



WHITE PAPER

CRYPTO × CULTURE

United Worlds of Creativity and DeFi

NOBUNAGA TOKEN

April, 2021

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Around 430 years ago,
a commander won fame throughout the Far East country of Japan.
He would be known to history as Nobunaga Oda.
The first to unite this ancient land in an incredible feat of genius,
Nobunaga Oda became one of three great warriors praised in the annals of Japanese history.
At the same time, he inspired a sense of fear and awe that would never be forgotten.

Inappropriate, brazen, elusive, prudent, innovative, and above all pragmatic,
he upended traditions and conventions, while deftly choosing the most effective means to
achieve his goals. To the people of Japan, he embodied a spirit unlike anything seen before.

“Tenka Fubu” - Peace and Prosperity through Power
Throughout his life, he continuously repeated this phrase.
This declaration revealed his desire to create a better world for all – not by suppression through
military might, but by ensuring an end to conflict and war. In a period of endless strife, his vision
for society seemed nothing short of impossible.

However, it was through these words that he achieved unparalleled greatness.
What is more, it was the philosophy behind this motto that built
the economic foundation of the Far East country of Japan as we know it today.
His words were transformed into the laws and practices of the common person,
and they continue to live on in the social fabric.

This truth is testament to his understanding and commitment
to the essence of things.
He was always focused on a future
he knew would one day manifest itself, if given the chance.

Fast forward to today, we face a feeling of entrapment
by the powers that be that is no less grave than
the medieval forces reformed by Nobunaga Oda.
And one of the prime factors behind our current shackles are
the economic and financial traditions that seek to bind us.

In 2021, a new token has come forth, bearing Nobunaga Oda’s name
and honoring his philosophy.

It seeks to reexamine the financial conventions practiced by people up until now.
Focused on a newly-emerging future,
it promises to pay the utmost respect to the cultures surrounding us.
To realize its vision, Japan’s first domestic DEX is born.



United Worlds of Creativity and DeFi





1. First in Japan

NBNG is a governance token issued by SENGOKU SWAP.FINANCE (SSF), Japan's first international decentralized exchange (DEX). NBNG is an ERC20 token with a total token count of 1 billion NBNG as a protocol token for SSF.

Click here for NBNG's smart contract address

<https://etherscan.io/token/0x9275e8386a5bdda160c0e621e9a6067b8fd88ea2>

2. Yield Farming

Yield farming at SSF ensures liquidity.

If you deposit an ETH and NBNG currency pair (LP) in SSF and provide liquidity, you will get NBNG as a secondary incentive. You can also earn NBNG as a secondary incentive by staking each currency alone.

3. Japan Culture × NFT Store

For phase one, we will launch the NFT store “Rakuza” in order to allow anyone to freely auction and display Japanese pop cultural assets, with the actual anime cels and manga originals as collateral, by transferring these assets through smart contracts as NFTs. We are also planning to release a Rakuza token some time in the future.

4-1. Introduction

Starting with the publication of a treatise by Satoshi Nakamoto in 2008, many planners have designed various token economies to realize financial decentralization.

Numerous blockchain networks, including Bitcoin and Ethereum, have proved the usefulness of blockchain and succeeded in creating great value in this huge social experiment. In addition, in 2020, the advent of decentralized finance "DeFi" shocked the blockchain industry. Withdrawal from administrators, a more decentralized (autonomous decentralized) operating protocol emphasized blockchain credibility and succeeded in evolving the administrator-less Bitcoin ecosystem. A number of DeFi protocols have been created and the market-locked funding has exceeded US\$ 80 billion.

The market size of DeFi, which shows the original value of blockchain, continues to expand, and as a result of various project teams developing on-chain assets and off-chain assets, and continuously creating non-substitutable value, DeFi, NFT market, and the market dominance of the market and the platforms that support them will exceed the majority is considered only a matter of time. Even NFTs are already a US \$ 250 million market.

On the other hand, looking at Japan, the DeFi and NFT markets, in particular, are still in the development stage. One of the major reasons for this is that although centralized exchanges are well-developed in Japan, in the area of DeFi and NFT, there are almost no sufficient Japanese applications, and the entry to the volume zone has not yet been made.

In such a situation, SSF solves Ethereum's problems from the perspective of Web3.0, and proposes the development of the Asian DeFi market and a realistic next-generation trading model as Japan's first international decentralized exchange DEX by implementing AMM.

4-2. Uniswap, the best example of DEX, and its problems

Uniswap is an automated liquidity protocol that implements a system of smart contracts on the Ethereum blockchain. Users ensure liquidity by offering a percentage of ETH and other ERC20 tokens. Offer a pair of ERC20 tokens in one liquidity pool. All liquidity providers split a trading volume of 0.3% as a commission. Liquidity providers need to set the ratio of two ERC20 tokens.

Liquidity Token liquidity provider (hereinafter referred to as LP) acquires a liquidity provider token (hereinafter referred to as LP token) used to represent the share of LP in the current liquidity pool. LP tokens are ERC-20 tokens that can be transferred without deleting the liquidity of the liquidity pool. Each liquidity pool has a corresponding LP token.

Uniswap V1 implements basic AMM exchange functionality, but it also has some issues. The contract cannot be upgraded, so to fix this issue, the development team reimplemented Uniswap V2 with the same basic features as Uniswap v1 and some new features such as:

(i) Create token pair

Instead of using ETH as an intermediary for Uniswap V1, users can directly create trading pairs of two ERC-20 tokens.

(ii) Oracle price

Adopt more reasonable price Oracle that makes it difficult to manipulate prices by using the price randomness of the transaction before the first transaction in the block.

(iii) Flash Swap

The user can get the target token first and complete the swap later. Alternatively, you can return the token within a specific time so as not to trigger the swap process. This is the same as borrowing tokens in the liquidity pool.

(iv) Liquidity provider

The original 0.3% liquidity provider fee can be split into two parts, of which 0.25% is used by the liquidity provider in proportion to its contribution to the liquidity reserve, and 0.05% is sent to the pre-set address as the Protocol Fee, which can be used for different purposes.

These new features increase the usability of Uniswap. For the exchange functionality, SSF remains the same as Uniswap V2.

4-3. Solution to Uniswap problem in SSF

SSF launches AMM's Decentralized Exchange (DEX) protocol Uniswap model as the first phase. The new decentralized exchange (DEX) protocol of the Uniswap model, which has had a major impact on the expansion of the Defi market, has created a huge tens of billions of USD market since 2020.

Uniswap's new DEX model has become an important point in the blockchain industry.

However, even with this model created by UNIswap, the decentralized exchange model still has obvious drawbacks. Specifically, it is as follows

- ▶ High gas charges of tens of dollars are incurred to generate one transaction, which is a big barrier to the user's first step.
- ▶ All users need to re-lick the information of at least one block to execute the transaction, and usability cannot be improved in the exchange.
- ▶ As a result of the emergence of various Dapps, an increase in users, and active trading, the Ethereum TPS limit problem puts the Uniswap model under fatal system design constraints.

The above problems are not the problems that only occur in Uniswap, but the problems that all DEXs have in common and should be solved. SSF tries to solve these problems.

SengokuSwapFinance "SSF" layer 2

SSF-UPbot is a layer 2 scalability solution. The basic idea is to aggregate a large number of transactions and then validate the proof on the chain. SSF-UPbot needs to analyze and validate these aggregated transactions through smart contracts and store the aggregated transaction proofs on the chain using zero-knowledge proof technology. Reduce some data. All funds are locked to smart contracts and most calculations and storage are done off-chain.

SSFnet is an implementation of SSF-UPbot, its v1 version is currently deployed on the Ethereum mainnet. Its basic operating principle is as follows.

The user sends the signed transaction to the validator.

In addition, the validator will be able to handle each transaction on the chain. This allows anyone to reconstruct the state later (each transaction).

The security of SSF-UPbot is similar to the security of the corresponding Layer 1. The reason is as follows.

Validators cannot tamper with the state or embezzle Layer 2 funds, as all state changes require corresponding proof and cannot be counterfeited. The private key is always in the user's hands.

Users don't have to stay online because they don't have to store any additional data.

SSFnet currently supports three operations:

Deposit: Transfer layer 1 tokens to SSFnet layer 2.

Withdrawal: Withdraw tokens from Layer 2 account
and move to Layer 1 account

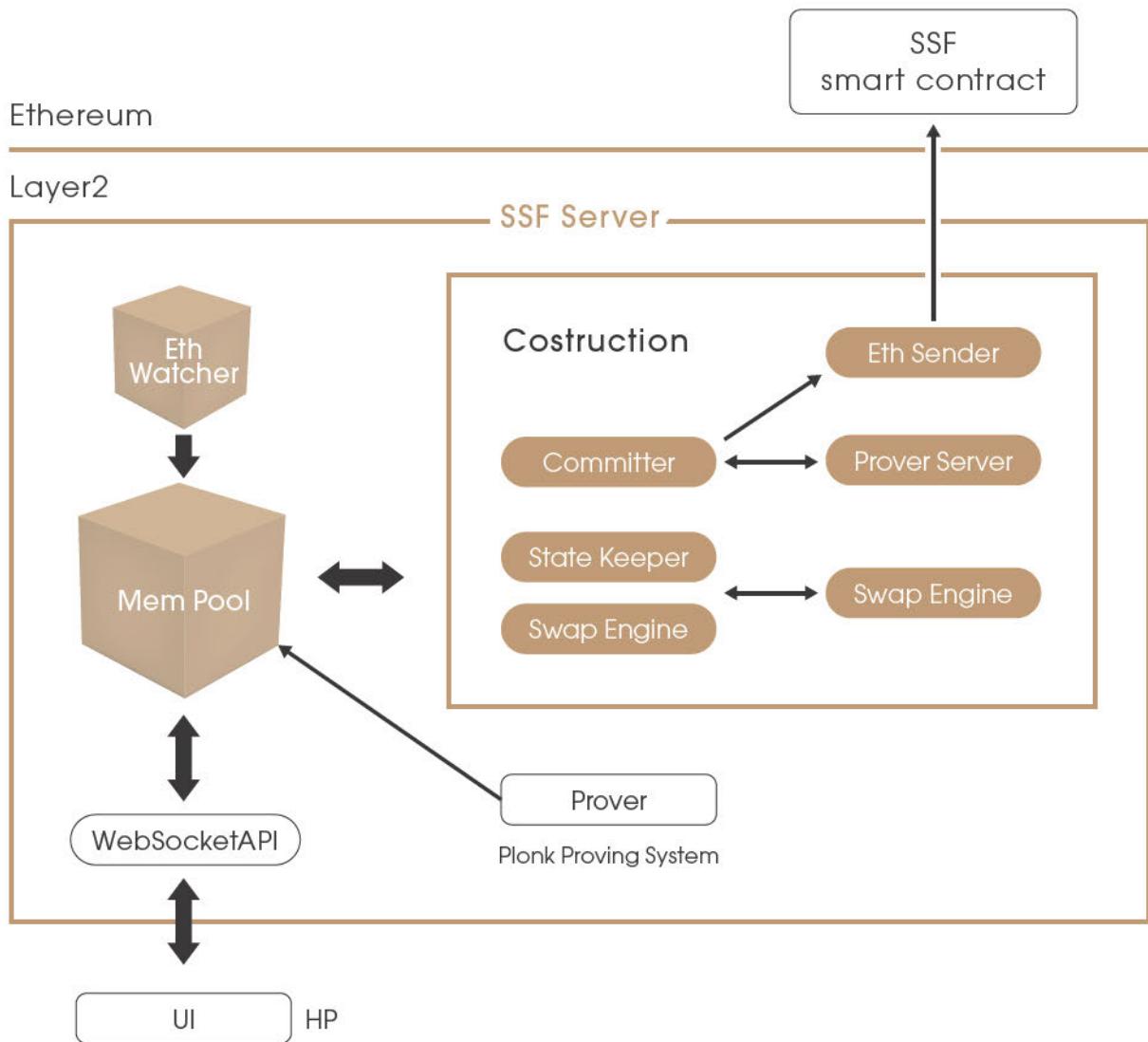
Transfer: Transfer tokens at Layer 2 without gas charges.

Therefore, SSF-UPbot can theoretically achieve 100-200 times the scalability of the Ethereum mainnet while significantly reducing gas consumption.

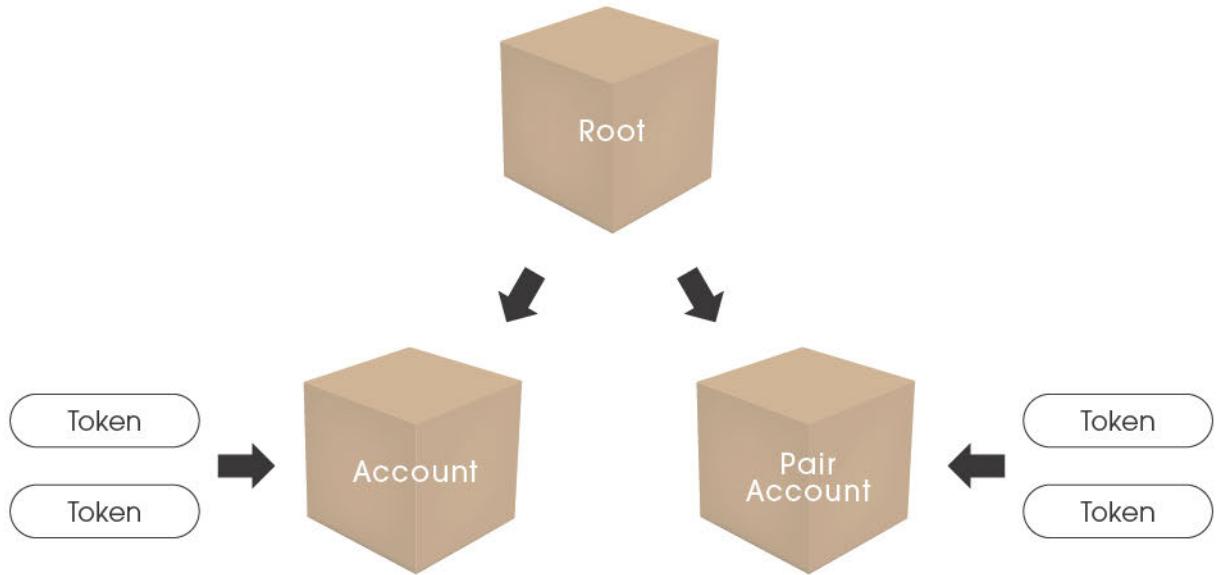
The SSF net model implemented in SSF Layer 2 uses SSF Rollup technology.
SSF Rollup technology performs all Uniswap functions and ensures the core value of decentralized exchange.
SSF increases TPS by multiple digits compared to Uniswap, and transaction processing consumes very little gas charges.

SSF system architecture

The SSF system consists of an on-chain smart contract, an off-chain SSF server, a zero-knowledge proof system, and a front-end user interface.



SSF Layer 2 Account Node



SSF Layer 2 divides node management into two parts. The first regular account node records the status of all tokens in your account. The second pair account node records the status of the SSF liquidity pool for a particular token pair. Only two nodes are assembled in the pair account node. Each node represents the balance of one token in the liquidity pool.

4-4. SSF Ecosystem and Governance Token NBNG

NBNG is an ERC20 token. As an SSF protocol token, NBNG is a key component of the SSF system. It is also a certificate for users to participate in governance, token listings, transaction validation, and buybacks. This white paper details NBNG's economy model.

■NBNG token allocation and vesting

NBNG is an SSF governance token with a total of 1 billion NBNG. The SSF token ticker is NBNG. NBNG's smart contract address is

<https://etherscan.io/token/0x9275e8386a5bdda160c0e621e9a6067b8fd88ea2>

The distribution ratio of NBNG is as follows.

1_ 53% to community mining:

SSF is a community-based decentralized token swap protocol. Most governance tokens are distributed through community mining and assigned to community members participating in the system. 530 million NBNG has been allocated for community mining. Over the first three years, 460 million NBNGs will be distributed and 70 million will be used for long-term incentives.

In the first year, 17% of the total token supply will be distributed, 4% of which will be used for airdrops. 18.50% in the 2nd year, 10.50% in the 3rd year, and 7% in total after the 4th year.

Community mining includes:

- i. Proof of liquidity-mining (13% of total supply);
- ii. Proof-of-Gas (5% of total supply);
- iii. Proof-of-NBNG-Snarks (10% of total supply);
- iv. LP farming(17% of total supply);
- v. Airdrop to NBNG holders (8% of total supply)

2_ 15% to SSF team:

150 million NBNG will be assigned to the SSF team with a one-year lockup from the launch of the mainnet. From the second year, 5% of the total token supply will be distributed to the SSF team every year until the end of the fourth year. Developers are also important participants in the SSF ecosystem. They are responsible for building and maintaining the technical infrastructure. The official SSF team will be responsible for the development and maintenance of the SSF and will acquire 15% of all NBNG tokens within 4 years.

3_ 8% to ecosystem developers and ecosystem growth:

Community developers and other developers who provide services or products to SSF users will receive 8% of NBNG tokens , a total of 80 million NBNG, will be allocated to developer and ecosystem growth initiatives, distributed 2.0% annually over a four-year period. Some of which will be used for air drop and incentive programs for community members participating in early testing.

4_ 4% to initial liquidity:

Within a year of the launch of the mainnet, 4% of the total supply of NBNG tokens will be used on decentralized trading platforms such as SSF and Uniswap to provide initial liquidity for NBNG. A total of 40 million NBNGs will be used to provide initial liquidity (NBNG-USDT) at Uniswap at 12:00~22:00 (JST) on April 10, 2021 Japan time. The initial current ratio is 30,000,000 NBNG / 1,500,000 USDT.

5_ 1% to advisors:

10 million NBNG, which is 1% of the total token supply, will be allocated to the advisor. Tokens will be distributed within 3 years and are 0.33% annually.

4-5. NBNG yield mining at SSF

Proof of Liquidity Mining (PoL)

Liquidity is the most important factor in SSF's trading experience. Therefore, 13% of the total supply in the system will be distributed through the Proof of Liquidity Mining to reward SSF liquidity providers.

Proof-of-Gas(PoG)

For each SSF Layer 2 transaction, the SSF must send a zero-knowledge proof to Ethereum Layer 1 for security. A certain amount of gas charges is consumed for each interaction with Ethereum Layer 1. In SSF Sync and other SSF Upbot based systems, this part of the gas cost is paid by the user.

All Layer 2 transactions in the SSF system require a lot of computation because they need to generate zero-knowledge proofs and send them to Ethereum Layer 1. Early in the project's launch, the SSF team deployed a number of high-frequency AMD CPU servers to generate zero-knowledge proofs (NBNG-Snarks). In fact, as long as NBNG-Snarks are sent to Layer 1 in time, it doesn't matter who creates and serves NBNG-Snarks. Theoretically, the more people who participate in proof generation, the higher the TPS of the system, and the more secure and real-time transactions can be achieved.

4-6. Governance and protocol fees

Governance

SSF supports a limited number of trading pairs, except for the first trading pair set up by the SSF team. Users holding NBNG may vote or pledge to NBNG to list certain tokens.

NBNG holders can initiate a coin listing proposal through the governance process described above and can list coins if they receive a majority of votes.

-If you have a large amount of NBNG, you can pledge NBNG for listing.

The SSF team will carry out the listing of tokens based on the outcome of the vote or pledge. All users can create trading pairs and add liquidity after one token is listed.

NBNG protocol fee

Under SSF contracts, 0.3% of all Layer 2 swap transactions are charged as transaction fees. Of that amount, 0.25% will be automatically allocated to liquidity providers and the remaining 0.05% will be used as protocol fees. All protocol fees (100%) are used as a long-term incentive for the project and SSF personnel do not receive transaction fees.

Japanese Art Culture “Manga & Anime” × NFT

In 2000, the art world's leading museum, the Louvre recognized manga and anime as the 9th category of arts. Manga exhibitions were opened in the British museum last year and the Museum of Modern Art, New York in 2021. Manga and anime have moved beyond Japan and become a modern art movement of the 21st century.

Animation cels and original manga illustrations are often seen at the world's auction houses, both in Japan and abroad, and are seeing ever-increasing valuations as works of art.

The reputation of Japanese anime and manga continues to grow around the world, with many creators behind the scenes dedicating their lives to produce these works. Complete works of anime and manga are excellent, but the cels and original illustrations they are made from are exquisite works of fine art in their own right, and they speak to different aesthetic tastes than the completed works.

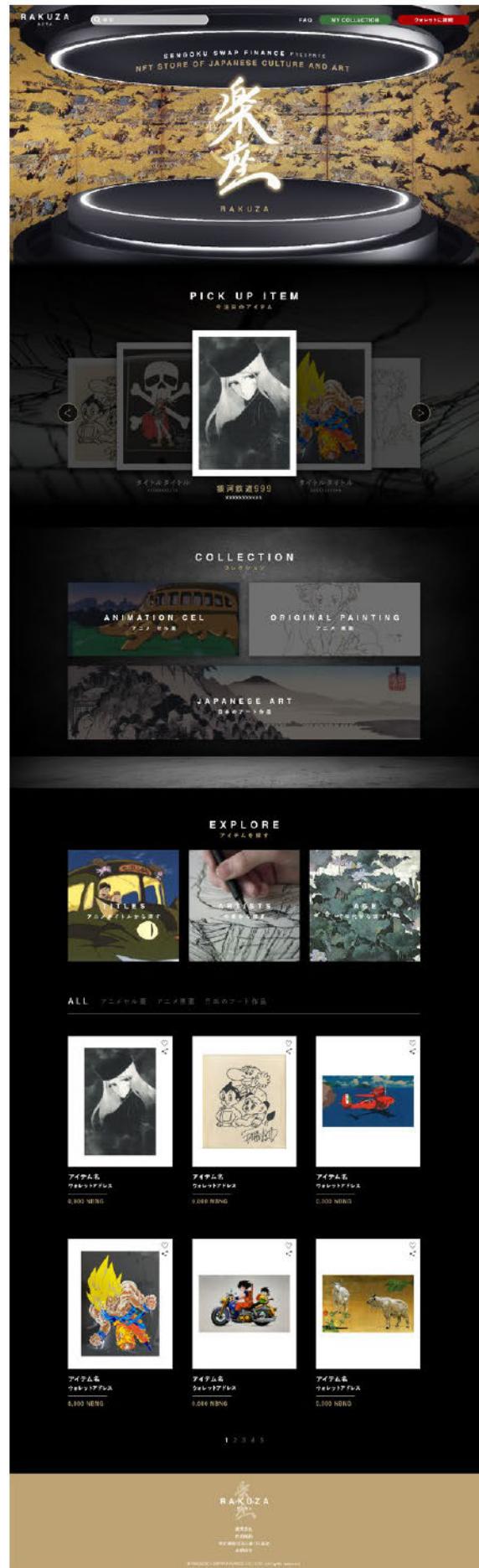
At the Rakusa NFT store, we expect to create a new economic market where the focus is on the value of those cels and illustrations as NFTs, and we protect and promote the value of creators working with Japanese pop culture.

Phase 1 Art NFT Stable

As the first phase, the digital cels and original illustrations will be transferred to smart NFT contracts with the actual cels and manga originals as collateral, and anyone can freely display and auction them.

All the cels and illustrations in our store have been sourced from real businesses or bought at auction, and we have over 1000 works in stock as of April 2021. We are making these collections the real business to have more stocks constantly over various works.

As real assets hold their value, we are confident that by combining these creative works with our DeFi product NBNG will experience increasing demand, liquidity, and appreciation over time.



Store design mockup▶

6. Other planned Dapps development

Aiming for No. 1 decentralized exchange (DEX) in Japan, SSF will develop various services centered on the Decentralized project.

SSF is developing online games in addition to Decentralized Finance.

We are currently developing external connection Dapps such as fair trading games that are not tampered by smart contract management without an administrator, and NFT x games that utilize the non-substitution nature.

01 OCT. 2020

Sengoku Swap.Finance and Governance Token NBNG Project launched

25 MAR. 2020

White paper released

31 MAR. 2021

Governance Token NBNG ICO

*Equivalent of 2,000 ETH sold out
in 10 minutes

10 APR. 2021

Listed NBNG on Uniswap

22 APR. 2021

Launch Japan's first DEX Sengoku Swap.Finance

*AMM Decentralized Exchange (DEX) protocol Uniswap model as first phase

*Tokens will also be listed on TENSET, ZKSwap, SushiSwap, DODO, CARDANO and more.

Late APR. 2021

Rakuza NFT store beta version released

*NFT store for anime and manga cels and original drawings

Scheduled for JUL. 2021

Rakuza NFT store second update

*Expansion of creator list
and market functions

*Over 1,000 items available

Scheduled for JUL. 2021

SSF layer update

*Significant reduction in gas fees
*Scalability 100 to 200 times that of
Ethereum Mainnet

Scheduled for Jul. 2021

Rakuza NFT store

Issuance of Rakuza tokens

Scheduled for 2021

List NBNG major exchanges