paying gas, users deposits their tokens to cover bandwidth to pay for a transaction. In other words, the fundamental difference between Ethereum and EOS is that ethereum rent outs the computational resources for every transaction while EOS gives the ownership of those resources. However, it is possible to recoup the token coverage if we no longer want to provide our transaction by selling our tokens. The EOS.IO blockchain platform which is free to use for users will likely gain more widespread adoption while enabling the developers and businesses to create effective monetization strategies.

CONSENSUS MECHANISM (BFT-DPOS)

Among other better techniques to provide scalability and feeless transactions, EOS also has different consensus mechanism from Ethereum. Ethereum uses proof-of-work (POW), while EOS is a delegated proof of stake (DPOS) model, which is so far the only known decentralized consensus algorithm proven capable of meeting the performance requirements of applications on the blockchain. In Ethereum, each node has to solve a cryptographic hash puzzle in order to confirm a transaction on the blockchain which makes this proof-of-work

concept slow along-with consuming a lot of computing power and more importantly proving to be difficult to scale.

While in EOS.IO software using the DPOS algorithm, token holders on blockchain select block producers using voting system. Anyone can volunteer to produce blocks and will get the opportunity of the validating and producing blocks provided that the token holders vote for them. Each block is produced every half second by one selected producer at any given time, failing to which that block for that time gets skipped. This causes a half second or more gap in the blockchain whenever a single block or more gets skipped.

Beginning with using the continuous approval voting system, 21 unique block producers are chosen by preference of votes cast by token holders and they get their turns for the block production upon mutual agreement of 15 or more producers. Each of them validate 6 blocks as scheduled and hence making a round of production of 126 blocks (21 times by 6). In case any of the producers misses the block production within the last 24 hours, they are removed from consideration unless they notify for producing the blocks again within the same time limit hence making sure about the continuity of the operations on the network by rescheduling and ruling out offline block producers.

With EOS, using DPOS algorithm guarantees scalability and network performance where users don't have to wait for every node to confirm a transaction. Instead, users have to wait for fifteen of the twenty-one total nodes to reach consensus. This makes EOS very scalable and able to perform exponentially more transactions per second.

A DPOS blockchain usually does not face any forks since the block producers cooperate to produce blocks instead of competing with each other but the software using consensus gets switched to the longest chain in case there is any. This method works because the rate at which blocks are added to a blockchain

fork is directly correlated to the percentage of block producers that share the same consensus. Moreover, any block producer should not produce blocks on more than one fork simultaneously, and will get voted out in case they get caught doing that, in order to avoid abuse of block production.

Byzantine Fault Tolerance (BTF) is the characteristic which defines a system that tolerates the class of failures that belong to the Byzantine Generals' Problem and is the most difficult class of failure modes. It implies no restrictions, and makes no assumptions about the kind of behavior a node can have (e.g. a node can generate any kind of arbitrary data while posing as an honest actor). In EOS.IO software, asynchronous BFT is added to DPOS by allowing all producers to sign all blocks implicating that no producer signs two blocks with the same timestamp or the same block height. Once 15 producers have signed a block, it becomes irreversible. Any byzantine producer would have to generate cryptographic evidence of their treason by signing two blocks with the same timestamp or blockheight. Using this architectural model an irreversible consensus should be reached 100% within 1 second.

SMART CONTRACTS

Among other unique features of the EOSIO blockchain platform, the attributes and characteristics of smart contracts built on the blockchain are flexible, that is, they can be changed, or modified completely to suit each business case requirement. EOSIO blockchain platform comes with built-in smart contracts. Some of them are basic system contracts while others are sample contracts enabling the developer for RDAD (Rapid Decentralized Application Development) encapsulating the base functionality for an EOSIO based blockchain. Core blockchain features such as consensus, fee schedules, account creation and modification, token economics, block producer registration, voting, multi-sig, etc., are implemented inside smart contracts which are deployed on the blockchain built on the EOSIO platform.

THE UNIVERSAL BASIC INCOME APP - UBI

BACKGROUND

UBI App is a smart contract blockchain based platform, developed using Microsoft owned Xamarin and .Net technologies, built on the EOSIO blockchain software and powered by the UBI tokens. In addition to that, the app uses biometric, Microsoft Face API for the facial recognition in order to register and authenticate the users whenever requested.

The platform provides an ecosystem of services through an easy-to-use interface, connecting the users while allowing full transparency and traceability of transactions. Individuals, SMEs, Enterprises and many more will benefit from the services provided by the UBI platform.

To simplify the transactions and processes and increase UBI token adoption, UBI App will integrate several services in one single platform including transfers, transactions history for tracking transparently, referral bonuses and many more.

PROBLEM

In a free market economy, companies sell goods and services at the highest price consumers are willing to pay while workers also earn the highest wages companies are willing to pay for their services. The main purpose and goal of free markets is ensure that no coerced (forced) transactions exist or any conditions on transactions are applied unwillingly.

While in today's world, no pure free market economies actually exist, is has been observed that it could be a very positive and healthy relationship between free markets and measures of economic well-being. Currently there is no proper way for a free market economy through blockchain that can get access to billions of unbanked people without going through numerous process bureaucratic barriers.

A face remains the most widely used way of identifying or authenticating a person. A photo of it is on most identification documents that we carry in our wallets. A lot of information can be provided from a person's face, clothing, and appearance, and today a person's face has become the epicenter of the most fascinating and promising evolving forensic technology – face recognition. In the field of biometrics, perhaps nothing stirs up as much debate as face recognition.

While using technology to identify or verify a person has always been something easily understood in theory and considered as most secured component among other biometric components, ironically, in the past when a machine used to do that analysis, several issues come quickly to mind. For the general populace, privacy continues to be an ongoing concern. For organizations rolling out the technology, issues of accuracy and reliability continue to be a challenge.

SOLUTION

UBI makes this possible with the convenience of blockchain and security of distributed systems. The resultant application is the achievement of efforts for over 2 years of development to bring in cutting edge blockchain technology and a merger of decentralized cloud storage in interplanetary file system for enhanced blockchain based security in biometrical data for users.

UBI (2018)**,** also known as The Universal Basic Income decentralized application, tends to solve the problem by running on the EOS blockchain which operates as a smart contract platform and decentralized operating system by committing with the idea of and enabling developers for creating Industrial-Scale Decentralized Applications via a Decentralized Autonomous Corporation Model (DAC). The smart contract platform also intends to conduct millions of transactions per second as well as astringent security protocol in place.

The **UBI** application is a decentralized smart contract based solution which leverages human biometrics for security of the user and interplanetary file system (IPFS) for decentralized data storage, giving a very robust form of identity protection without any data loss or any room for data breaches, hence making the application running synergically, cohesively and seamlessly in the decentralized environment.

At the same time, unlike other blockchains, EOS blockchain provides fee less transactions where companies can offer their products and services and also for developers to create and sell services that don't costs their clients (companies) loads of amount.

Indeed, face recognition was far from a perfect science. While humans have always had the innate ability to recognize and distinguish between faces, computers have now also gained the same ability. In fact, better and more

efficient as they tend to provide the results immediately and with higher accuracy without having any memory doubts or confusions and also more reliable in terms of security as they are programmed to return the true results or values without having any unexpected perceptions about the facial data.

THE UBI PLATFORM
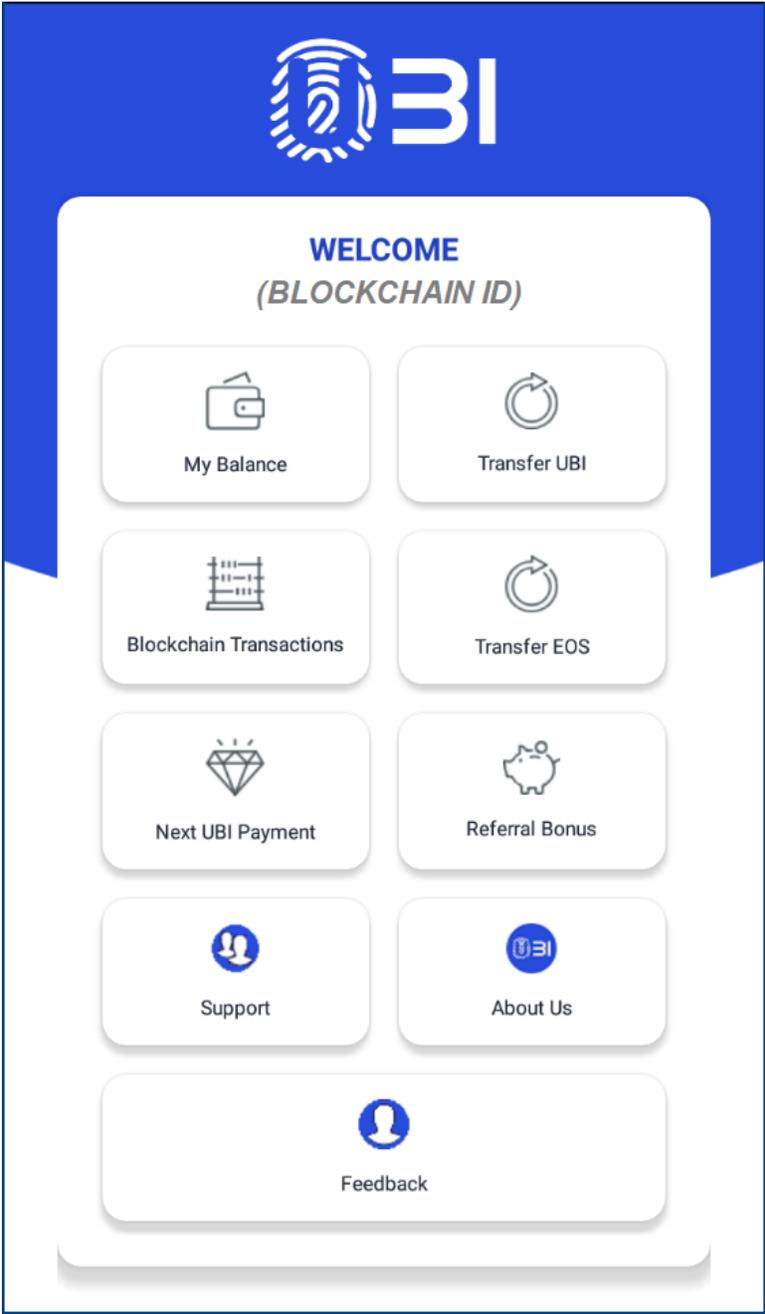
TECHNICAL BACKGROUND

In this era of technology, all the utilities and facilities have become accessible to the users on the palm of their hands making everything available to everyone around the world round the clock. The UBI app has been built for smart devices like Google's Android and Apple's iOS based devices while using the modern technologies of blockchain and artificial intelligence in order to achieve the team's goal efficiently in order to keep up with the latest trends the digital world and the future applications of upcoming generations in the fields of Artificial Intelligence and Blockchain technologies.

Since there are many options available to the developers for creating and developing smart phone apps, they lack of providing facility of programming of the applications for different operating systems using the same platform. Xamarin is a Microsoft-owned San Francisco-based software company having Xamarin.Android (formerly Mono for Android) and Xamarin.iOS (formerly MonoTouch), which are cross-platform implementations of the Common Language Infrastructure (CLI) and Common Language Specifications (often called Microsoft .NET).

With a C# (C Sharp) codebase, the UBI application developers opted for Xamarin to write native Android, iOS, and Windows application with native user interfaces and shared code across multiple platforms, including Windows, macOS, and Linux. This made them easier to modify, enhance and deploy within a single development environment without having to worry about synchronization of code enhancements and features addition and maintenance of the software as well.

Anyone realizing technology trends is well aware that we are in the period of huge AI breakthroughs right now with computers beating chess champions, tagging our family photos and finding an even lazier way to order our favorite

pizza on a smartphone. All the major technology companies are in the race and have achieved as well as still investing in the researches in order to proceed and to have better and better applications using AI.

Cognitive Services are a set of machine learning algorithms that Microsoft has developed to solve problems in the field of Artificial Intelligence (AI) by packaging it into discrete components making it easier for developers to use in their own apps. The UBI app uses Face API component from the set of MS Cognitive services for the facial recognition in order to register and authenticate the blockchain users.

The advantages of Blockchain technology are decentralization, immutability, security, and transparency. The blockchain technology allows for verification without having to be dependent on third-parties. The data structure in a blockchain is append-only. So, the data cannot be altered or deleted.

Bitcoin being one example of blockchain application, many sectors are being benefitted from the blockchain technology. Businesses, in particular, are trying to make use of this technology to reduce their costs and increase accountability. Having mentioned that, the UBI application is built as a smart token contract, with the symbol UBI for the tokens, on one of the two biggest smart contract blockchain platforms in the world, the EOSIO software.

BIOMETRIC AUTHENTICATION

Face biometrics is one of the processes on the app launch for detection and authentication of the user (new/existing) through the smart device's camera enabled UI screen. Upon granting access by the user for the required permissions, an image will be captured to get and process face minutiae at runtime and will be taken for further processing. Captured image will be used for processing using Microsoft Face API in the following order:

a. Detect if there is a face in the snapshot taken. If yes, then it makes sure the face is clearly visible and sufficient features are captured for the recognition software to use for further processing i-e for login or saving it as a new user.

b. Upon fulfilling the above, the photo taken will be sent again to the Microsoft API to see if the face is registered already or not, by matching face features with the saved faces database and returns the result to the app.

c. If the user selected "Register with Face blockchain ID" and a face is matched with any already registered person, then the app will take user to Dashboard screen by signing in his blockchain ID matching with the name used by the face else the user will be taken to register screen.

d. If the user chose "Login with Face blockchain ID" and the picture taken is found by the Microsoft Face API in its saved face database then the app will take user to Dashboard screen by signing in his blockchain ID matching with the name used by the face else the user will be prompted to take the snapshot again.

REGISTER AND LOGIN USING UBI FACE ID

To create an account on the UBI app, users must register by letting the app capture face for the blockchain id for the authentication and entering their account name. The backend performs of user registration on the EOS blockchain and the UBI Smart Token Contract and as well as the face registers the face to the Microsoft Face API provided that all the validations have been passed.

The validation for registering a new account on the blockchain includes an account name of having length of exactly 12 characters and can contain letters (a-z) and numbers (1-5) as per EOS blockchain account name requirement. If there is a referral account, the user account name validation and existence in the blockchain. Once the validation is passed, the system performs the following tasks for the registration:

- Creates the user account using the account name entered into the EOS blockchain. Registers the face in the Microsoft Face API database by uploading the image captured at the time of face detection.

- Issues UBI tokens to it as initial sign up bonus. If there is a referral account mentioned, the system transfers the UBI tokens to both referee and the referral account in the blockchain as the reference bonus.

Login process is quite easy and the dashboard or Home screen of the blockchain user shows up after successful login using Face Authentication of the returning user or after successful registration of a new user into the blockchain and Microsoft Face API database. The functions available to the UBI smart contract blockchain user, include transfer UBI tokens, transfer EOS tokens, get transactions history etc.

UBI Tokens Transfer
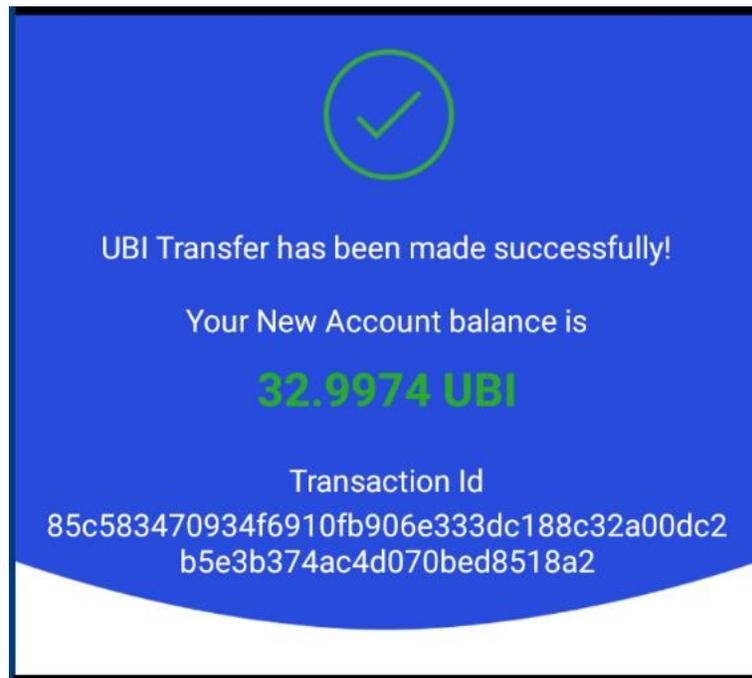
UBI aims for creating a vibrant and engaged community for the future success of the consumer sector. It will help users to connect with all the actors involved in the business sector, providing them with tools to facilitate different types of collaborations.

The easy to use user interface also enables the users to transfer UBI token simply by entering recipient's blockchain account name and number of UBI tokens they wish to transfer. This enables the users to exchange tokens for goods or services provided by the companies and individuals.

Upon validation of the account's name and minimum balance availability of UBI tokens to transfer, the app transfers mentioned UBI tokens and in return shows the result status, new balance and the transaction ID of the transfer to the user.

TRANSACTIONS HISTORY

HISTORY

72729451 2020-01-27T20:47:08.500 50
78BC197C25B75F3C71C246F4225EB173F91F8
F40F0CEA7EBD67378C145FC55F6

72729452 2020-01-27T20:47:09.000 6
D3D78319685C8997599A2C1B40A3694C7682
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72729730 2020-01-27T20:49:28.000 1
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72738617 2020-01-27T22:03:32.000 1
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73392134 2020-01-31T17:17:34.000 1
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73399379 2020-01-31T18:17:57.500 1
774FFBA308F0F43745E7E5E77F3EA2E4A6E22
9E706C704F51629C97B38885D55

73399517 2020-01-31T18:19:06.500 1
A2D2282E47570DEC3876E634565B4B51F86D

Blockchain databases are always growing every second continuously. As every half second a new block is found having data and so many records of transactions, the blockchain databases becomes even and infect ever longer. Since these ledgers keep on growing and adding up in the blocks and eventually in the blockchain, bulk of data can easily grow in terabytes or even more within few years.

At the same time preserving, maintaining and providing access to those sensitive records whenever required is of course a must and a common practice in today's technology world. While providing this feature of accessing this forever growing scalable historical blockchain data is a basic necessity for many blockchain applications, it is actually one of the more difficult challenges for the blockchain

technologies to deliver efficiently and smoothly without network interruption or any other type of expected lag.

Since in a blockchain database, the transaction history is so large that special application tools which are intense enough and must be resource friendly are required by the developers to create and provide high performance solutions for accessing the historical data.

The UBI software platform provides the users to access the history of records and transactions of the user account, as and when required, from EOS blockchain by requesting it from History API URL and passing parameters like the blockchain account name, number of transactions to return, sort order, filters (if applicable) etc. The return result is then read as string and then split using delimiters and the information is parsed and displayed to the account holder.

EOS TOKENS TRANSFER

Since, the EOS.IO software allows accounts to be referenced by a unique human readable name of up to 12 characters in length chosen by the creator of the account. It's just the RAM which is required to store the new account which must be reserved by the creator of that account. Usually the cost of account creation for a new user is paid by the decentralized application developers which should be nominal as already businesses tends to invest a lot amount of money averaging each potential customer in the form of advertisement, offers, free services etc. So the cost of funding a new blockchain account should be insignificant in comparison for them.

Luckily, in EOSIO blockchain platform, same account created by other application can be used across the blockchain there is no need to create accounts for users already signed up by another application. This enables the UBI app to create the

account which can be used not just from within the smart contract application but across the whole blockchain and other apps running on it.

Hence, just like UBI tokens transfer, the smart contract app is also capable of facilitating the account holders to transfer their EOS tokens to other accounts from within the app itself, regardless of how the recipient's account was created in first place.

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Token Economy

1. Issue

Total Tokens: 210.000.000
Maximum number of tokens per team: 25% = 52.500.000
The maximum number of tokens for investors and advisers: 10% = 21.000.000
The rest of the number of tokens = 65% should belong to the audience of the project, since the project is built as a base income, everything should be as transparent as possible.
The maximum circulation of tokens in 1 month of trading: 15% = 31.500.000
Market capitalization at a price of $ 0.01 = $ 315,000 (which will greatly attract attention)
Price for IEO: 0.01 $ and at listing

Token Economy

- ■ Team
- ■ Investors and Advisors
- ■ Project Audience
- ■
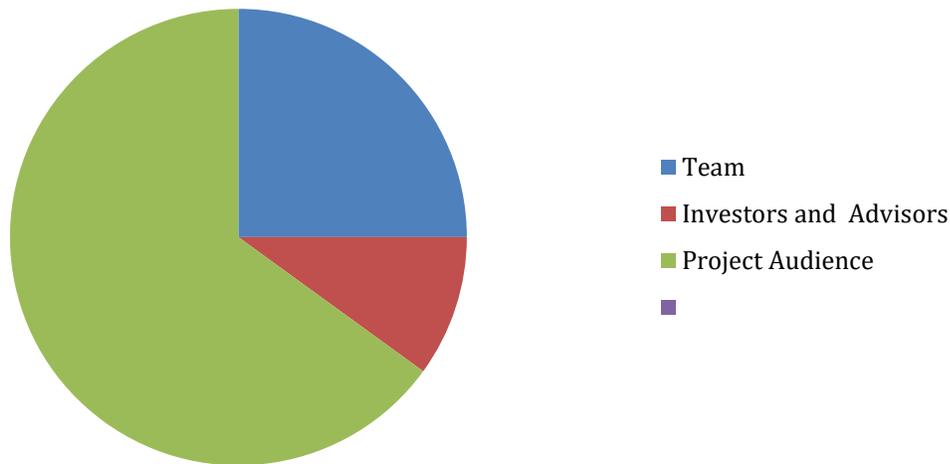
Token lockup periods

1. 15% of tokens offered for sale during the IEO will be available immediately on the first day of trading.
2. During the first year of the trading year (12 months after listing) 20% of tokens will be released, which will be 35% of the entire issue.
3. 10% of tokens released in the first year will comprise team tokens as well as 5% of investor tokens and 5% of tokens from the main reserve.
4. Within 2 years, 15% of tokens will be released and the total issue will be 50%.
5. Of these, 5% of investor tokens, 10% of tokens of the main reserve team.
6. The remaining 50% will be released in equal shares over the next 12 years at 5% each year.

| 1 year	2 year	3 year	4 year	5 year	6 year	7 year	8 year	9 year	10-12 year
35%	50%	55%	60%	65%	70%	75%	80%	85%	90%-

									100%

The token economy did not include the allocation of tokens for such options as marketing, bonuses, and so on, as the team's tokens will be intended for the further development of the project.

The team will conduct marketing, public relations campaigns, the introduction of UBI in the poorest countries of Africa and India due to their tokens.

Thus, the entire community can observe the development of the project, payments without a corrupt system.

Lockup Period
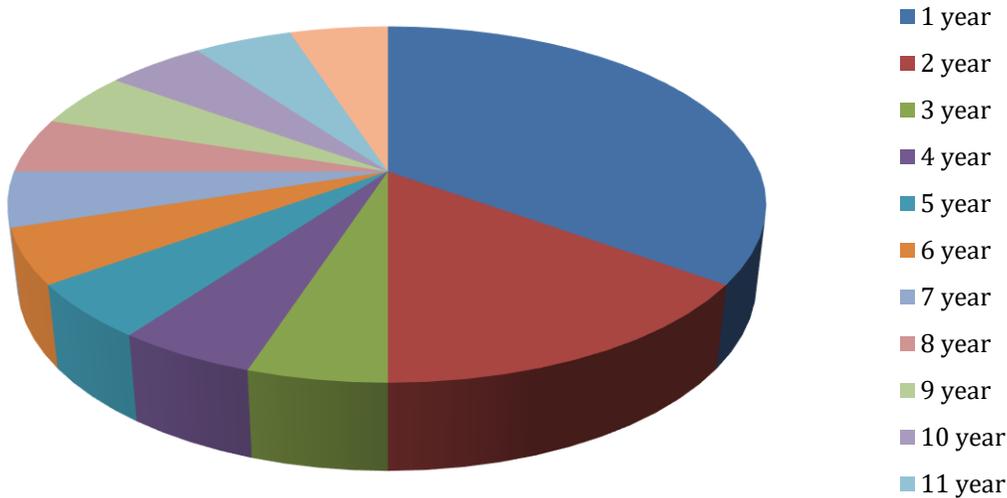
In the future, when more countries are introduced into the UBI system, the number of tokens can increase, for example, 1: 10 tokens, but will not undergo additional emission, which would lead to the depreciation of the project and the team's corruption.

UBI research in the world

Namibia

From January 2008 to December 2009, residents of Omitar and Ocivero (about 1000 people) received 100 Namibian dollars a month. The pilot project is organized by BIG Coalition (Basic Income Grant Coalition). All residents under the age of 60 received a basic income grant of $ 100 Namibia per person per month without any conditions. The grant was given to each person registered as residing there in July 2007, regardless of his social and economic status.

After the completion of the Pilot Project, a monthly allowance of $ 80 from Namibia to all those who participated in the pilot project was regularly paid until March 2012.

The results of the pilot project proved the pilot's effectiveness in combating poverty, stimulating social development and accelerating local economic development. The pilot's impact was spectacular: poverty and malnutrition among children declined sharply, while school attendance increased and the use of a local clinic increased. In addition, economic activity has increased significantly, and crime rates have declined.

India

The project to pay unconditional money transfers of the main income was carried out in the Indian state of Madhya Pradesh in 2012 - 2013.   To differentiate the project results, two experiments, funded by UNICEF, coordinated by SEWA, were conducted. Small unconditional monthly remittances of the main income were carried out within 12-17 months. Recipients of more than 6,000 people.

Pilot, 20 villages:

Comparison group: 4 villages controlled by SEWA received payments, bank accounts for men, joint accounts for women.
Comparison group 2: 4 villages not controlled by SEWA received payments, bank accounts for men and women.
Comparison group 3: control group, 6 villages controlled by SEWA did not receive payments.
Comparison group 4: control group, 6 villages not controlled by SEWA did not receive payments.
Initially, in the main pilot, each adult received 200 rupees per month, and each child received 100 rupees per month (paid to the mother / guardian). A year later, the amounts were increased to 300 rupees and 150 rupees, respectively.

Tribal pilot, 2 tribal villages controlled by SEWA:

1 comparison group: 1 village, received payments, received payments in cash, both men and women.
Comparison group 2: control group, 1 village, did not receive payments.

In the breeding pilot, payments were 300 rupees per month for each adult and 150 rupees per month for each child for the entire period of payments - 12 months.

Impact on recipients was evaluated using several rounds of statistical surveys. In total, more than 15,000 people took part in the polls.

Results in brief: main income had a strong positive impact on the welfare of recipients in terms of living conditions, improved sanitation, food, health and school education, and also had a strong economic impact in terms of increasing earned income, increasing productive labor and increasing assets. Payments had a significant impact on reducing debt, increasing savings, providing financial security to more people and gaining the ability to make decisions for themselves.