



junca Network ^{v0.5} Whitepaper

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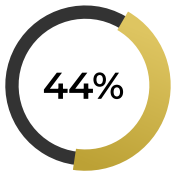
INTRODUCTION

Blockchain networks and cryptocurrencies that are built on top of them are becoming a more common technology to be used by many people across the globe daily. The world has seen more than ten years of continuous improvement and growth of variety of choices in this market, which is gradually moving to the point of maturity and widespread adoption. junca project aims to utilize the blockchain technology to tackle the drawbacks of the existing financial system and make it easier for people in Philippines and abroad to gain financial freedom and make financial transactions easier and at a lower cost.

As the global goal junca sets to purify all spheres of life with beauty as a result bringing more harmony and joy to the daily lives of people. junca Network will reflect this vision by creating a foundation for a better financial life.

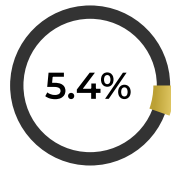
Problem statement

Population



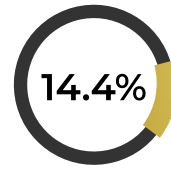
the population of 109,800 is under 19 years old

Unemployment rate



according to the PSA, the domestic unemployment rate as of 2019

Unemployment rate of young people



the unemployment rate of young people (15 to 24 years old) is high

Junca project is having its origin in Philippines as one of the countries in Asian region to demonstrate a rapid economic growth and stimulus, but nonetheless having its own problems that Junca will aim to resolve. In the Philippines, 44% of the population of 109,800 is under 19 years old. Compared to Vietnam (35%), Indonesia (36%), Thailand (27%), and China (24%), the proportion of young people is high and the young people of Philippines should have access to better financial opportunities without the need for a bank account. On the other hand, according to the Philippine Statistical Office (PSA), the domestic unemployment rate as of 2019 was 5.4%, which is below the standard number of working hours, and those who wish to work longer and are in a state of being able to work longer. The ratio is 13.9%, which is the lowest unemployment rate and underemployment rate since 2005. However, the unemployment rate of young people (15 to 24 years old) is high at 14.4%.

The Philippines is also said to be the world's largest exporter of labor, and about 10 million people, or one in ten people, live abroad. International remittances such as remittances to domestic families are increasing year by year, and the scale is projected to reach 100 billion USD in the future. However, due to the high remittance fees that accompany it, the current situation in which funds that should originally come into the Philippines are flowing overseas is not only a dissatisfaction for people, but also a major issue for the Philippine government.

Outline of the Vision and Values

junca Platform will have among it's core, but also a system for donations, education support and startup equity crowdfunding in order to support the youth in Philippines and across the South-east Asia with the expansion of it's operations to other countries. junca Network will include all core financial utilities and provide opportunities for financial freedom for people of all ages through the use of efficient blockchain technology with democratic governance.

junca Chain is the distributed ledger of junca and which allows for cheaper and faster transaction execution comparing with existing blockchain networks. All of the features and products combined in the junca Network will have direct impact on the lives of it's users and the participation in this innovative environment will bring the values of junca to many in Philippines and abroad. The main goal of junca is to bring beauty to the world, which is achievable when the vital necessities are met.



JUNCA NETWORK

Junca Network consists of different products and services under the Junca brand. The core is Junca Chain – a layer 2 blockchain which has a full compatibility with Ethereum mainnet but at the same time has major improvements in terms of speed and cost. The Junca Platform will consist of blockchain protocols and tools to support the financial ecosystem of Junca Network and at the same time provide instruments for social applications, crowdfunding and voting directly on Junca Chain.

To fuel this whole ecosystem, Junca Cash will provide the currency of the Network – JCC and also the stablecoin with 1:1 peg to Philippine Peso. Both JCC and the stablecoin will play a key role in the development of the payment system of Junca which will include a branded card for instant transactions from a crypto wallet instead of bank account, QR code payment system, merchant terminals and ATMs all focused on transactions with Junca Cash and based on Junca Chain ecosystem.

Junca Chain

Junca Network is a scalable blockchain, which is using Proof-of-Stake Voting (PoSV) consensus mechanism, which is a blockchain protocol based on PoS but also includes a mechanism for fair voting, strict security guarantees and uniform probability.

Consensus has the following key characteristics: Double validation for higher security and reduction of blockchain fork risk Randomization guarantees security and prevents handshake attacks Junca Network is an EVM compatible blockchain using PoSV consensus and at the same time allowing to deploy any smart-contract written for Ethereum Network with almost immediate transaction confirmation time. Thanks to the PoSV consensus mechanism, the performance of the network is: 2000+ transactions per second, while increasing the network security by utilizing double confirmation 2-6 sec. time for transaction processing and confirmation time within 4-6 sec.

Proof-of-Stake Voting (PoSV)

At the heart of junca Chain, the Proof-of-Stake Voting (PoSV) consensus enables junca Chain as an EVM-compatible and scalable public blockchain, on which every Ethereum smart contract can be effectively run with almost instant transaction confirmation.

- PoSV features its Masternode architecture in which token holders deposit 50,000 JCC to become a Masternode Candidate and receive votes from other token holders.
- The most voted Masternode Candidates are selected as Masternodes for block creation within a period, called epoch.
- Each Masternode takes its block creation in a round-robin manner every 2-second and follows the double validation technique for security reinforcement.
- A block is finalized if it is signed off by 3/4 Masternodes.
- At the end of each epoch, the Masternodes that have signed finalized blocks are rewarded.
- Voters who voted for those Masternodes will also be rewarded.

Token standards

In every blockchain ecosystem the token functions as the central element of a new type of economy. A token standard defines a set of rules that governs its issuance and use.

You may be familiar with ERC (Ethereum Request for Comments), which is a technical standard used for smart contracts on Ethereum. This terminology is the origin of JRC tokens – the equivalent of ERC on Junca Network.

Fungible and Non-fungible token

- There are three token standards on Junca Network, each with its own unique function including JRC20, JRC21, and JRC721.
- These token standards can be divided into two different categories: fungible and non-fungible tokens.
- Fungible tokens are all equal and divisible, non-fungible tokens (NFTs) are all distinct and non-divisible.
- Non-fungible tokens of the type JRC721 are those that represent a unique asset, like a certificate or a collectible in-game item.
- Fungible tokens are interchangeable and can be divided into smaller token units like JCC.
- The fungible token standard includes JRC20 and JRC21 as digital assets used to offer access to products and/or services on a platform.

Comparative characteristics of tokens



JRC tokens are the ERC equivalent of Junca Network

The table below compares the differences between three types of token standards on Junca Network.

	JRC721	JRC21	JRC20
Divisibility	Non-Divisible	Divisible	Divisible
Technical requirements for Dapp integration	Moderate	Moderate	Low
Technical requirements for exchange listing	N/A	Moderate	Low
Transaction Fee	In JCC	In Transaction Token	In JCC

JRC20 – Easy integration

JRC20 is an equivalent token standard of ERC20 built on top of the Junca Network blockchain. JRC20 token holders would need to hold a small amount of JCC to cover the extremely low transaction fees. JRC20 wrapped tokens can be easily integrated into other Dapps and get listed on exchanges. More Dapps and projects on Junca Network are expected to be integrating and utilizing JRC20 wrapped tokens in the future.

JRC21 – Frictionless Experience

JRC21 creates a frictionless experience for non-crypto users by allowing token holders to pay transaction fees by the token itself without having to hold any JCC in their wallet. JRC21 wrapped tokens can be traded on decentralized exchanges on Junca Network.

JRC721- Non-fungible token.

Non-fungible tokens (NFTs) are all distinct and special. Every token is rare, with unique characteristics, its own metadata and special attributes. Most of the time when people think about NFT, they refer to the successful CryptoKitties game as the standard for crypto-collectibles. However, there are many other applications for JRC721 tokens.

Double Validation

Master nodes don't have equal responsibility for the network operation and stability maintenance. A full node should be running on powerful hardware and have a high-speed internet connection in order to provide the resources needed for achieving a required confirmation time of less than 2 seconds. Only the master nodes can create, validate and sign blocks.

In order to achieve this, the consensus mechanism relies on the concept of Double Validation, which is an improvement upon Single Validation which is commonly used in other consensus mechanisms.

Double Validation (DV):

Similar to some other existing blockchains based on Proof-of-Stake, each block is created by the master node, which gets the permission for creating a block following a predetermined circular sequence of master nodes for each epoch. In such a model, the DV requires the two random master nodes to sign the block in order for it to be propagated to the blockchain. One of the master nodes is the block creator, the other one becomes the block validator and is chosen randomly among the number of voted master nodes, therefore verifying and signing the block. For greater convenience, the block creator and block validator master nodes are used interchangeably. The created block is confirmed only when the condition of block signing by both block creator and block validator master nodes is met.

The Double Validation method increases the stability of the blockchain, and reduces the probability of creation of "junk" blocks, at the same time maintaining the security and uniformity of the system. Randomization of block validators used in DV is a key factor for reduction of risk coming from the paired master nodes which try to sign malicious blocks. Apart from that, compared to other public blockchains, the use of DV method significantly improves the block time due to only two signatures per block.

Randomization mechanism

This new method considerably decreases the probability of getting a false block in the blockchain. Master nodes are the full nodes of the network that hold the full copy of the whole blockchain, create new blocks and maintain the chain in sequence. It is notable that the network does not have miners like Bitcoin and Ethereum networks which utilize the Proof-of-Work consensus.

In Junca Chain only the master nodes can create and validate new blocks, also the master nodes are being accounted and communicate by the following parameters:

1. CPU/Memory graphs providing master node load, the number of signed blocks which indicate their labor productivity and the last signed block which determines their last activity.
2. Power. The master nodes that have the best performance take the lead in the block processing order. All weak master nodes will eventually be destroyed and replaced. This way, only the strongest master nodes will remain in the system.

Bridge

In order to interact with other Layer 2 chains, due to lack of direct connection between the networks on the hardware and protocol levels, the Bridge is being used as a solution for efficient execution of requests for transfer of tokens between the networks.

It is important to note that the user's wallet should be determined ahead as well as the uniformity of the token to be transferred between the networks. For example, a transfer can only be made for Token 1 (Network 1) to Token 1 (Network 2), the transfer of Token 1 (Network 1) to Token 2 (Network 2) is not possible to make directly. The routing and the identification of the network for exchange is happening on the server side using the interface. When sending a token from one network to another, it is being burned in Network 1 and minted in Network 2.

junca Platform

junca Platform is a set of products, services and protocols that are developed by junca for applications within its own blockchain and which allow the members of junca Network to openly collaborate and contribute to the Network and build on junca Chain.

Products

JCC Staking

JCC staking service provides an opportunity to gain passive income by supporting junca Network and staking JCC token to master nodes with an estimated APY of 5-10%. It is an incentive for platform users to trust the platform with their money and get a considerable interest on their investment. JCC staking alone can provide more yield than most banks give for deposits.

DEX

Decentralized exchange will allow users to seamlessly convert crypto assets on junca Chain with low transaction fee and high execution speed. Swap is the fundamental feature of decentralized exchange, but junca aims to employ Automated Market Making (AMM) mechanisms and liquidity pools for purposes beyond currency exchange.

Yield Farming

Yield Farming or otherwise known as Liquidity Pool Staking will allow users of junca Platform to become liquidity providers for the junca DEX and receive interest in return for their funds being in the pool used to support exchange transactions. Yield farming APY is recalculated constantly, but the goal is to keep the returns in the range of 20-50%.

Borrowing/ lending

For an economic system to function properly there needs to be an ability to borrow and lend money on a large scale. junca Platform will provide a peer-to-peer borrowing and lending protocol, which would allow lenders to gain additional interest from their crypto and for borrowers to receive credit at rates lower than retail banks offer.

NFT marketplace

Non-fungible tokens have seen a lot of attention from the global crypto community and applications of NFT now went far beyond digital art and are much more applied to the real-world needs of token holders. Users of junca Platform will be able to buy and sell digital art and collectibles, purchase items with product authenticity validation, tickets and other goods with verifiable uniqueness. One of the proposed use cases for NFTs in junca Platform is to use this type of tokens to register licenses and certificates, which can be securely stored on the blockchain and used within junca Network.

DAO

Decentralized Autonomous Organizations (DAO) are considered to be the next evolutionary step for democratic decision making among a large number of actors within a single organization. Many blockchain projects use DAO mechanisms and governance tokens in order to collaboratively decide the direction of further development of their project. junca Platform aims to make it easy for anyone to create a DAO, issue a currency and use it to organize any type of economic activity or promote a certain initiative. For example, DAOs can be used for transparent donations, education support and startup equity crowdfunding as well as a multitude of other financial and non-financial applications where voting and collaborative decision making is required.

Oracle

It is hard to run blockchain applications using only the data that originated within the blockchain itself, therefore a mechanism is needed for external data to be used by smart-contracts on junca Chain. Oracles serve this purpose and such feature will be added to junca Platform in order to provide a way for validation and use of external data sources in junca applications.

File storage

Decentralized file storage is also among core features to be added to junca Platform and is an alternative to common cloud storage solutions, but has benefits such a data deduplication, immutability and can also serve content for the applications built on junca Chain.

JNS (junca Name System)

The wallet addresses in blockchain networks are long alphanumeric sequences that are randomly generated and almost impossible to remember. To make the discoverability of addresses easier Junca Name System will be implemented in order to make searches and token transfers to domains that are human-readable and can be easily remembered.

Services and protocols

Services

Scan

junca Scan provides a user-friendly interface to explore the junca Chain blockchain. From a user perspective, junca Scan provides transparency because all block information, transactions, finality, smart contracts, Dapps and token information are read from junca Chain and displayed here. Furthermore, junca Scan offers technical visualisations and useful statistics about junca Chain performance, token holders and other functionalities.

Master

junca Master is the 'Governance Dapp', provides a professional UI that lists all Masternodes and Masternode Candidates. Users can vote for Masternodes, see Masternode performance statistics, and deposit 50K JCC to become a Masternode Candidate.

Among the features of junca Master are:

- **Candidate list.** The candidates list includes every Masternode with enough deposited tokens to run a Masternode, as well as those who resigned running a Masternode. A candidate is required to be one of the top 150 most voted Masternode candidates on this list to become a Masternode to earn rewards. Voters can use this list to help choose which Masternode candidate(s) they would like to stake their tokens to.
- **Voting.** Voters who want to stake their tokens to a Masternode should simply click 'Vote' on the respective Masternode and follow the instructions presented.
- **Unvoting.** If you do not want to support a Masternode you voted for, you can unvote from it by clicking the Unvote button on the Masternode's page and enter the amount of JCC you want to unvote.

Stats

junca Stats shows various metrics regarding the current Mainnet including the current number of Masternodes, Masternode performance, current TPS, block-time, confirmation time, finality and other useful metrics.

Issuer

junca Issuer provides a friendly user interface and back-end mechanism to issue JRC20 & JRC21 tokens in only a few steps.

The key features of junca Issuer are:

- **User-Friendly Interface:** Issue a JRC20 or JRC21 token in only a few steps.
- **No Coding Experience Required:** No prerequisite knowledge about smart contract programming is needed.
- **Token Customization Options:** Customize the token supply, token name, and minimum transaction fee through junca Issuer's dashboard.

Relayer

junca Relayer is a DEX portal which follows junca Chain's design and interacts with the underlying junca X protocol. By using junca Relayer, anyone can propose their own decentralized exchange by depositing 25,000 JCC. The design used in junca Relayer assists the owners in monitoring, analyzing and controlling digital assets on their exchange platform with a professional dashboard.

Key features of Relayer:

- **Interoperability:** Enables trading of any JRC20 or JRC21 asset. Any token that follows these standards can be traded on a Junca X-integrated DEX.
- **Professional Dashboard:** Provides information management that tracks the key performance of your DEX.
- **Liquidity Network:** Provides one giant tradable order book for every token. Whether you're trading on the most popular exchange or the least popular exchange, the token order book will always be the same.

Protocols

junca X

It is a secure and efficient permissionless decentralized exchange (DEX) protocol that empowers a diverse system of DEXs, MM providers, and independent projects to work together in a decentralized manner. junca X is integrated into the core layer of the junca Chain blockchain consensus and is in charge of order matching and execution. A DEX in junca Chain's design interacts with the underlying junca X protocol and will send/receive trade orders to/from DEX, which processes these trade orders.

DEX operators using junca X protocol can focus on marketing strategies to attract traders instead of worrying about the technical issues of maintaining an exchange. In addition DEXs on junca X are non-custodial, making operations less risky.

junca Z

It is an on-chain protocol that allows any token holder to transfer tokens without holding JCC in their wallets. Users pay transaction fees with the same token, which is converted to its JCC equivalent behind the scenes to power the network. The transaction fees will be paid with the token the user is holding.

junca Z removes the friction of having to hold native blockchain coins/tokens to send to other wallets or to interact with Dapps. Issuing JRC21 tokens with junca Z, users will have a smooth experience without even knowing that they are using blockchain technology.

It is important to note that JRC21 tokens do not affect the role of the native JCC token within junca Chain. Ultimately, all fees are paid for in JCC behind the scenes. The JRC21 standard merely relieves the end-user of the responsibility to hold JCC and shifts it to the token issuer instead.

Is a protocol designed to create safe and untraceable transactions. Information about both sender/receiver wallet addresses will remain anonymous, and the transaction values between them private. junca P supports anonymizing transaction information for JCC, junca Chain tokens (JRC20, JRC21, JRC21P), and wrapped tokens from other chains (BTC, ETH, USDT, etc.)

junca P

junca P supports a dual key system - view and spend key. Each user will be issued a pair of private keys. The user can optionally share her/his private view key to an authorized agency, i.e. tax agency, so that the agency can query all balance-related information for regulatory purposes. junca P transactions are fully public on junca Scan but the relevant information including sender, receiver and amount, are hidden from third-parties and are only visible to the sender.

junca Cash

JCC

JCC is the native token of junca Chain and the main currency of the project. It will be used as the utility token within the junca Network and can also be used as a governance token for the network at the same time.

Using the high performance and low fee junca Chain, users can benefit from cheaper and faster international remittance service and a range of other financial services provided through junca Platform.

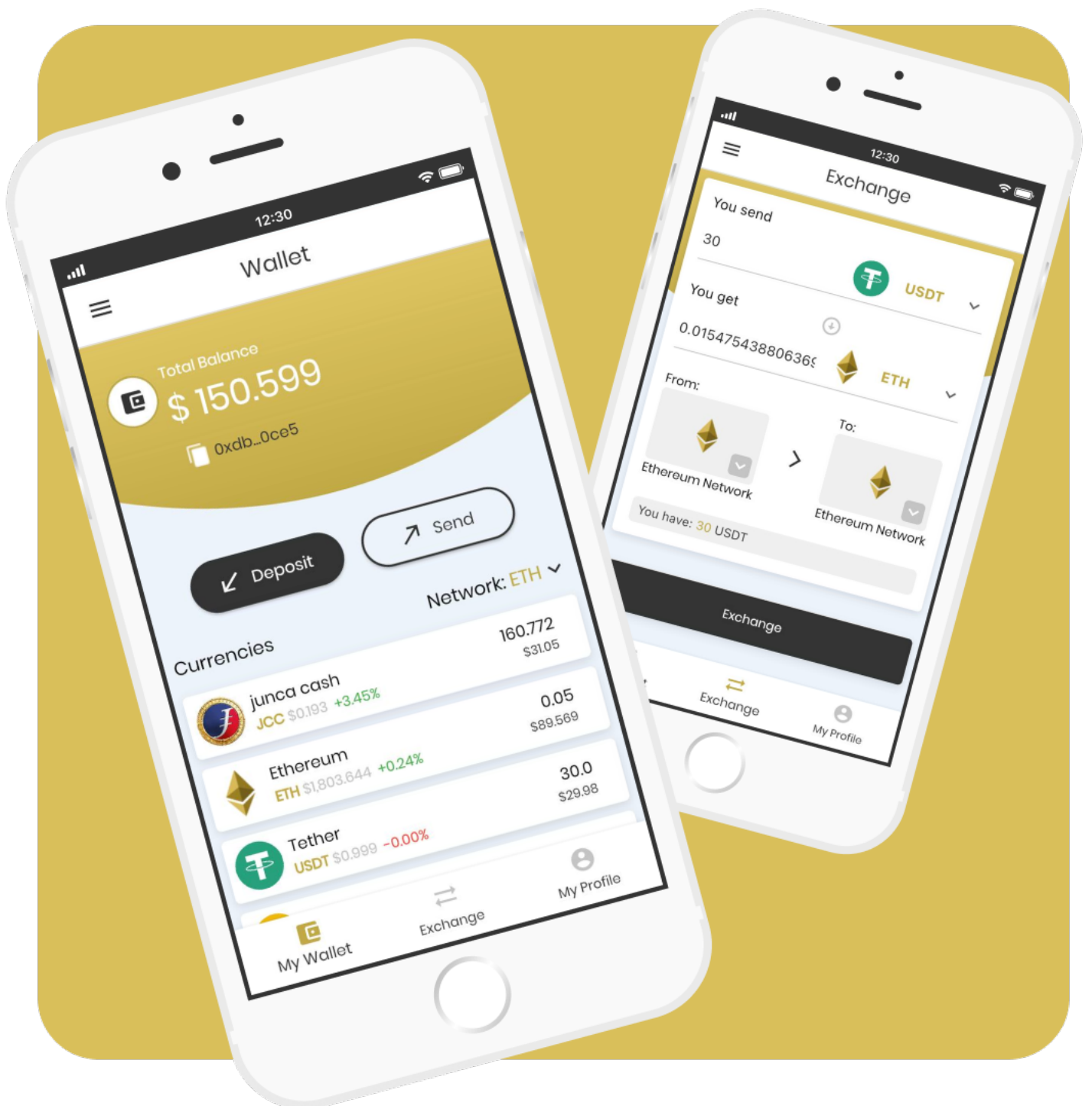
JPESO

JPESO is planned to be a stablecoin with its value pegged 1:1 to Philippine Peso. It will have the same benefits as JCC by being built on junca Chain, but at the same time will have a greater price stability and play a key role in the payment system developed by junca.

As a safe asset backed by fiat currency, JPESO can allow users to make the transition from legacy financial system to the blockchain financial system of junca more smooth and less risky as the price fluctuations will not be present and all denominations can be carried out as usual.

junca App

junca App is the entry point to the junca Network and its products. It is a multichain wallet giving its users the ability to store and transfer cryptocurrencies. It also includes the features for Swap and Multichain Swap, and with future releases other products from junca Platform will be added to the application making it a fully featured financial app for the modern economy.



INTEGRATION WITH LEGACY SYSTEMS

junca Platform will be combined with the traditional financial system through its application and allow the users to:

- Buy crypto with a credit card.

Users will be able to purchase crypto with their credit card, therefore lowering the barrier to entry to the junca Network and without the need to use centralized exchanges

- Have integration with own credit card.

Branded credit card will be issued and allow users to pay for goods and services in any point-of-sale (POS) terminal and take cash from ATMs all over the world. A seamless conversion of JCC and JPESO into fiat currency will make any transaction easy and balance directly charged from junca Platform

- QR code payment system.

junca Platform can be used to make transfers by QR codes, not only for individual transfers but also for merchant accounts. A business owner can use junca Platform to display QR codes to the customer and receive payment for goods and services in the currency of choice. A branded point-of-sale terminal will be created to make the use of merchant account even more convenient and featureful.

- ATM.

junca ATMs will allow users of junca Network to take cash directly from their wallet and without a need for a credit card.

- Tap to Pay.

junca Platform will implement Tap to Pay feature for making purchases using the smartphone's NFC chip. Tap to Pay feature enables wireless payments at POS terminals and also the transfers between users by touching Smartphone-to-Smartphone with NFC.

ROADMAP

● 2022 Q1

junca Platform updates

● 2022 Q2

- Swap and Multichain
- Swap features added

● 2022 Q3

First release of junca Chain, Scan, Bridge, Issuer and Relayer

● 2022 Q4

- JPESO, buy crypto with card
- QR code payments

● 2023 Q1

Branded card

● 2023 Q2

Release of junca DEX and NFT market

● 2023 Q4

ATM network



**"From beauty to social business, based on the idea
that contributing to the economic reform in Asia
will lead to world peace."**