

# STOA NETWORK WHITEPAPER

(Ver 0.9)



## Preface

The goal of our project is to digitally connect various financial assets. The idea is simple. The model we propose is a platform for transaction swapping of liquid cryptocurrency assets with real securities and funds, working as a compensating insurance for risks associated with digital assets and also as a platform for chainization of all FinTech cycles through securitized bonds and securities.

That is how we define Distributed Finance 2.0. We are not only considering Decentralized Finance but also Distributed Finance. One might call it a demand for decentralization for equal rights and opportunities.

Just as new markets that did not exist before are present only in institution and system, freedom without institution or system is not true freedom.

We believe anyone can be the center, anyone can propose a concept, and anyone can have the power. However, for anyone to provide a platform, a close connection and association with the market and data is essential. Everyone wishes to create their own ecosystem under their own philosophy, but that has never been an easy task.

The world is far from being fair to all, and so are the limitations. In this give-and-take society, we must be ready to take on the challenges with an exhaustive "give-it-all" strategy.

The current market ecosystem is already monopolized by some interest groups. The paradigm for the new ecosystem should not be a "shift" from the original but a "lift". We have craved this for so long. Order is brought by whomever does so. This is what we crave. We endured years of preparation for this project. Now our team, our company, and our project are all gathered here to see the light of day.

We are about to begin the era of Finance 2.0 with the advancement of innovative technology called "blockchain". The system and the institution for a new financial society proposed in this whitepaper are designed to promote better opportunities and more dynamic blockchain activities. The new land of promise is where our spirit heads to. That is the shrine of truth. Under persecution and distorted truth, we shall be born again and done again. We shall dwell on this land of opportunity, filled with agony, distress, and pursuit.

- Roy Kim -

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# 01. Overview

Stoa Network refers to the Stoa platform chain which is built based on decentralized finance (DeFi). Stoa platform chain refers to the connection of FinTech networks through DeFi.

Most DeFi models are designed with various elements such as staking, decentralized deposits and loans, and 1:1 key currency for issuing Stablecoin. These DeFi models have strong one-dimensional characteristics of the existing traditional finance models as well as a handful of weaknesses.

One well-known downside is the decrease in liquidity value due to the change in price of the underlying asset that is made of cryptocurrency. Another drawback is that an ecosystem can only be developed by deliberately creating a value effect that makes up the inflation rate.

Stoa Network seeks to build a platform ecosystem taking into consideration both macroscopic and microscopic perspectives to overcome the limitations of the existing DeFi. The decision for this approach was made following a wide range of research for ways to overcome the current limitations of DeFi and a close look at the market. The current DeFi models are determined to have a threshold in terms of procedure when it comes to circulating funds among economic units. This is because the inter-economic unit circulation of funds depends on its connection with credit activities.

The DeFi ecosystem is, after all, an ecosystem of capital goods, and for our lives to achieve innovation based on digital finance, an autonomous and transparent environment without intentional market intervention is needed. However, most DeFi models lack the understanding of the fundamental mechanism of finance, and, to make it even worse, excessive services and platforms have heightened the thresholds and needs for better connection. In other words, Stoa Network is a network pool designed for the extension of various platform-synchronized token ecosystems into the DAO infrastructure to increase stability of digital capital and decrease algorithmic risk of token economy systems as well as autonomous liquidity systems. It is furthermore a DeFi-intermediation project across all cycles to assist the establishment of a virtuous cycle token economy system by rewarding various platforms participating in the DAO infrastructure and establishing a properly working system, thereby breaking away from the DeFi stack structure founded on the vulnerable digital basis of the stable token strategy.

Yes, we have seen the expansion and derivation of various DeFi ecosystems, like so many ICOs, IDOs, the proof-of-stake, or swap smart contracts, but can we honestly say these have brought significant changes to our lives? We cannot help but ask.

The strength of the gold standard lies not only in the scarcity of gold, but also in the relative stability of the value of the underlying asset. On the other hand, digital assets are logical assets, without limitations on underlying assets, which engenders its biggest weakness, namely the relative instability of the value of the underlying asset.

In addition, since cryptocurrency assets now make up the hedging strategy for traditional assets and funds, it has become quite difficult to guarantee the stability of the underlying asset, and even that relies heavily on the demands of its big fans. For this reason, leveraging the DeFi model as an ideological notion can pose risks to those who participate in and contribute to the DeFi network. When preparing and implementing a DeFi project, the importance of fundamentally understanding these limitations should not be overlooked.

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As many different projects that currently exist prefer to circulate their own token economy models, we have given consideration to the possibility of partnerships or swaps for business collaborations. However, because determining the true value of these models is realistically unfounded, and because they are highly marketing- or meme-dependent, we wish to conduct careful evaluation on them when our governance expands.

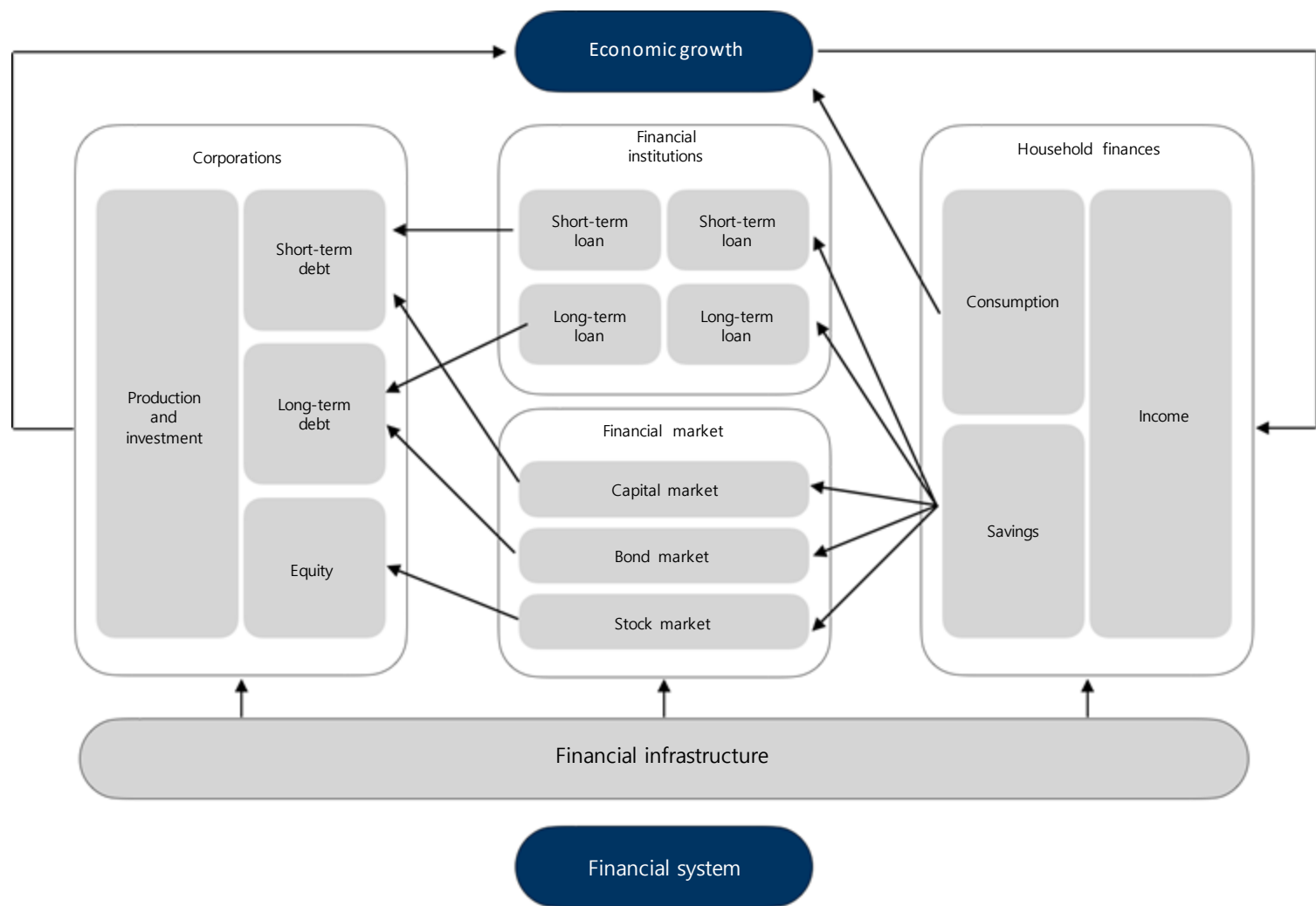
Constructed to fill in the gaps where the existing DeFi ecosystem was faltering, Stoa Network has been kept advancing and rebuilding itself through continuous funding of projects and stabilization of its beta service, from a Bit Stoa and DeFi Stoa-centered project along with Care Stoa into a revolutionary project of multi-platform expansion.

## 02. Background and Demand

A lot of limitations are noticed in the current DeFi. Some DeFi elements were initially created to address an asymmetric data problem that arose from adverse selection and moral hazard in financial transactions. Cryptocurrency was born to deal with this kind of problem, and the DeFi ecosystem came to the surface in the course of its expansion into a FinTech model.

What should not be overlooked is that, from a financial ecosystem point of view, adverse selection and moral hazard exist because of the characteristic of the one-sided capital transfer transaction, whose precondition is future repayment by the debtor. This is because financial properties operate as transactional processes under the premise of future repayment.

[Circular relationship between finance and real economy]



## <Comparison of financial system types>

Criteria		Bank-centric financial system	Market-centric financial system
Financial market type		Indirect finance-centric debt management-type	Market-centric asset management-type
Loan risk		Bank-held	Distributed among investors
Borrower details		Produced by banks (including non-objectified information)	Produced by specialized institutions (including objectified information)
Screening function	Pre-screening function	Bank	Market maker
	Intermediate monitoring function	Bank	Credit rating agency
	Post-monitoring function	Bank	Credit rating agency, Securities underwriting investor
Monitoring efficiency		-Produces efficient information based on long-term transactional relationships between banks and corporations -Offers high monitoring incentives depending on the owned illiquid loan assets and alleviate the free-riding problem	-Is likely to cause a free-riding problem related to the production of data due to the public nature of data -Monitors business owner's myopia (agent problem) through market
Monitoring frequency for corporate solvency		Continuously monitors through prediction of corporate cash flow by providing payment and settlement services	Limits the frequency of monitoring and the scope of information with a focus on financial statements that are periodically published
Investment performance		Long-term	Near-term
Support for corporate restructuring		Flexible support available	Rigid
Corporate data		<b>Primary data</b> (Produces data that cannot be produced in non-bank or direct financial markets)	<b>Secondary data</b> (Produces data from the data disclosed by corporation)
Ratio of bank assets to total assets of financial institutions		High	Low
Overall size of capital	Extent of internal financing	Low	High
	Debt/Capital ratio	High	Low
Stock ownership structure	Bank-held corporate stocks	Significant	Insignificant
	Inter-corporate investments in stocks	Extensive	Limited

The value of financial ecosystems such as this may be stabilized with the diversification of financial portfolio, but the diversification is somewhat limited in the existing DeFi model. This is because there are no realistic alternatives to this. In other words, to say that we are trying to escape from traditional finance is to say that we are trying to escape from the tarnished fatigue of the traditional finance.

Moreover, most DeFi models are not completely free from the centralized characteristics that are in disguise of a decentralized model, not to mention their part in creating unnecessary competition among holders. Also, since certain projects are not created with balanced funds, the actual market is more focused on market makers than liquidity supply.

This is partly because of the insufficient number of services or platforms that fully reflect the microeconomic nature of DeFi as well as of the differing views and policies on cryptocurrency from nation to nation.

The reason different nations have different stances on the policies regarding cryptocurrency may be because of the different roles of financial system in each nation. The Republic of Korea, Japan, and Germany have a bank-centric financial system, meaning their perspectives on regulations are centered around banks and corporations. On the other hand, nations like the United States or the United Kingdom have a direct financing system, where the borrower and the lender of capital participate in a direct financial transaction as the parties of the contract. In this case, the perspectives on key regulations are centered around stock volatility or hostile M&As.

Recently, as the global financial network has become more accessible thanks to digital utilization, the traditionally slanted utilization of financial systems has been seeing a transformation into the financial system of direct and indirect financing combined.

From the cryptocurrency and DeFi ecosystem point of view, the growth of traditional finance eventually reaches the issue of path-dependency. Opportunities arise midst crisis, imbalances midst side-effects of misuse and overuse, which is soon followed by stabilization of market's ecosystem with the help of laws and institutional system. This cycle of stabilizing an ecosystem always repeats itself.

When faced with struggles of deposits, loans, holder staking, or stabilization, the existing DeFi models must take into consideration how traditional financial systems has been dealing with conflicting interests. The DeFi ecosystems resemble subsidiary financing from the FinTech point of view. This is because anyone can use digital finance by the means of cryptocurrency and blockchain, interpreting it as they wish.

Hoping for an autonomous marketization in DeFi could be not so ideal until cryptocurrency earns enough reputation and reliability.

Designing devices to control liquidity with certain protocols may guarantee autonomy and transparency, but such devices may be nothing more than a means to interpret finance as we wish based on our ideas.

Conflicting interests are inherent in markets, and these markets must interact flexibly with currency markets suited to handle such conflicting interests, financial portfolios, market size, and currency flow volume.



In the case of digital, conflicting interests can be controlled legally and institutionally with centralized models. However, as many DeFi models grow by monopolizing a platform, thus becoming a means of monopolizing capital goods, the control of conflicting interests in such cases could lead to bigger problems.

Financial crises have given rise to risk management systems as well as macroprudential policies in traditional financial markets.

These features have helped emphasize deglobalization elements, leading to the fortified financial walls in each nation's central bank.

A typical example is the United Kingdom, which has integrated financial supervisory functions with its central bank by revising its financial services law in 2012 and 2016. The ECB also introduced the European System of Financial Supervisors (ESFS) in 2014 after the financial crisis, followed by the macroscopic European Systemic Risk Board and microscopic Committee of European Banking Supervisors, as well as the European Insurance and Occupational Pensions Authority and the European Securities and Markets Authority.

They are all supervisory organizations built following the financial crisis, and the supervisory role of the ECB has also substantially expanded. Included in this series of expanded regulations is the implementation of Basel III.

Major financial products of non-financial intermediation, including MMF, RP, and ABCP, also fall within the scope of regulation.

This may be a reason to suspect the high likelihood of its impact on DeFi that suggests decentralized finance models. Non-financial intermediation has previously been referred to as shadow finance because reliability beyond the scope of financial system can lead to excessive leveraging and credit, and excessive credit growth is associated with increased risk outside of the system.

Of course, credit and leverage alone are not enough to declare a financial crisis.

These aspects require regulatory mechanisms as financial stability of consumption market is a key element in effectively controlling threats to capital ecosystems and risks to national financial systems.

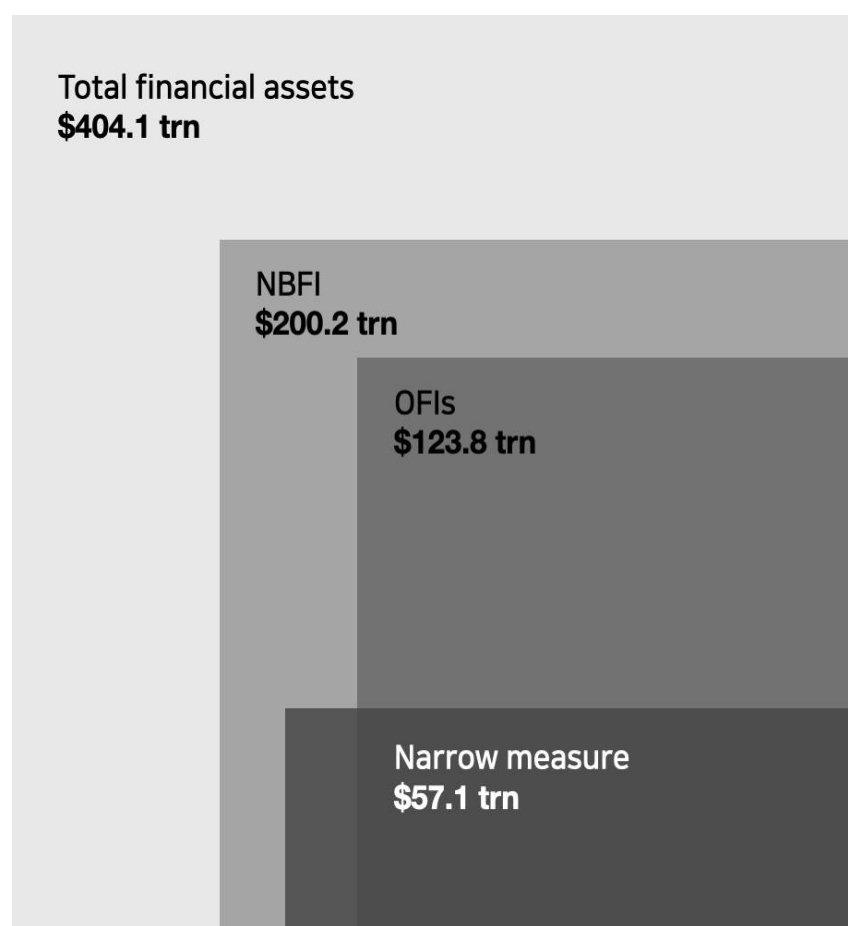
The credit system of DeFi deviates from the financial system of non-financial intermediation, and because market liquidity was extended into derivative finance by mapping the underlying assets of the traditional finance, it needs to be assumed that the risk cannot be effectively controlled solely with an autonomous control system.

Most DeFi models are dependent on liquidity, holder staking, and vote-type DAO for swaps as a way of managing risks. Nonetheless, the illusion that such dependency can protect these models from credit risk could be a misleading idea. Who can guarantee a run on the crypto will never happen?

Naturally, there are people who view the extended risks, i.e., those born through the secondary derivation of insurance products used to hedge leverages in the derivative market that has extended from the non-financial intermediation market, as a pillar of financial crisis.

One important aspect to consider is the extent to which securitized bonds can be extended and utilized in DeFi through standardization and capital buffer.

### [Status of non-bank financial intermediation]



\*Source : FSB 2020

### [Status of narrow measure of non-bank financial intermediation]

Economic Functions	Size (USD trillion)	Share (%)	Change in 2019 (%)
EF1 (Collective investment vehicles with features that make them susceptible to runs)	41.7	72.9	13.5
EF2 (Lending dependent on short-term funding)	3.9	6.8	6.1
EF3 (Market intermediation dependent on short-term funding)	4.7	8.2	5.2
EF4 (Facilitation of credit intermediation)	0.5	0.8	16.6
EF5 (Securitisation-bases credit intermediation)	4.8	8.4	2.5
Unallocated	1.7	2.9	7.0
<b>Narrow measure (total)</b>	<b>57.1</b>	<b>100</b>	<b>11.1</b>

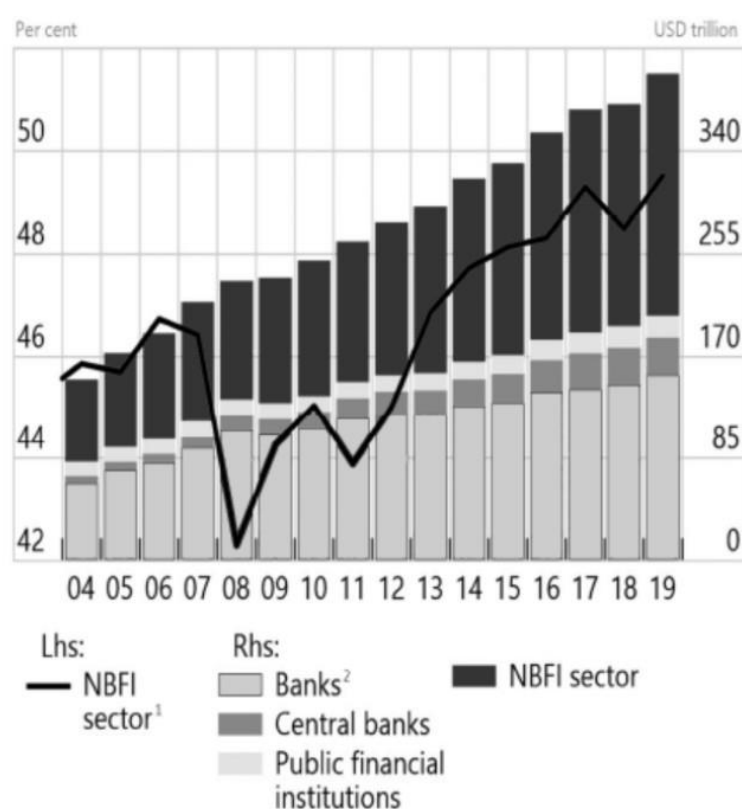
\*Source : FSB 2020

The market for non-financial intermediation continues to grow. This is because interest rates are low in traditional financial markets and the majority of the global markets are in their maturity. There is not enough potential for innovation in the markets, not to mention the constantly dropping ROI.

In a way, growth promoted by the trickle-down effect is being stalled due to the marginal market, and the market is going through a transformation into a recursive funding market, in which only the multiplier effect can be anticipated.

Of the entire 404 trillion dollars that are subject to financial asset monitoring, 200 trillion are non-bank financial intermediation (NBFI) assets.

### [Trends in Global Financial Assets]



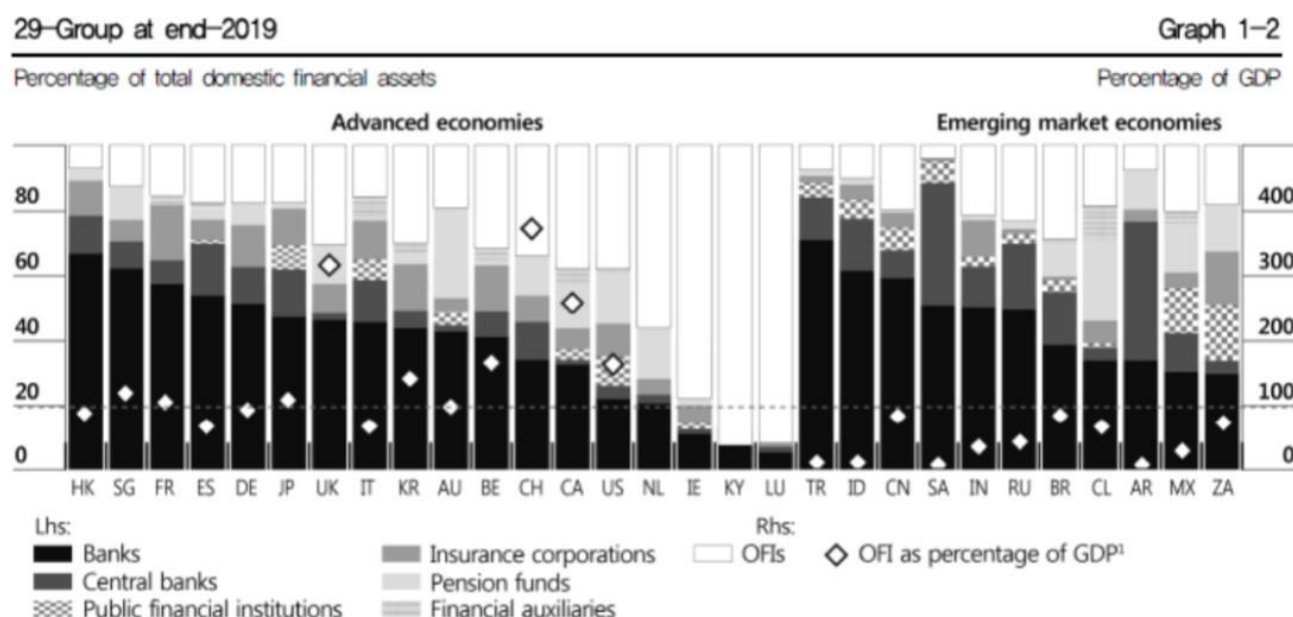
Note : 1) NBFI sector includes insurance corporations, pension funds, OFIs and financial auxiliaries.

2) All deposit-taking corporations.

3) Public financial institutions.

Source : FSB (2020)

## [Composition of Financial Assets in Major Countries]



Note : Jurisdictions with OFI assets greater (lower) than their GDP will be above (below) the horizontal dashed line. The ratio of OFI assets to GDP for the Cayman Islands (179,056), Luxembourg (22,199), Ireland (1,404) and the Netherlands (781) are not shown since they are particularly high compared to the rest of the jurisdictions.

Source : FSB (2020)

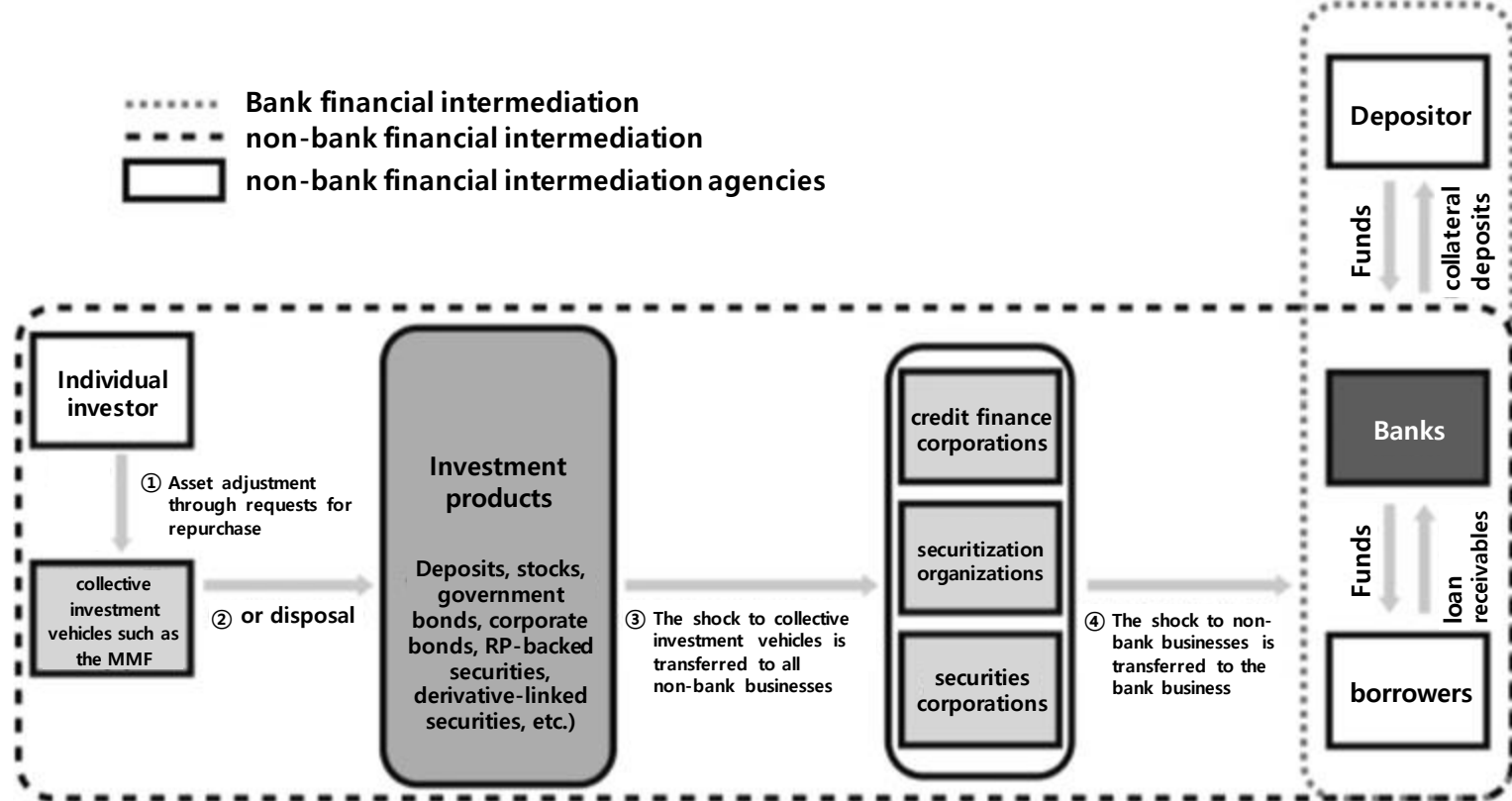
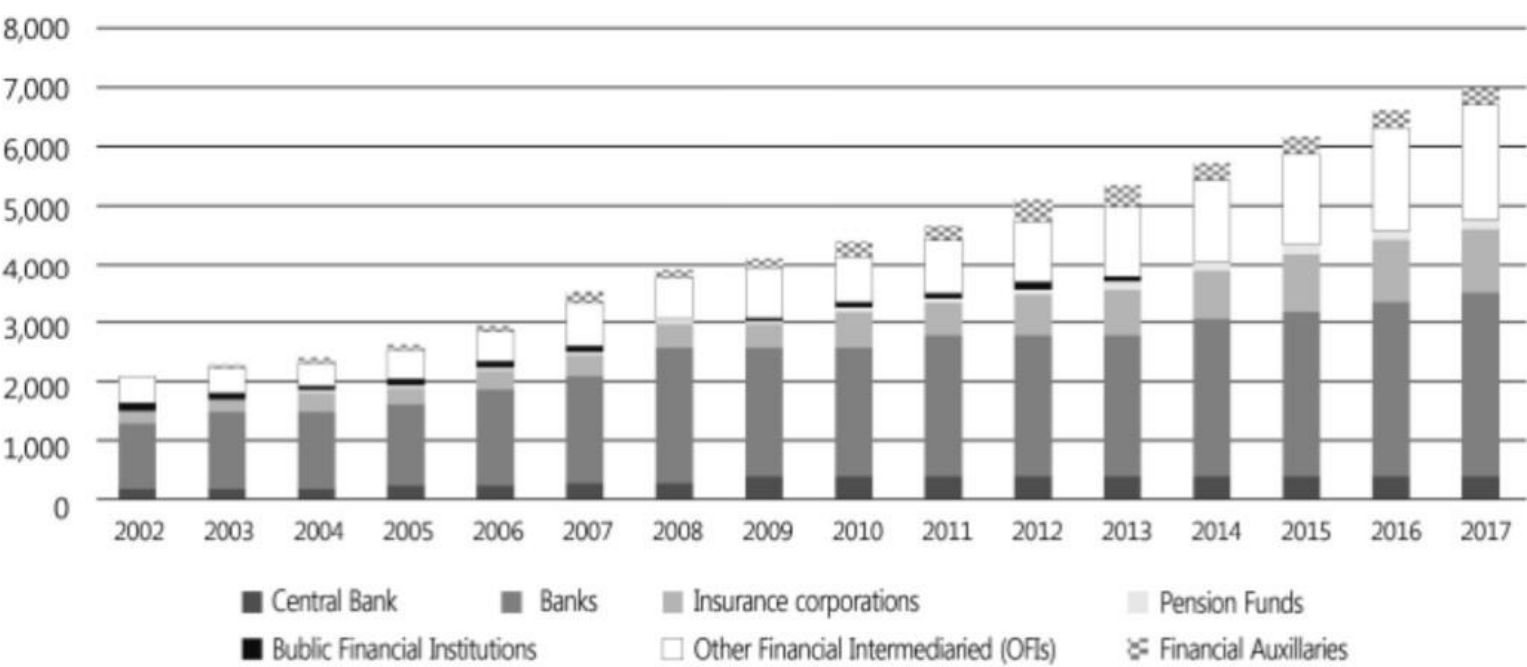
What draws our attention here are the other financial intermediaries (OFI) and insurance. In the case of the Republic of Korea, the assets of financial institutions, which were known to be 2.1361 trillion dollars in 2002, grew continuously every year to 6.9882 trillion dollars in 2017. Banks make up the majority at 44.7% of all institution-held financial assets as of 2017, followed by OFI (26.8%), insurance companies (16.0%), the central bank (5.4%), financial subsidiary institutions (4.4%), pension (2.5%), and public financial institutions (0.2%).

The non-financial intermediation DeFi as perceived by Stoa Network focuses on being able to autonomously expand liquid bonds that are based on collateral margin and mark to market according to market adaptability, so that a run on the fund does not occur.

Stoa designs this as a leverage, which then connects insurance, asset management, and crowd-funding platforms through governance, making it possible to form a variety of financial buffers for securitized bonds.

Existing risks are passed on through the following interconnected process.

[The volume and composition of assets of all domestic financial institutions]



\*Source : FSB datest (Hyung-sik Noh, requoted from 2019 version)

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## **<Interconnectedness between Banks and Non-banks>**

The DAO of Stoa Network does more than just building a liquidity model based on a holder participation approach and the digitalization of traditional financial services, such as staking, deposits, or loans. It offers a risk management model as well as a DAO model as RegTech and SubTech with respect to procyclical interconnectedness between financing liquidity and market liquidity. Through such a model, the limitations of direct/indirect financial intermediation and non-financial intermediation are addressed, and an innovative protocol for a healthy and functional DeFi model is established.

### 03. Significance and Ripple Effect

Stoa Network is a protocol not only for overcoming the limitations of the existing DeFi, but also for taking into consideration the limitations of the roles of traditional financial and non-financial intermediation markets.

It is more than a simple implementation of a technical protocol; it is a constitutional improvement from the existing FinTech and financial services, which seeks to set up all-cycle FinTech through the autonomous financial intermediation platform that is support-oriented and liquidity-centric for customers.

#### [Comparison Analysis: Existing DeFi vs Stoa DeFi]

Criteria	Existing DeFi	Stoa DeFi
Key concepts	Staking, loans	All-cycle FinTech chainization -Insurance -Custody -Payment -Staking -P2P Lending/Funding -Asset Management -Transaction (Spot/Future/Forward/Bond)
Key purposes	Compensation, Extended payments	Networked direct transactions (USDT lead)
Realistic limitations	Fee	Lower cost than traditional financial transaction fees thanks to Final Chain -Enhanced reliability model (DPOR)
The Stable Strategy	1:1 pair to asset	1:N pair extension as asset buffer
DAO Strategy	Participation through holder votes	Configure the form of DAO according to the role of the business. Logically divide the governance operation into holders, actors, and linkers. -Holder : Stakeholder of the token -Master : Value maker of the token (DeFi Stoa and Care Stoa require expertise) -Linker : Linker of the token business
Method of forming the token value	Recursive holder	Derivative holder
Building reliability and underlying asset	Staking-type smart contract	Smart contract licensing digital values to assets -Bonds, NFT, and coins



The most ecosystems of the current cryptocurrency economy models are engineer-oriented, and the market was created by the limitations in technical implementation. Such limitations in technical implementation have, of course, reduced the spread of secondary and tertiary risks thanks to the implied transparency and controllability, resultantly adding value to the technology-intensive market and creating memes that have built logical reliability on digital assets.

The following financial market structure demonstrates how the direct/indirect financial market approach was designed for Stoa Network.

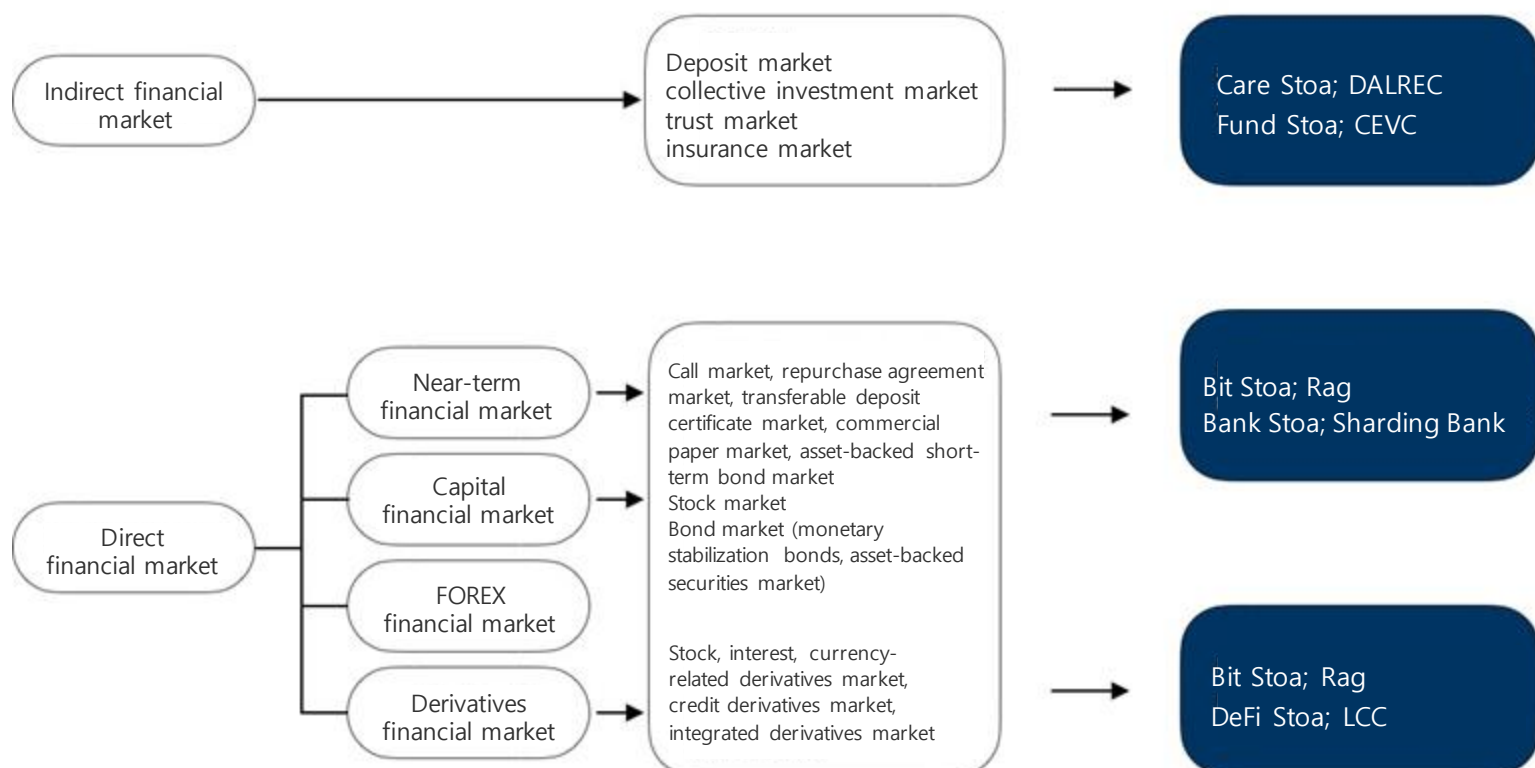
### <Comparison: Traditional Financial Market vs Stoa Network>

We are building an ecosystem so that the type of financial platform, which is required for the decentralized financial service of the traditional financial market, may be leveraged for all cycles. A DAO system, customized for each platform, will be established.

A platform-specific DAO will enable better risk management and liquidity strategies, which are more important than inter-coin swaps, holder staking, smart contract-based deposits, loans, or interests.

There are two reasons for instituting the liquidity strategies: firstly, they will allow STA token strategies, which are derivative integrated assets used to transition value, and secondly, stable token strategies will promote flexible circulation of capital buffers.

#### [Flow of Indirect and Direct Financial Markets]





## 04. Stoa Network: Points of Differentiation

What differentiates the DeFi of Stoa Network from the existing DeFi is that it services the platform elements of financial intermediation as FinTech in order to promote all-cycle FinTech chainization.

The decision-making system as DeFi and the major contributors of the token economy model were classified according to roles rather than the staking model of mere holders to make up the value ecosystem of DAO operation.

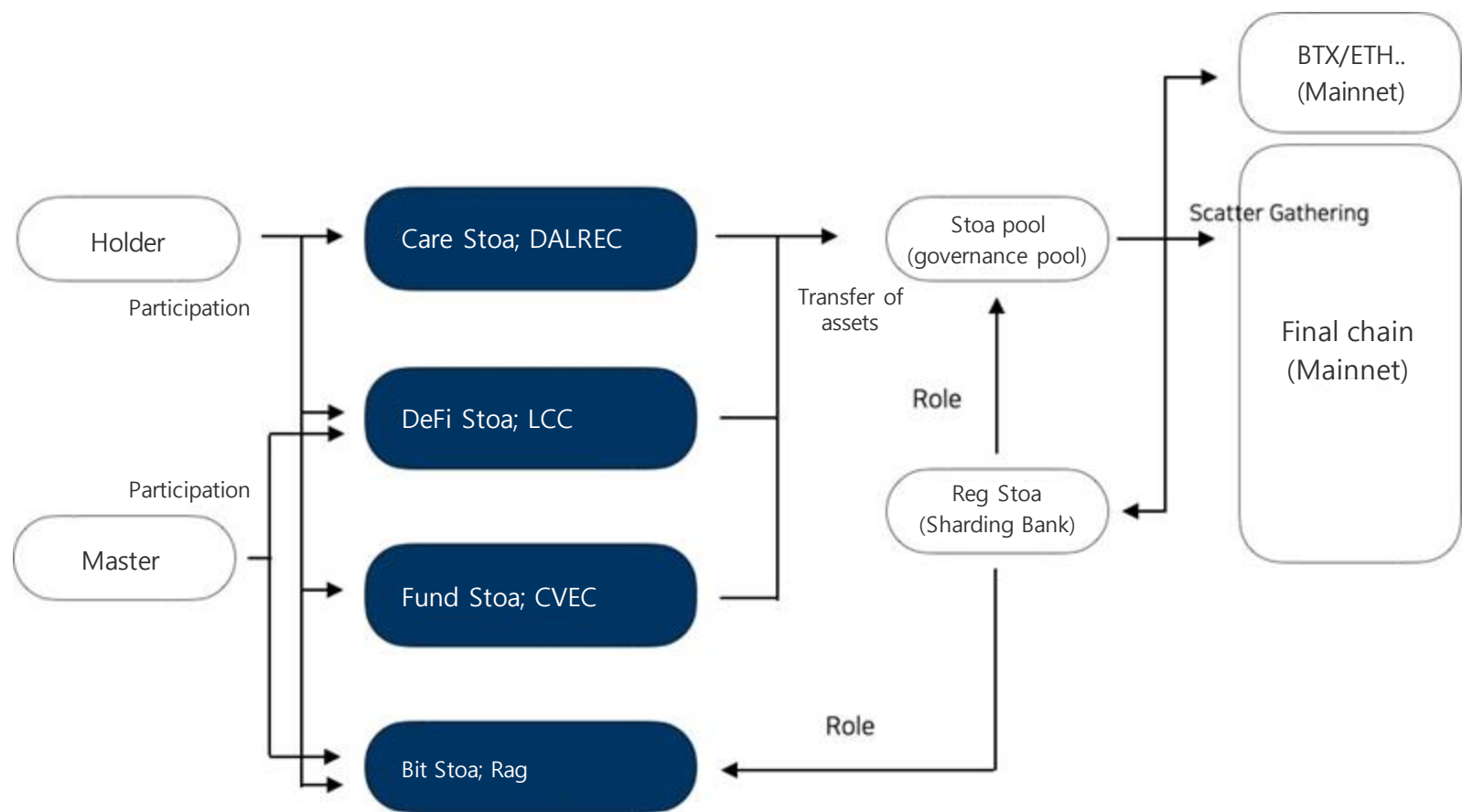
The constituting roles of DAO are classified and managed according to the characteristics of each platform, but as there are holders who are the stakeholders of the Stoa Network, there are also masters who are the value makers of the token, and linkers who are the facilitators or linkers of the token ecosystem.

In the case of a decentralized insurance service, for instance, the user would be unable to determine for oneself the compensation for risks from hacked digital assets and misplacement of important key information. The role of an actuary comes into play who would make assessments and judgments. This role would require someone with expert knowledge in particular fields, and the limitations exist in the fact that the expertise required in determining the compensation in a digital ecosystem should be different from that required in general fields. In addition, there are hurdles in setting up an effective and balanced compensation logic when applying a specialized digital insurance model. The existing DeFi models are sufficient in terms of realizing governance through holder staking and holder voting plus making smart contract-based deposit and loan models. However, they are nothing more than blockchain contract models and financialized strategies of one-dimensional financial aspects; almost none of them are created to extend financial portfolios and chainize the financial ecosystem.

The reason for building DAO models to develop an all-cycle FinTech infrastructure that embodies the Stoa Network DeFi was that there are fields that require diversification of decision-making systems according to the model of the DeFi operation platform.

The typical user would take part in the holder-type compensation, payment, settlement, and swapping of tokens, whereas social-type participation that contributes to DAO would require areas of expertise as autonomously run models of each platform. In such cases, transparency and reliability are ensured when such areas of expertise are run by those designated as masters.

[The DeFi Process for All-Cycle FinTech]



## 05. Business Procedure and Platform Structure

### Collective

•In finance, there have not been many cases where collective intelligence was leveraged as part of a business activity. This is because it is difficult to see the collective as the main decision-making body of social behavior when judging the behavioral reactions or situations of collective intelligence from a financial modeling point of view.

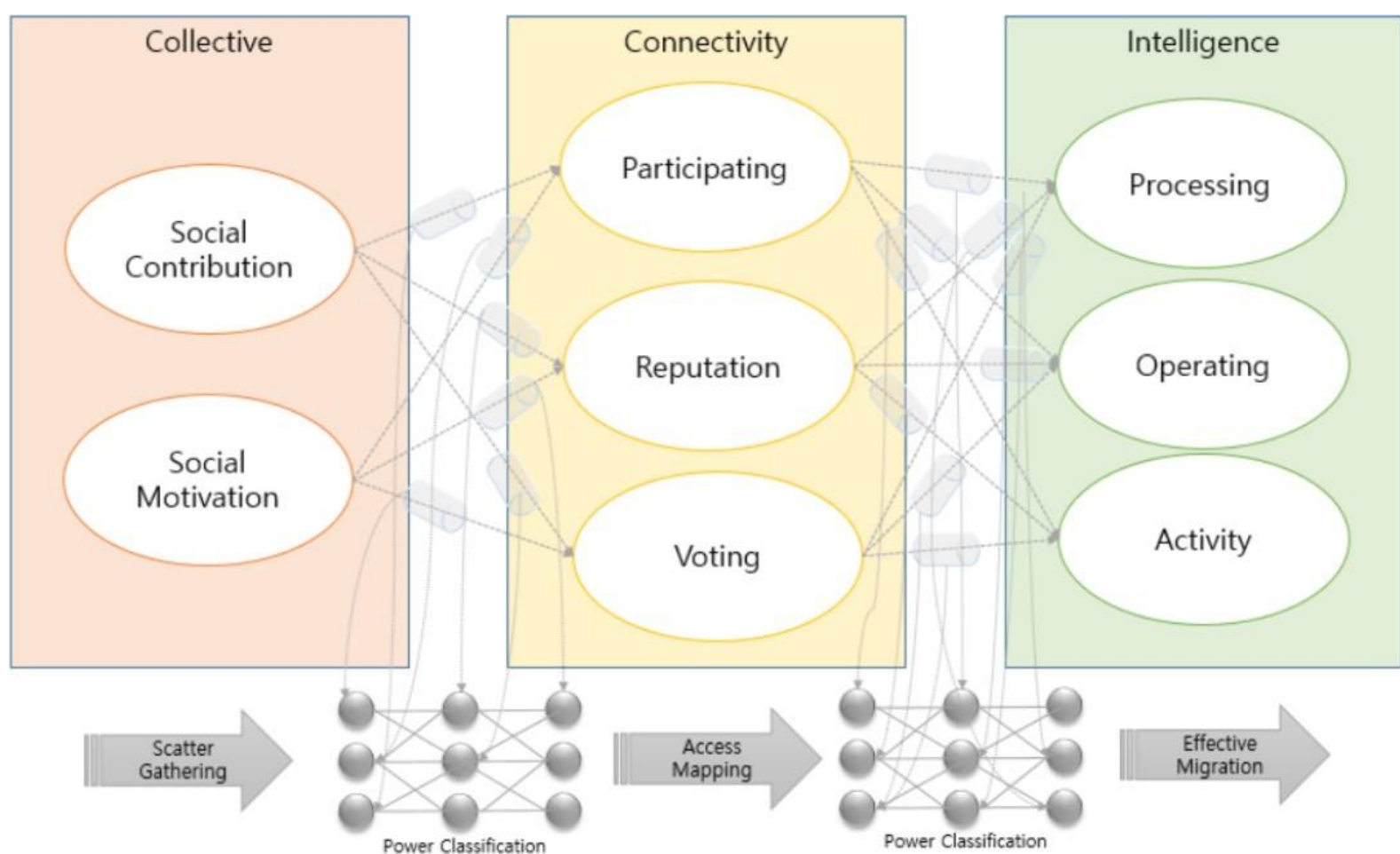
### Connectivity

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### Intelligence

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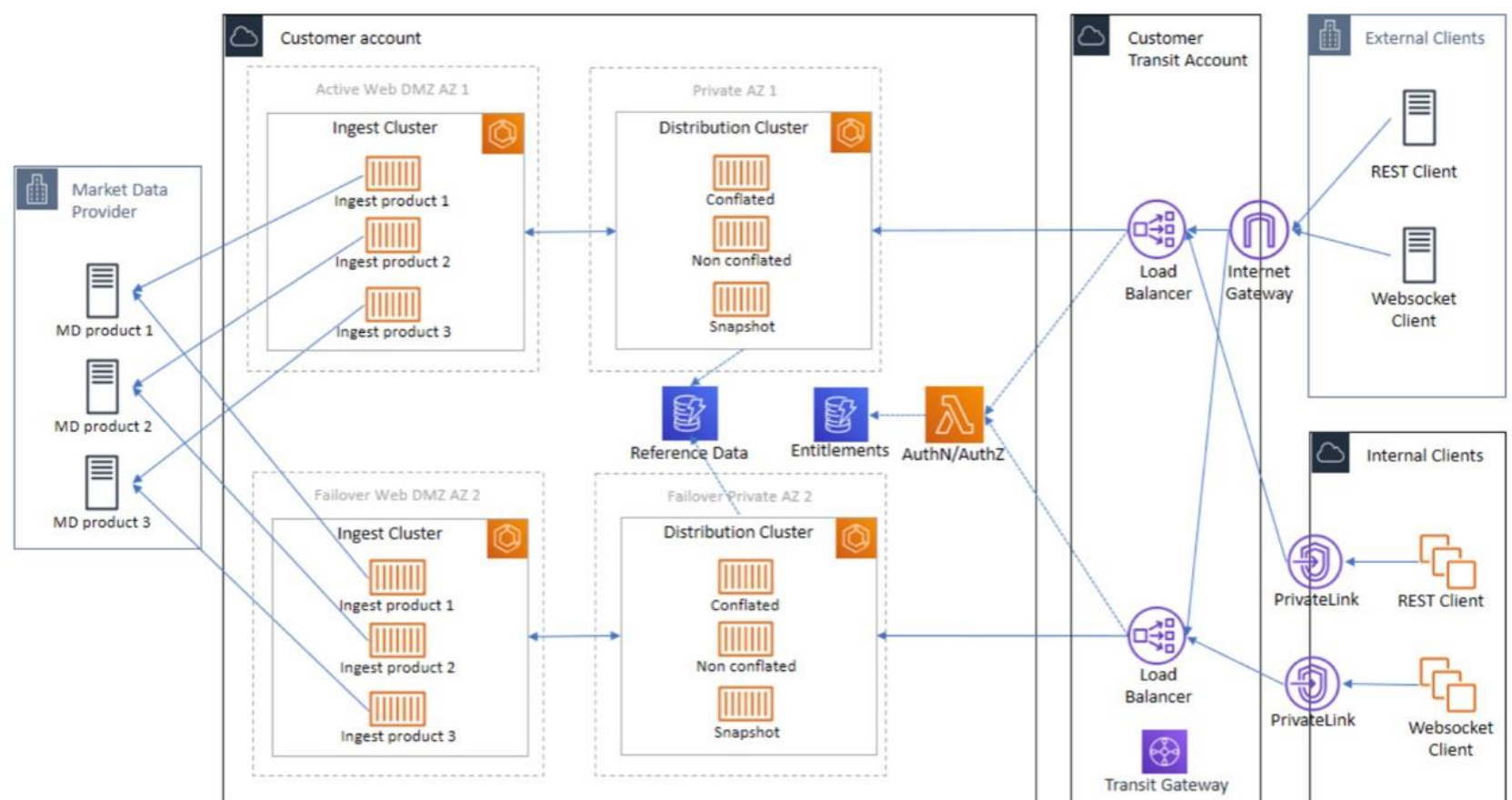
### [Flow of Business Procedure]



## 06. Interface

- Define the key components for participants in the autonomous financial services on the workloads executed on DeFi network, organize and offer as examples of different data sets a market data-oriented analysis for insights and alternative data, such as real-time and historical market data as well as consumer behaviors, and apply them in the design.
- The DeFi data architecture should share the following characteristics:
- It should define strict requirements (smart contract constraints) on user rights and data redistribution and ensure that its design is based on a proposed hedge model.
- It should have a short delay requirement according to the method of using market data (e.g.: transaction decision to post-decision analysis) and must support real-time information search on aspects that change on less than a second to millisecond basis.
- It should connect to a reliable DeFi contract-based network in order to supply and exchange market data, and build an objective process based on an intuitive interface.

### [Reference structure diagram through the market data-distributed platform]

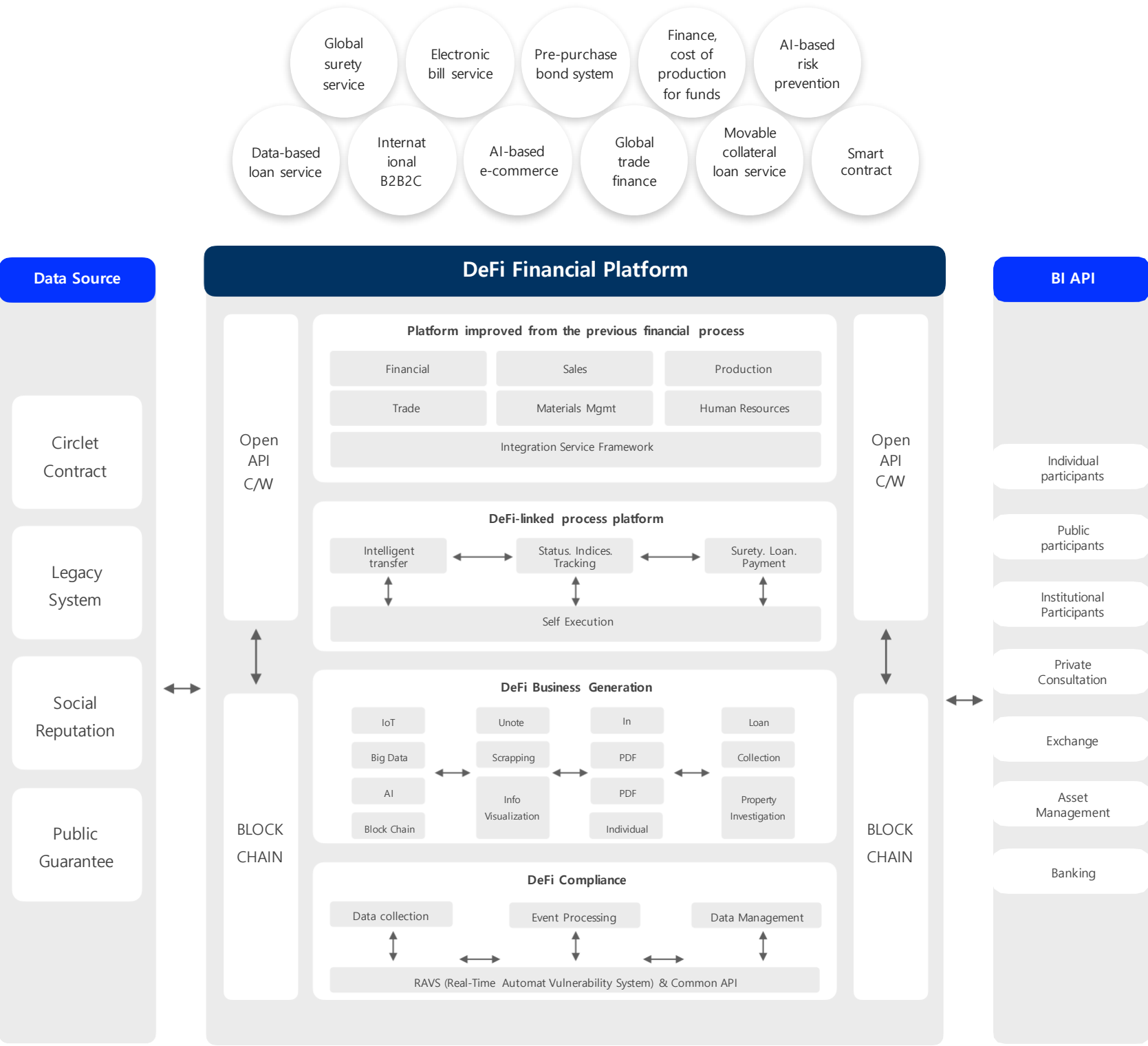


## 07. Platform Structure

Constructing DeFi as an autonomous market model requires the integration of an autonomous and intellectualized operation model with a reputed and reliable engagement model appropriate for the decentralized financial networking. Critical in this process is the classification of collectivized social data from the existing data source.

- The processed intellectual information that is optimal may be offered through the AI-reinforced learning base for data classification system, and the API set provided through such a model can be connected with various financial services.
- DeFi is, in a way, an unethical network whose design makes it difficult to distinguish the liable party. As such, there must be a hedge model for any DeFi model, which must be available as an option in order to design the reputation of contract wallets.
- The composition of funding may be operated as open or closed type, which can either leverage the DEX structure or a stable stacking model in the case of a simple interest-paying model. A stable financial asset and currency circulation model for a liquidity system will form through this model, following which a business ecosystem is built by igniting inflation in the market.
- The integration of a DeFi-connected process platform with the improved platform for the default financial processes can integrate DeFi Stoa with DeFi Compliance, promoting an extended range of DeFi products.
- Through this, a wide variety of platform-connected financing may be built, including the global surety connections, electronic bills, bond systems, lending and surety on financially operating funds, intellectualized risk prevention, data-centric loans, AI commercial transactions, and trade finance.

[Reference structure diagram through the market data-distributed platform]





## 08. Structure of Reference Service as Platform Banking

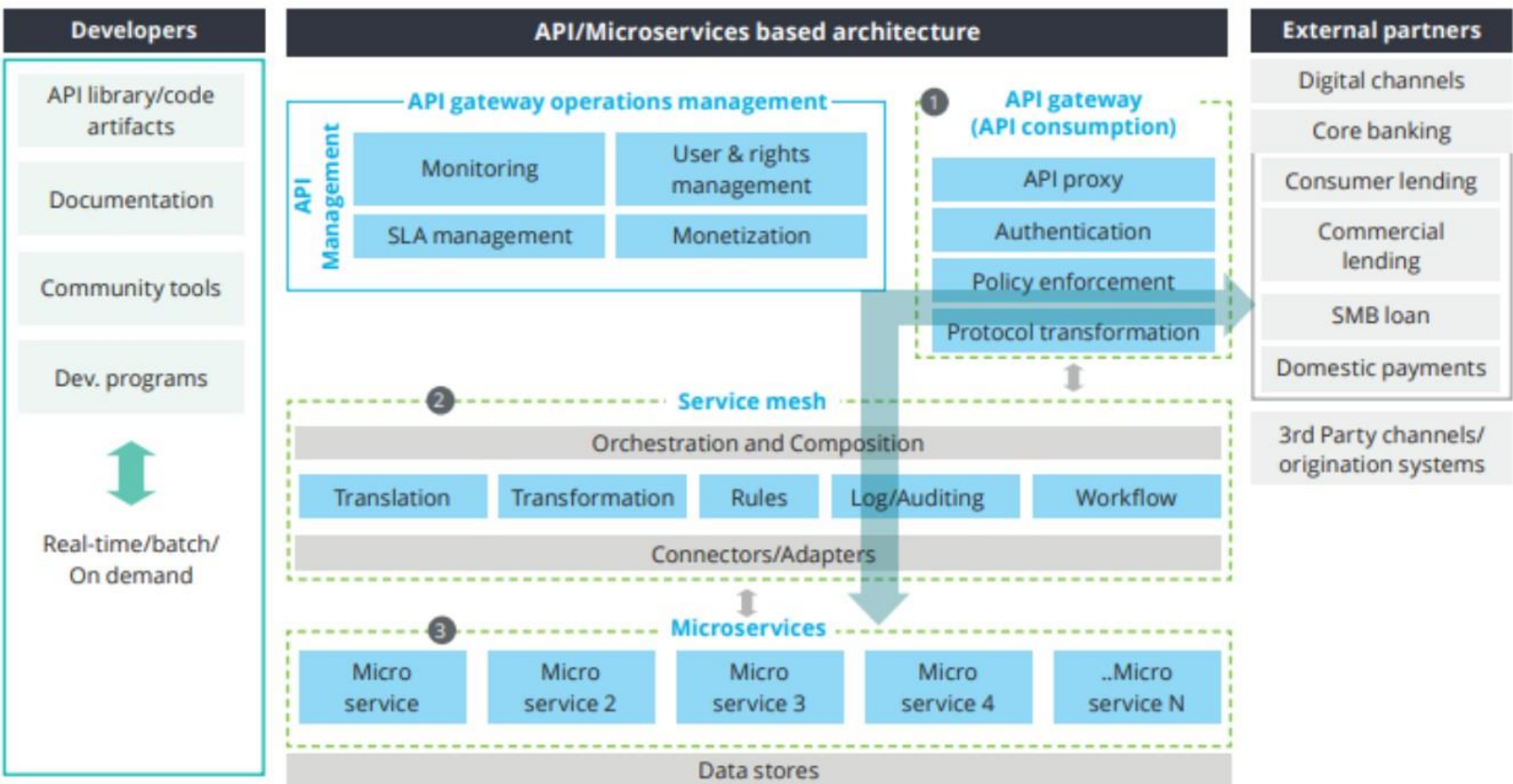
### A. Microservice-based architecture: The basis of platform banking

For most banks, it requires a substantial re-engineering of the existing core banking application architecture and infrastructure to successful adopt platform banking standards. On top of this, the process requires a company-wide transition into a microservice-based architecture—the key element that enables the efficient and timely integration with third parties, which could very well be the major competitive edge in platform banking ecosystem.

The current core banking architecture for banks should be highly related to the approach and level of technical innovation required to support one of the platform banking business models. Banks that use this kind of a traditional core banking architecture can make the transition through a step-by-step process by minimizing the risks involved in prudent approaches towards near- and long-term goals, thanks to multiple point-to-point integrations and monolithic applications for batch processing. Generally, banks that have adopted modern cores that use mature, service-oriented API-based architecture can make the transition through the big bank approach, thanks to their mature IT structures.

Figures 3A and 3B illustrate the three key elements, which are (1) API Gateway, (2) microservice-based conceptual architecture, a service mesh, and (3) the microservice-based core that banks must develop to build and maintain the ecosystem of external partners. These three components are the essential elements of platform banking for banks, together supporting the integration with and access to other companies through open standards, data security, and scalability.

[Microservices-based architecture(representative)]



## B. Near-term: Building and Integrating a Service Mesh

In the near term, building a service mesh should come as a priority for banks with a legacy-core banking application architecture to abstract a default legacy platform.

Because the legacy core can help banks transition into a microservice-based architecture with the help of adapters through service meshes that are integrable with the legacy core, it does not pose any limits to supporting platform banking.

As its name suggests, a service mesh accelerates integration by exposing API collections to internal and external parties and interfacing with core platforms along with product composition and adjustment logic.

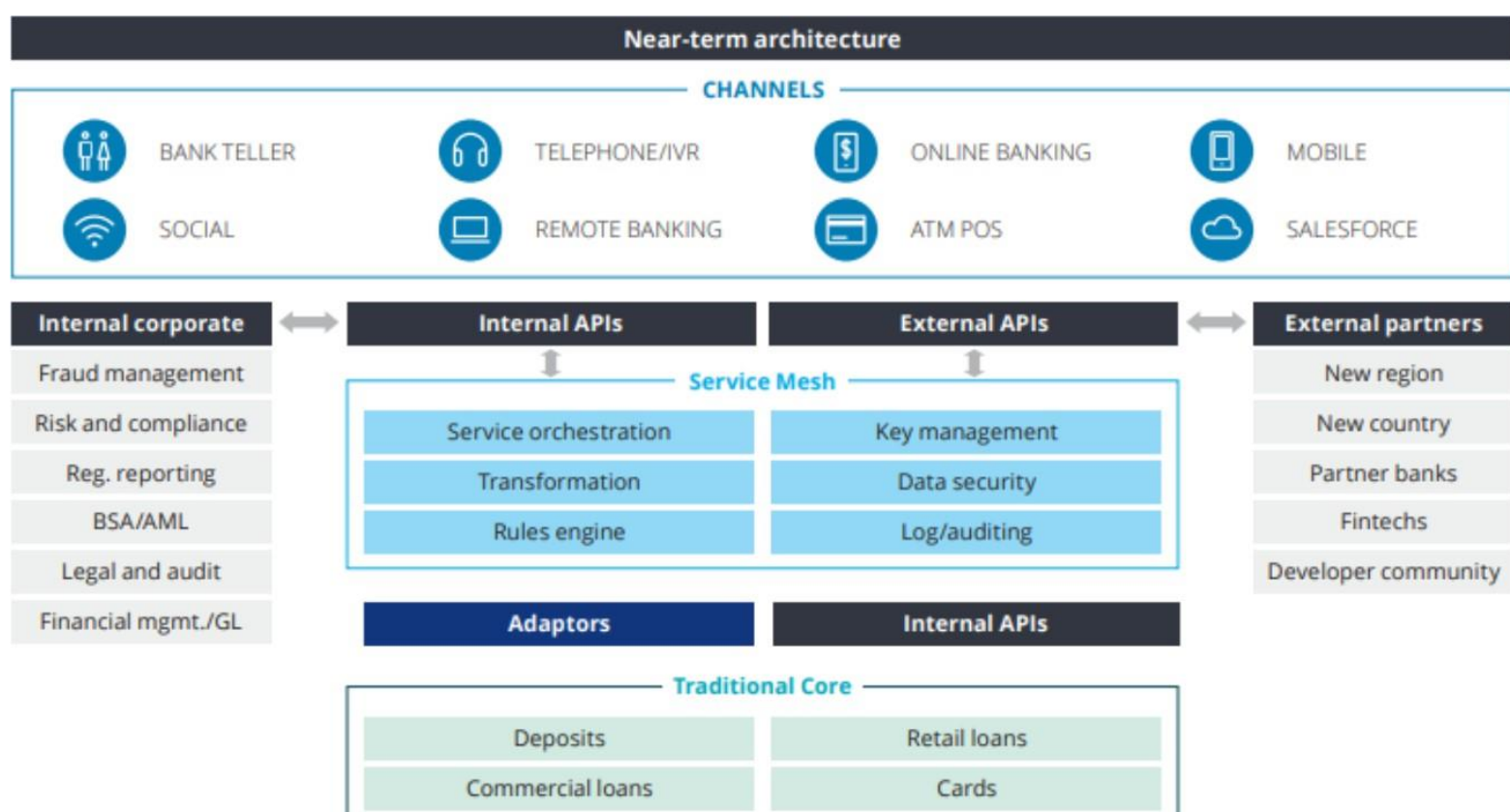
For instance, a service mesh offers required product composition-based internal services, such as the “acquisition of credit score” and “acquisition of an option to acquire” after being called for services like an acquisition decision, and such a service is transmitted to the internal/external parties involved, where the service mesh not only minimizes the number of integrations among in-bank endpoints but also offers a standard, clearly defined, and well-documented interface for the external platforms.

In a way, a service mesh functions as a gateway to external parties and enable the ‘platform’ function of platform banking.

As can be seen in Figure 5, API and service meshes can help build an comprehensive hierarchy integrated into the existing banking core. Time to market for new products or services is still limited by the long development and deployment cycle of the default single core.

Since the entire core platform resides in the infrastructure that does not scale in real-time, banks may still experience difficulty in scaling this architecture. However, banks can begin to offer leading products and services on their own in the short term, as well as partnering with niche players to offer products and services in a new market.

### [Near-term conceptual architecture]





## C. Long-term: Microservice-based Core

In the long-term, banks must make the transition into the next-generation microservice-based core platforms by connecting with a service mesh, and those banks with the ambition of building the best possible market in the industry must offer financial services in individual stacks for each product domain as well as constructing a scalable microservice-based platform.

Figure 6 illustrates a typical microservice-based core architecture that can support a true platform banking-based ecosystem. The essence of this architecture is the integration of services for each product domain, such as deposits, retail loans, and commercial loans.

In this kind of architecture, services can be classified into two types, namely product-specific services and common services. Product-specific services refer to unique services customized to support particular products.

For example, different loan portfolios have varying fundamental risks, conditions, and offers, which can lead to varying acquisition services and require unique services to support retail loans for commercial loans.

Common services are cross-product services that are not limited to specific products.

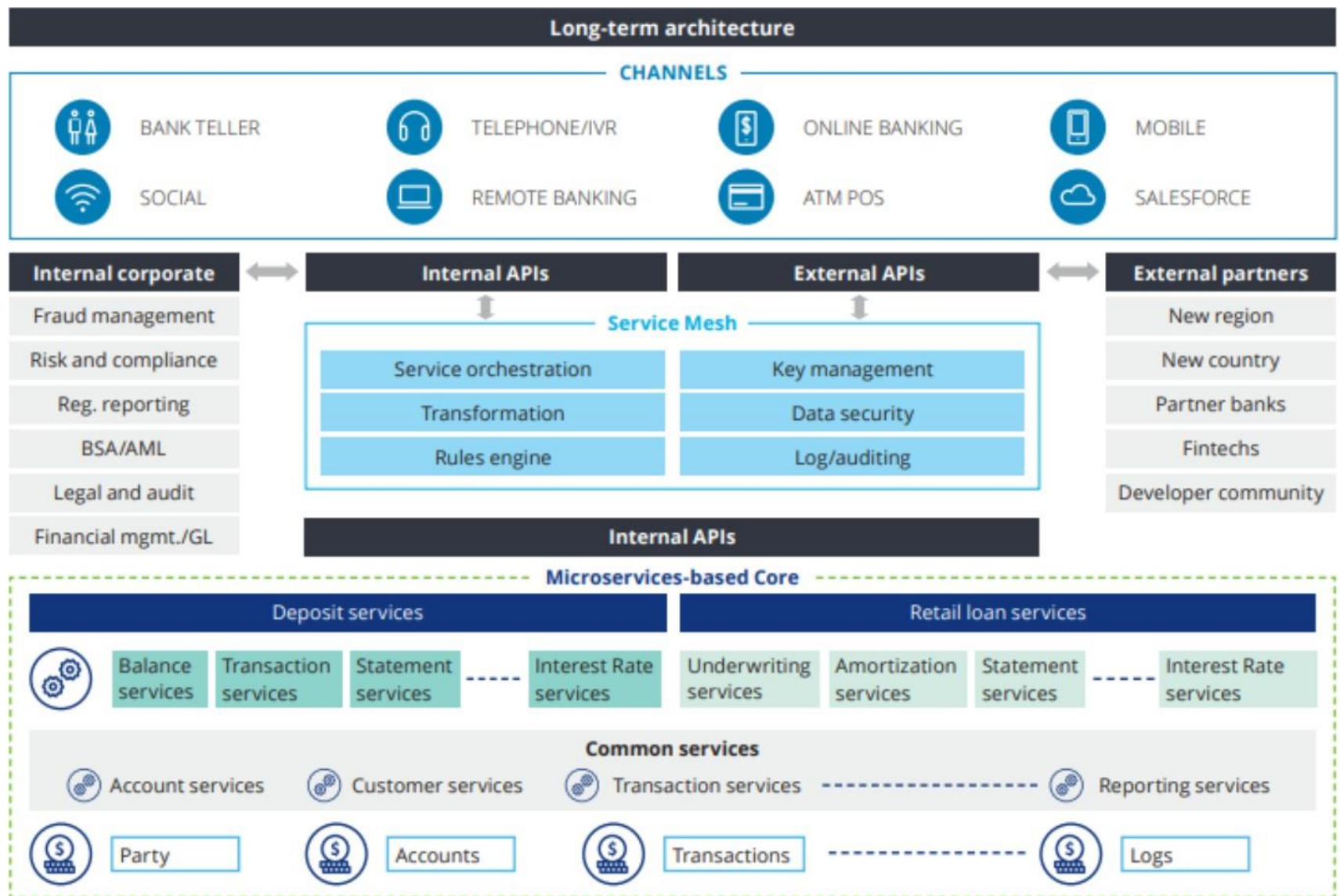
One of the examples is the account service includes basic services, such as creating accounts, updating accounts, and fetching account details. These services are the essence of general core banking platforms, and do not differ product by product. Only the default data vary according to the particular needs of the product. The purpose of microservice-based architecture

is to support banks in offering unique services to their customers by integrating the services of different parties. For example, a market owner may integrate an industry-leading boarding service offered through FinTech with an in-house acquisition function and reserve receivables at a third-party bank.

In other words, loan customers in the market can protect themselves from the potential risks caused by various stakeholders in the backend. Such a proposal can be effectively carried out only in microservice-based architectures (banks may try to offer products similar to this using the near-term architecture). Nonetheless, this will face serious constraints due to the limitations of the architecture.

The growth of the RegTech market, which is the regulation model for DeFi, plays an essential role in establishing a critical reliability system in the cryptocurrency market. Stoa Network seeks to build in-depth technical system for highly accessible, convenient, and user-friendly services designed to offer a variety of opportunity cost to financially excluded customers. In doing so, Stoa Network will consider the latest market to create a brand-new financial system through a realistic and effective digital asset transaction infrastructure that combine extended digital financial transactions as well as direct/indirect finance and non-finance intermediation transactions.

## [Long-term conceptual architecture]



## 09. Core Elementary Technologies and Competitive Edges

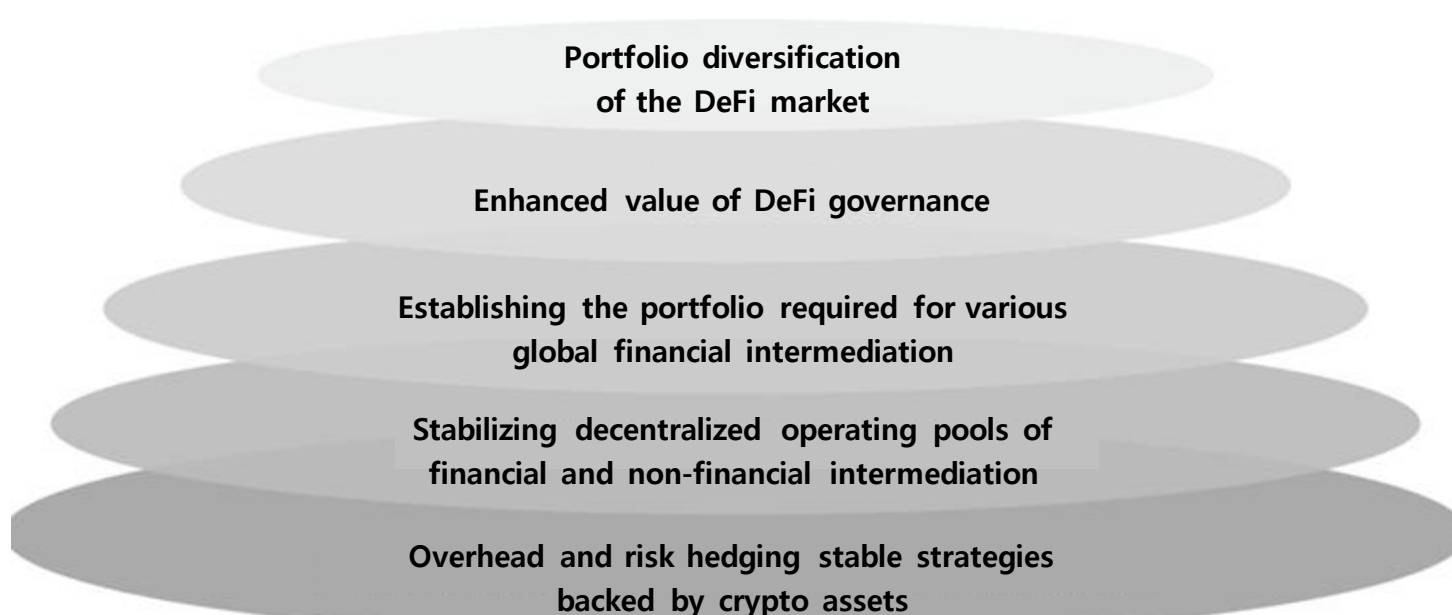
As a DeFi model, Stoa Network is made up of various technical systems based on the STA token strategy and a wide range of elemental technologies integrated into it.

Our project is significant in that it establishes various technical systems for the chainization of a DeFi-enabled all-cycle FinTech platform by implementing the token economy model through service and platform in the actual FinTech market, instead of through a smart contract for certain protocols.

Although payment and remittance are the main business models for the FinTech market, crowdfunding, cryptoassets, online asset management, and internet banking are also part of the mainstream model. The digitalization of the asset market and the maturation of the fully digitalized payment market have accelerated the changes in the traditional financial market. The beneficiaries of rapid growth due to this acceleration were the RegTech and SubTech markets.

In addition, a set of step-by-step strategies will be implemented for Stoa Network to raise its competitiveness of DAO as it seeks to contribute to the increased value for various stakeholders as well as increased reliability of the financial market. These strategies include establishing the framework structure of the DAO protocol, successfully promoting the flow of FinTech between financial and non-financial intermediations through DeFi to prepare an effective use model for the global financial infrastructure, and expanding the digital asset portfolio.

### [Key Objective of the Stoa DeFi Framework]



## 9.1 Credit Contract Technology

In finance, reliability plays an important role in connecting the reliability process between debt and liquidation, where loans and bonds may find significance only through a stable financial reliability system.

Real-world reliability is built upon the formation of the liquidation value of bonds with key rights, which has been operated for so long by the government systems. The reliability contract within the Stoa Network lies in the interfacing of the reliability process established by smart contracts.

Interfacing the reliability process is, in terms of technicality, a type of electronic signature process.

Electronic signatures do not signify transactions between decentralized blockchains. Rather, they signify smart contracts that exist in the process of contributing physical securities, IP (intellectual property) rights, bonds in fixed interest-bearing securities as well as their linked securities for the similar real right to the Stoa Network pool, or of providing substantive rights to promote them as securitized bonds of STA digital assets.

Our credit contract technology refers to a type of concrete contract that can be verified with an electronic signature. The technology will enable us to technically execute the proof-of-contract process of contracts, which begins with the digitalization or electronic verification by a third-party legal service, followed by a signature system, and finally a smart-contract swap.

## 9.2 DeFi Insurance (Care Stoa)

The DeFi insurance refers to decentralized insurance, and the decentralized aspect of insurance refers to the autonomous compensation system of DAO, which is the decentralized element in determining compensation.

The DAO model of Stoa Network may run a different operating system depending on the nature of the platform. The reason for classifying holders, masters, and linkers is because different expertise is required in the decision-making process of financial intermediation, and the right expertise can help shape a balanced process of providing and determining reliability.

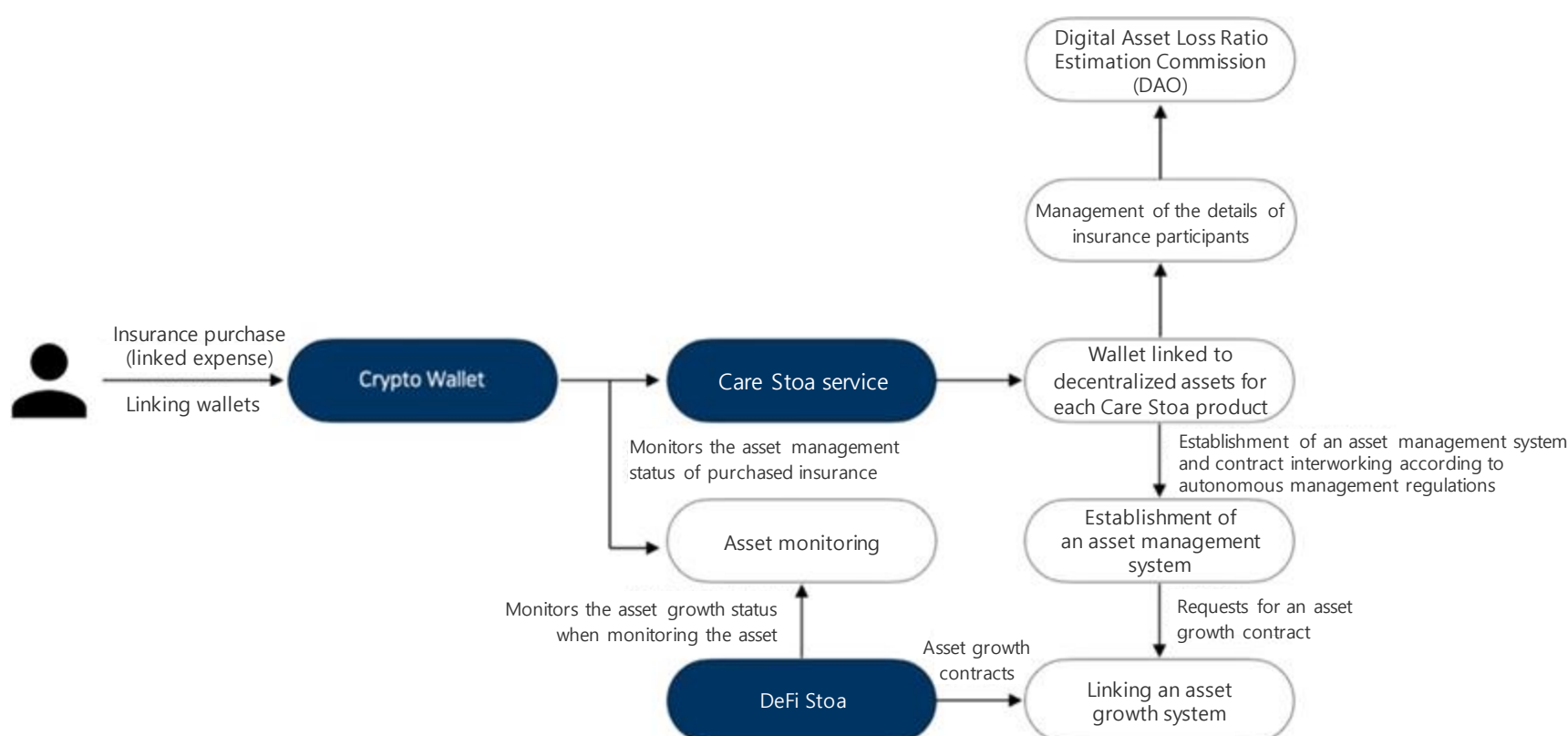
Most insurance services are closely related to our actual lives. Car insurance, coverage insurance, variable insurance, and many other elements are combined to provide suitable services to us. Nevertheless, in the case of digitized assets, it is nearly impossible to locate a misplaced private key for signature in the blockchain network or fix an unintended ledger stored in the blockchain network due to an incorrectly processed transaction.

A model that provides compensation for my reputation, moral hazard, hacked digitized assets, or misplaced private keys has yet to be introduced in the market. Even if insurance services are actually made to address these matters, the task of establishing a process for assessing and determining actual compensation still remains a challenge.

The problem with insurance services is that they put the insurance provider at risk of loss because they need to be operated with risk-based capital (RBC) on insurance premium in mind.

The experts, namely the masters, who will be responsible for judging the risks of digital assets for making actuarial analysis and decisions, should be information technology experts most likely specialized in the field of security with a thorough understanding of signature models in blockchain and cryptocurrency.

### <Care Stoa Structure Diagram>



From the perspective of Stoa Network, DeFi insurance is the first gateway to a type of capital buffer and a potentially important asset as digital securitized bonds in financial intermediation models.

Managing the damages and risks of DeFi insurance RBC ratio is possible only through the connected DeFi asset management, which is assessed and determined based on the collective intelligence. Sustainable capital buffers and participation are required in order to resolve the run-on-the-bank problem in the digital capital ecosystem of Stoa, and because existing DeFi models shaped by the existing fans and market sentiment are insufficient in guaranteeing the continued flow of capital simply through swaps or holder staking strategies with cryptocurrency as the underlying asset, it is critical to effectively establish a securitized buffer to overcome such a drawback.

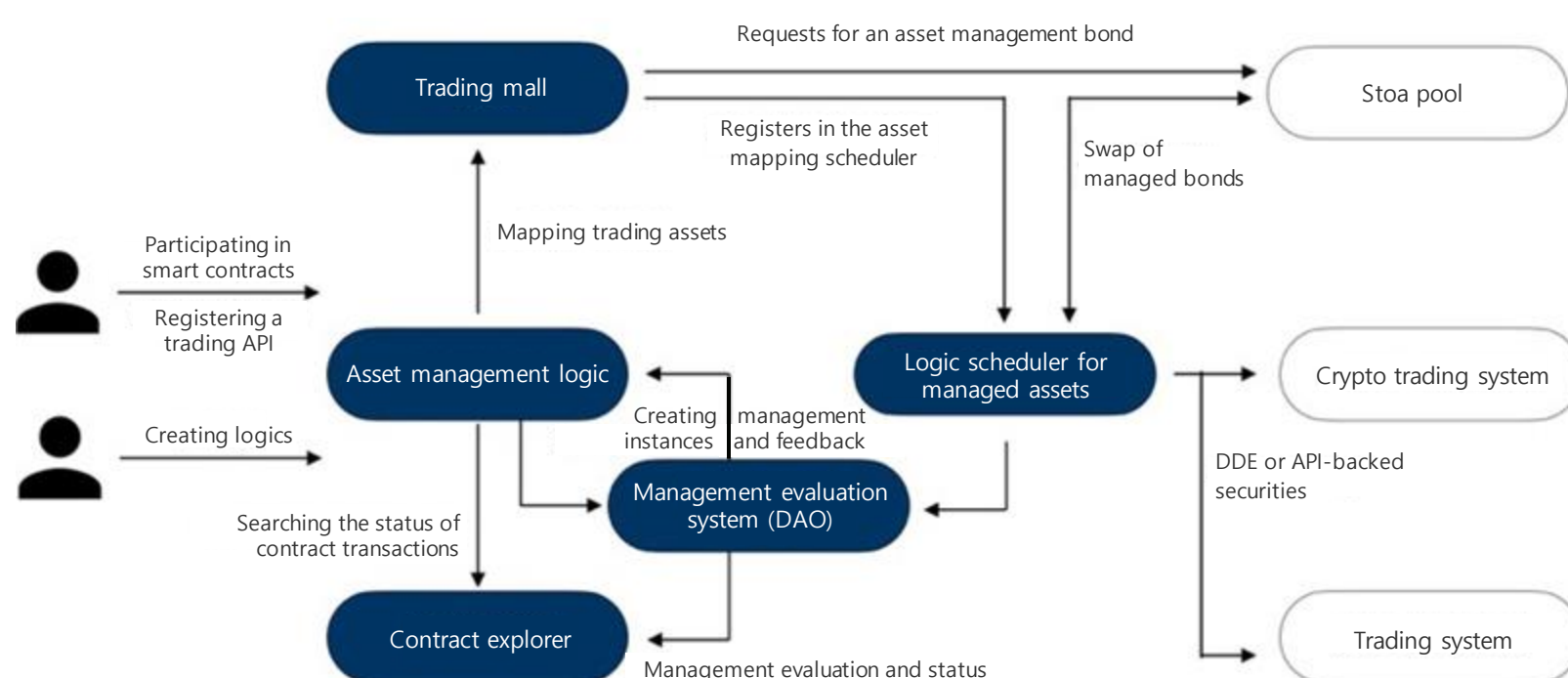


A group of experts with a thorough understanding of risks associated with digital should be the ones responsible for assessing and judging such risks, who we refer to as Masters in Care Stoa. The DAO of Care Stoa is designed to run using logics that autonomously estimate the compensation rate and implement compensation through the Digital Asset Loss Ratio Estimation Commission (DALREC).

The Masters participating in the DALREC are assigned Stoa tokens according to their roles. They use these tokens to participate in different DeFi programs according to their roles, and all of their activities and assessments are recorded and monitored through a loss ratio verification and estimation explorer, such as the block explorer.

### 9.3. DeFi Asset Management (DeFi Stoa)

[DeFi Stoa Structure Diagram]



DeFi asset management refers to decentralized asset management. This means that the system that manages and monitors the management data of assets contains the characteristics of decentralization. In addition, reliability is made to be built through the assessment of asset management logics. In other words, DeFi Stoa is a proven decentralized robo-advisor operating platform based on trader DAO.

The users participating in asset management may participate directly in those products that are represented by operation logics. The reliability model for asset management is created based on the assessments and reviews or feedback of the network participants.

DeFi applied to asset management models is a rare case. The aspects of asset management rarely have the characteristics of decentralization, and finding appropriate case studies is not easy to find.

However, a separate asset transfer process is not necessary in the case of asset management on the DeFi Stoa platform because one's assets are directly mapped onto the API rather than being transferred for actual trading of users' collateral assets.

Although a partial fee or contract expense may be incurred in the process, such a fee should be minimal, more or less similar to the amount charged during deposit, withdrawal, or participation in banking.

There are two kinds of people who would access the asset management logic of DeFi Stoa. First, there are general users who wish to grow their assets. Then there are logic makers, or traders.

These two have different roles, and the users' asset growing process involves smart contract-type participation, which enables the interworking of the trading logic with the API. Traders may register their own operation logics or an automated and formulated logics.

The logics created by logic makers are subject to assessment in the market through an assessment system, which determines the reliability level of the logics. People who contribute to the autonomous management logics of assets are compensated with Stoa's tokens.

Logics are not guaranteed to grow assets, but since the participants of logics that are deemed unsuitable for growing logics do not delegate their API, we anticipate logic makers to give their best attempt at developing a successful logic model.

There are a handful of procedural hurdles associated with the mechanism through which traders manage funds. Globally, the asset growth process of users participating in trading has high barriers to entry until investments or funds are entrusted according to the asset's logic.

From an asset management point of view, a large number of people participating in a highly transparent and reliable operation logic by evaluating it through a reliable assessment system and establishing a big data system to form the value of the logic is expected to resolve a substantial part of moral hazard or capital theft risk.

## 9.4 Common Exchange Rate (FOREX Stoa)

Price is a financial indicator of utmost importance, and price distortion in existing cryptocurrency transactions may be the cause of the biggest market risk.

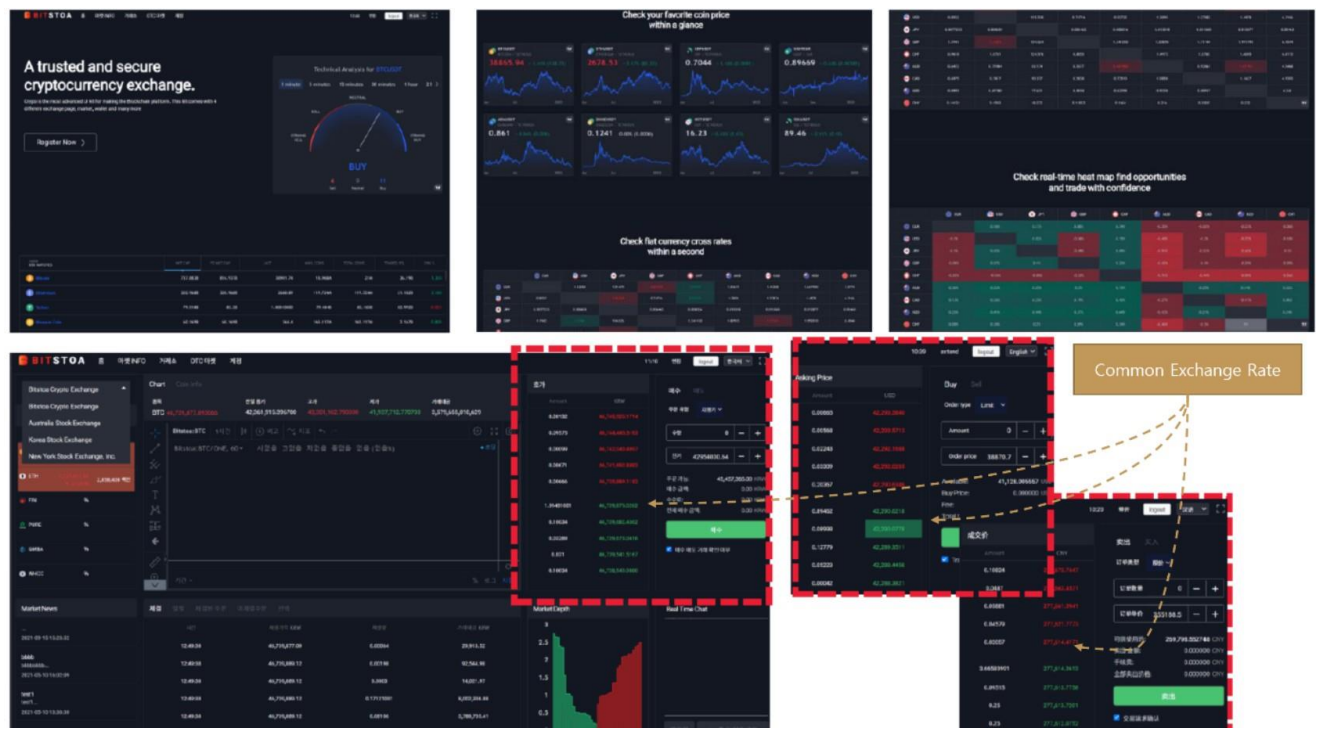
Failing to present clearly the basis for pricing in the current process of expanding the DeFi currency could result in a greater volatility due to social systems.

At the center of pricing in the existing trading market is the dollar, and we have been trading through exchange markets of each country based on dollars, which means that product standards are specialized to suit the existing futures contract trading market, like CME or BOE. In terms of economies of scale, monopolizing the trading environment that accompanies market shares over a certain size is sufficiently tolerated, since it is a type of vested right systematized and established through history.

However, in terms of globalization of cryptocurrency, this may only be convincing in single-market currency trading, while having limitations in a common market.

Because of that, the pricing standard model has been designed around the main trading market of the product, whose unit of value needs to be created through a positive integer operation, where the units are not divided by price but determined according to the price in terms of the unit trading market, in order to ensure readability of formula operation and increase market depth to form the default pricing model for derivative finance.

KRW			USD			CNY			JPY		
sell	price	buy	sell	price	buy	sell	price	buy	sell	price	buy
122,236	61.00	+0.66%	122,236	0.053870	+0.66%	122,236	0.358773	+0.66%	122,236	5.621313	+0.66%
123,229	60.90	+0.50%	123,229	0.053781	+0.50%	123,229	0.358185	+0.50%	123,229	5.612098	+0.50%
136,433	60.80	+0.33%	136,433	0.053693	+0.33%	136,433	0.357596	+0.33%	136,433	5.602882	+0.33%
831,321	60.70	+0.17%	831,321	0.053605	+0.17%	831,321	0.357008	+0.17%	831,321	5.593667	+0.17%
-0.17%	60.50	8,360,222	-0.17%	0.053428	8,360,222	-0.17%	0.355832	8,360,222	-0.17%	5.575237	8,360,222
-0.33%	60.40	8,933,449	-0.33%	0.053340	8,933,449	-0.33%	0.355244	8,933,449	-0.33%	5.566021	8,933,449
-0.50%	60.30	8,984,852	-0.50%	0.053252	8,984,852	-0.50%	0.354656	8,984,852	-0.50%	5.556806	8,984,852
-0.66%	60.20	9,017,414	-0.66%	0.053163	9,017,414	-0.66%	0.354068	9,017,414	-0.66%	5.547591	9,017,414



If the market becomes the center of a certain price, the Automatic Linked Price Model will automatically generate a change in the market according to its size.

This will help set up stable value standards according to the trading volume of the market by promoting a price shift and announcing the change of the price maker.

The market with high engagement in the ask price determines the size of the market, which is an important factor in fixing a stable price. The participation price standard of the market helps form the fundamental model price based on default trading, rather than on semiotic (referring to the fandom nature) trading, of the cryptocurrency, which then influences the token trading price. The model price may also be utilized in the risk model for liquidity and cashable exchange.



## 9.5 High-frequency Trading (Bit Stoa)

There is an underlying keyword across our projects, which is the speed. The world has witnessed an advancement in the infrastructure of optical networking, but because optical networking service is provided by a web hosting agency, they require a well-knit group of cache and proxy servers. In particular, the OLTP/OLAP architecture is crucial to guaranteeing the continued service during the event of fault.

We are a team of network and security experts with a comprehensive understanding of the operating systems for PoP and CDN models.

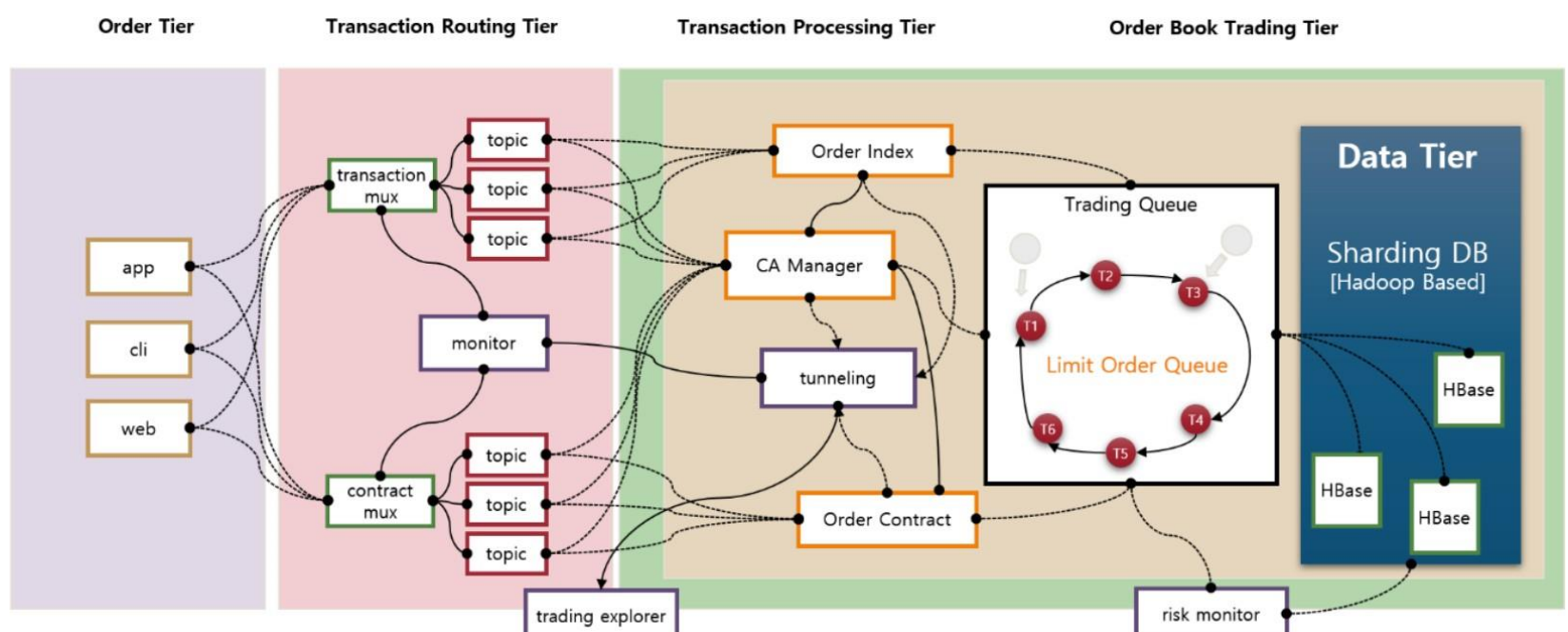
From the simultaneous access point of view, slippages in most financial markets are substantially likely to happen. In addition, we have contemplated from various angles the kind of connection necessary in terms of the different global stock networks with regards to mapping and recycling such price information.

Furthermore, in order to overcome the limitations posed by a substantial amount of system resources and power consumption during the encryption and decryption of the processed information, we have made various attempts such as lightweight processing protocols, asynchronous processing method, and duplication of logical interface. Through these attempts, we were able to maintain the speed of the global foreign exchange trading and futures trading market as is, thereby establishing a high-frequency trading (HFT) processing environment without slippage.

These projects implemented by our teams contribute to various technical foundations, and the network infrastructure that builds these models is connected to Final Chain (fnl.network), which is an independent DPOR-based mainnet.

Some physical conditions that we have considered include NIC card bonding and dual networking, scale-out NAS and hot swap & PnP support, as well as HA-level nonstop servers. On top of these, we have also implemented a process-based PubSub model with Zookeeper and Kafka, as well as an individual restful API interface system across all system stacks.

### <System structure of high-frequency trading>



## 9.6 Crypto Crowdfunding (Fund Stoa)

A lot of service elements have been added to the various FinTech incubation strategies of Stoa. Moreover, the chainization of the Stoa Network platform has been made flexible by enhancing the utilization of different STAs and building a circulating system for asset growth products through high asset capacity strategies and expansion of financial portfolios.

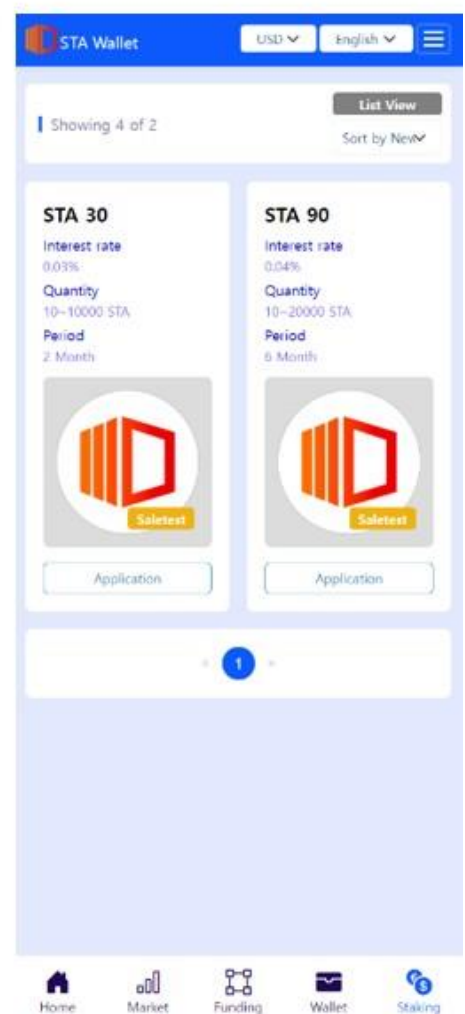
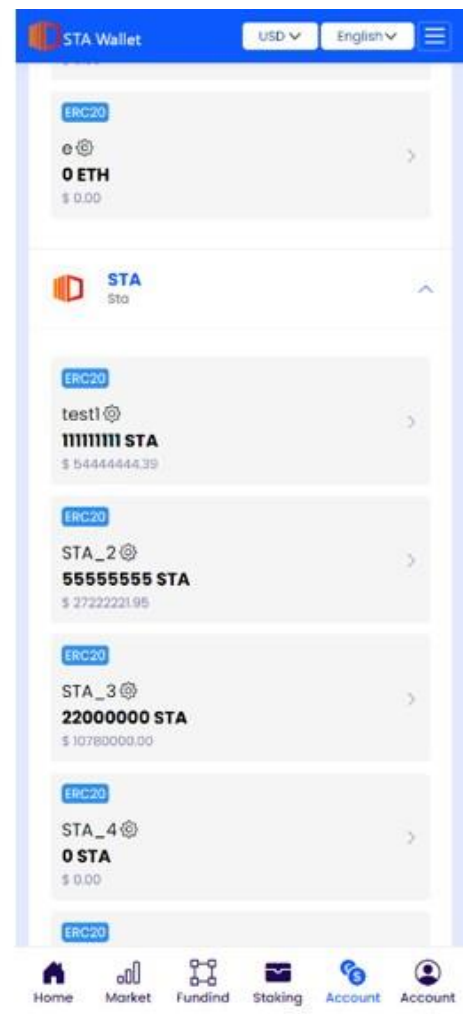
Fund Stoa is a type of crypto crowdfunding platform. Most funding platforms fail to overcome the scope of the legal (nominal) currency, mostly participating in funding through micro card payments. However, such a funding approach leads to a fair share of limitations when it comes to the acceptance of funds not to mention the possibility of deterioration to resemble other group buying websites, losing the fundamental characteristics of crowdfunding in the process.

Maximizing the effects of funding requires a quick and easy means of transferring digital assets for global participants, and we have adopted this strategy in building our funding platform to contribute to the securitized bonds of Stoa Network.

The below STA wallet is a decentralized wallet that operates with mainnet node interworking and autonomous management system exclusive to Stoa Network. Running with emails, OTP, and a secondary authentication system, the wall is free of coin swapping, staking, multi wallet, crypto crowdfunding, or any complicated recovery process.

There are global businesses that require funding, such as digital products (NFT), content creation, project planning, and performing arts. This is a service developed to provide a quick and easy funding window for these businesses.

It will be extended to various APIs of this service, with continuous upgrades in the form of a decentralized wallet like the Chrome browser plug-in.



## 9.7 Proof of Autonomous Participation as Contributors and Makers of DAO

The DAO of Stoa Network aims to make improvements to the existing DAOs.

The existing DAO approach entails the reimplementation of a protocol using the holder voting method, where the protocol reimplementation refers to the methodology of providing factors of change, such as conditions, states, relationships, and mechanisms in the system of the protocol.

The contributors who contribute to the governance of a Stoa Network are classified into three different types: the holders, the masters, and the linkers, each having different roles and corresponding token economy activities.

The DAO of Stoa classifies protocol logics of the different platform businesses for Stoa's governance according to the roles of the contributors to promote stable and transparent operation. This aims to create a continuous all-cycle FinTech infrastructure through the autonomous participation and different procedures of an appropriate DAO as well as promoting its stable management through a financial or non-financial intermediation process.

For the participation-oriented or user-centered model, contributor activities have been divided into three perspectives: the stakeholder point of view, the governance participant point of view, and the intermediary point of view. In addition, the Stoa network and the Stoa pool establish an algorithm system with a working-group DAO to enable effective DAO activities so that global users can mutually complement each other to form an autonomous system.

The value portfolio of the assets of the contracts participating in the DAO may be extended through the mapping of credit wallets and their activities.

The existing DAOs opt for increasing the platform's independent governance structure through holder and stake policies from the perspective of their stakeholders. This guarantees the independence of their token economy, but also acts as a technical or business barrier that hinders the integration of the token economy.

To overcome the limiting nature of DAO, the Stoa Network has diversified the use of smart contracts. With regards to FinTech activities, major decentralized tokens will be used. However, various profit transaction models from compensations or fees for contribution activities in the platform, or from data resell or API expansion will be mapped to credited wallets. In addition, activity transactions of the accounts mapped to the credit wallets will be monitored, based on which we hope to establish a systematic operation to enhance the value of the Stoa Network. All of this is expected to have a positive effect on enhancing the value of the Stoa Network in terms of greater engagement or justification for compensatory activities than the existing DAOs where holders participate.



Anonymous contributors, like masters or linkers, are also major members of Stoa Network governance through transactions that accompany activity compensations or profits. Their important roles can be made into credit wallets, whose value mechanism will then form a high-quality Stoa Network governance.

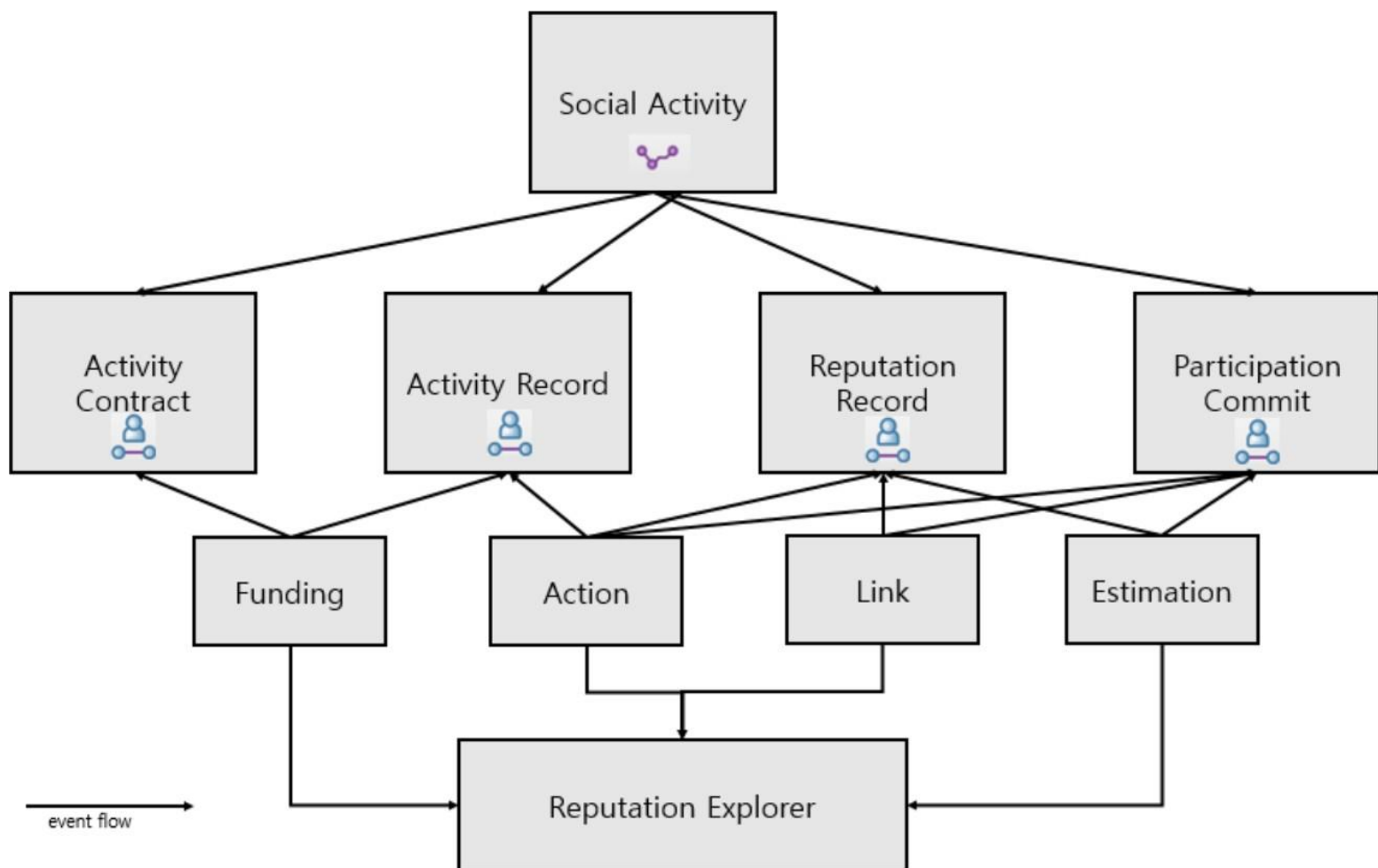
The value tree forms value effectively using the valuable roles of masters and linkers where the DeFi Stoa platform, as a social-type financial platform, is connected to the autonomous credit wallets. This may be understood through the diagram on the flow of social activities of the Stoa DAO. Its social activities are divided into four interfaces: activity contracts, activity records, reputation records, and participation contracts or promises. A participation promise refers to a contract that is subject to change.

Activity records and contracts are executed through funding, and reputation and participation promises consist of activities, links, and evaluations.

The masters of the platform DAO evaluate the autonomous formula of data through the event flow in four steps: funding, activity, link, and evaluation.

Different values are created in the process of intermediation of this flow. Masters are provided compensations to their credit wallets for their contribution to the value formation of the DeFi platform, which increases demand for funding autonomous value enhancement of Stoa Network, and simultaneously creates anticipated demand for value, leading to the broadened DAO portfolio as a DeFi model.

## &lt;Stoa DAO System&gt;



- Credit wallets are value spread formed through collective intelligence.
- Value spread refers to the quality of the transaction mechanism made by credit wallets.
- Our decentralized transaction mechanism provides a signal system for contract swaps, and the tokens stored at this time are converted to STA, the new transaction token for exchange.
- Deposited securities are exchanged through the STA Network. At this time, the collateral that provides the exchange value of securities is put into the smart contract, and purchasing is executed through a certifier or notary in the real world.
- The local collateral capital for purchasing establishes a commission system for the value of investment, and the exchange of value should be conducted through a notary with such a commission system.
- In order to establish a high-frequency and efficient transaction environment for transaction activities such as this, settlements should be made on specified transaction days. In addition, as a forward trading market, the increase in the value of a specific price is following the price model of the derivative market to enhance the direction of the market.

- 
- STA is a collateralized virtual asset for exchanging collateral. Commissioned products may be designated to the price model in order to stabilize the price spread. Providers of such a reliability model shall be granted a premium, and contributors of reliability that is required to build the ecosystem of the market shall be granted a commission, and the two together are facilitators in overcoming the accessibility limits of the global financial ecosystem.
  - In order to link the credit wallet to the local notary platform, smart contract-type notary wallets are created through a notary, and the exchange value of the local fund is managed through an artificial intelligence network enabled by a mutual process. This participation autonomously establishes an information system through collective intelligence, and encourages the systematic elementization and parameterization of technical activity information that is the basis of the information system. This may be regarded as a distributed finance network model that helps run a decentralized social-type financial platform as an autonomous body.

## 9.8 Extension through Digital Bonds and the Assetization of License

Stoa Network strives toward creating a stablecoin token economy and extending the value of a new digital asset ecosystem through the growth of assets.

Additionally, Stoa Network continues to expand and acquire global business licenses by establishing protocols and building a platform for the global securitization network. We have established companies in six countries (India, Australia, Cayman Islands, Estonia, Singapore, and Republic of Korea) during the two years of planning and preparing the Stoa Network project.

Our project has been extending a border-free global DeFi platform and building a distributed finance system suitable for a digital ecosystem.

The flow of the traditional financial system is intermittent, and its systems are developed according to periodical issues. Such characteristics entail limitations in applying the existing system to the financial intermediation model that fits the revolutionary speed of the digital market. For this reason, creating a digitalized financial intermediation environment across all cycles through DeFi protocols is crucial to expanding the business to encompass various FinTech models through the globalization of platform-oriented financial and non-financial intermediation.

The bond financial market is relatively large in size. Most markets are bond-centric, and although these markets function based on reliability, they are link-modeled with the traditional financial system that has formed that level of reliability.

Economies have seen a surge of deglobalization strategies following the financial crisis, and exclusive finance and stagnant market growth post-industrialization have exposed the limits of power behind innovative growth of the market. Digital bonds of Stoa Network play an important part in designing the anchoring strategy and the liquidation value of Stoa Network, where smart city bonds are sometimes a major source of investment.

Social Overhead Capital (SOC) requires a large volume of financial resources, but the means to raise these resources are significantly limited. Digitally building investment bonds is often faced with many legal issues and difficulties in securing license rights and liquidation rights. Unless there is a credit model for importing all situations through electronic signatures, digitalizing the bond models of all global nations is challenging, to say the least.

Notwithstanding these difficulties, successful attempts are being made, and should any of these attempts turn out to be successful, the growth of the relevant markets is expected to be accelerated.

What we hope to pursue is the institution of an L/C network for digitalizing securitized bond models, which can be established based on the cryptocurrency market model.



Included in the list of different products that we are considering in this digitalization of bond models are soon-to-be licensed digital bonds. Previously licensed digital bonds are also the rights of NFT or intangible assets. There may be legal issues associated with integrating the rights or licenses of the existing product market with the digital value ecosystem, but it can be developed into a market-friendly digital bond investment network through systematic signatures as well as digitalized and standardized mechanisms appropriate for the regulatory environment.

The Bit Stoa platform, which is a building block of the bonds and securities intermediation network of Stoa Network, considers carbon credits and CDM as factors of securitized bonds that can be used to liquidate a stablecoin token. Leveraging the Stoa Network protocol in overcoming the limitations of the traditional underlying asset models in order to encourage digital bonds intermediation midst diversified models of global financial intermediation products could help extend the protocol into different DeFi platforms.

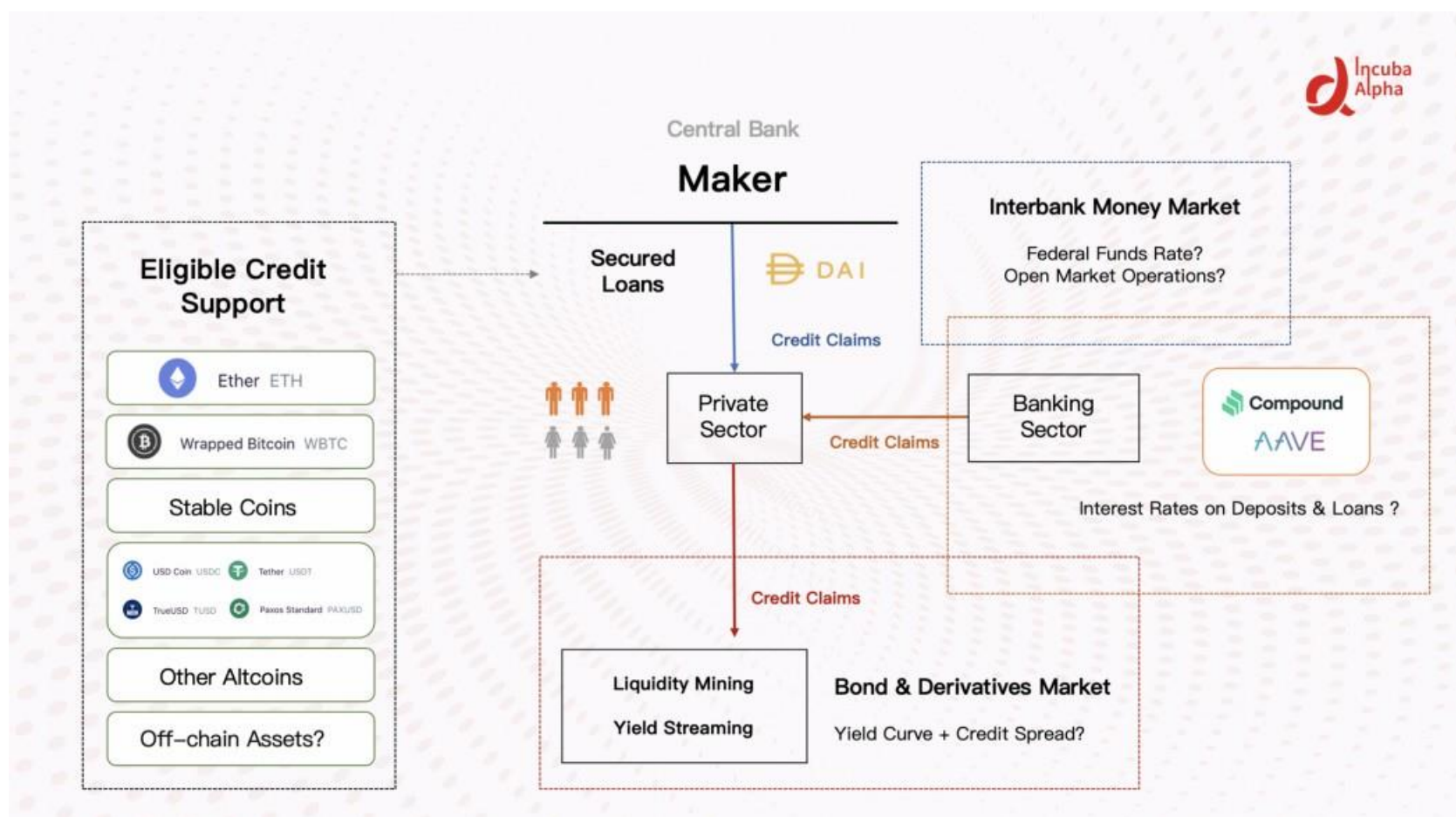
Different businesses of the global securities intermediation model, such as digital repurchase agreements (RPs) made up of smart contracts or RP of social overhead capital (SOC) bonds in smart cities, will be conducted through the Stoa Network. Although Bit Stoa is not a decentralized trading platform, certain functions can be combined with decentralized elements as needed. Equally likely is decentralized participation and governance operation by traditional financial sales operators as securities intermediaries of the DAO of Bit Stoa.

With some coins seeking to expand their credit, there have been attempts to take the lead of the DeFi balance sheet expansion (a new type of credit expansion) and effectively increase financial leverage.

Such pursuits may expand the credit of DeFi, but they are nonetheless economy models designed solely for tokens. There are not enough decentralized ingredients to interwork smart contracts with the existing platforms, which leads to failed attempts at creating fandom with actual service.

Building a decentralized financial market and designing a DeFi bond model through interest models such as Maker DAO, Uniswap, AAVE, and Compound as well as through deposit, loan, and crypto-based credit models despite these hurdles is significantly encouraging in itself as it paves the way for an impressive token economy model.

## &lt;A maker's relationship with the banks&gt;



There is an investment pool created by the existing coin/token projects. Nonetheless, these projects come with innate obstacles because their model for additional fundraising does not contain the elements necessary for a decentralized interest market and because access requires a highly technical access environment or novel innovative ideas.

In addition, most DeFi models are operated as the underlying asset of Ethereum, in other words collateralized interest-type product models that are implemented through smart contracts. Given the fact that investment-type models for corporate (any digital asset-type project or FinTech service) market expansion are dependent on general funds or VCs, they may be nothing more than another form of industrial capital goods coupled with the market value of the traditional finance and securities market.

The crypto fund model needs to be actualized in Stoa Network to overcome this aspect. The actual likelihood of bond and credit interest in the crypto credit market can be heightened and spotlighted through rapid growth and fandom, which is possible only through the voluntary participation of users of realistic capital acceptance models.

We have witnessed the birth of many high potential projects and their impact on expanding credit, and Stoa Network hopes to take a part in the process through tireless efforts.

## 9.9 Strategies for Launching a Stablecoin Token

We have a set of strategies to launch a stablecoin token of Stoa Network, for which we have been gathering feedback from various industry and academic experts. There is a separate DAO model for the strategy of launching a stablecoin token, of which tentative name is the Decentralized Finance Committee (DFC).

This will be an integral protocol in comprehensively taking into consideration the elements necessary for the financial chainization of a variety of platforms and the DeFi financial intermediation model, and for designing and planning a kind of all-cycle FinTech chainization. There is a Stoa pool present for anchoring, but we wish to cover it with greater insight and depth as it is a protocol connected to the inter-platform DAO necessary for governance operation appropriate for our token economy model. We anticipate the meaningful repercussions the Stoa Network governance is expected to bring to the market will lead to a brighter future for DeFi finance.

What we hope to establish through this whitepaper is that the focus of our idea and philosophy is not confined to specific platforms or a one-dimensional DeFi model; our focus is on building an all-cycle system for the financial industry.

We confide in our teams to present better strategies, which will further expand following the release of more DeFi platforms. The additional models and strategies for issuing stablecoin tokens will be launched in consideration of how the Stoa Network platform will expand in the future.

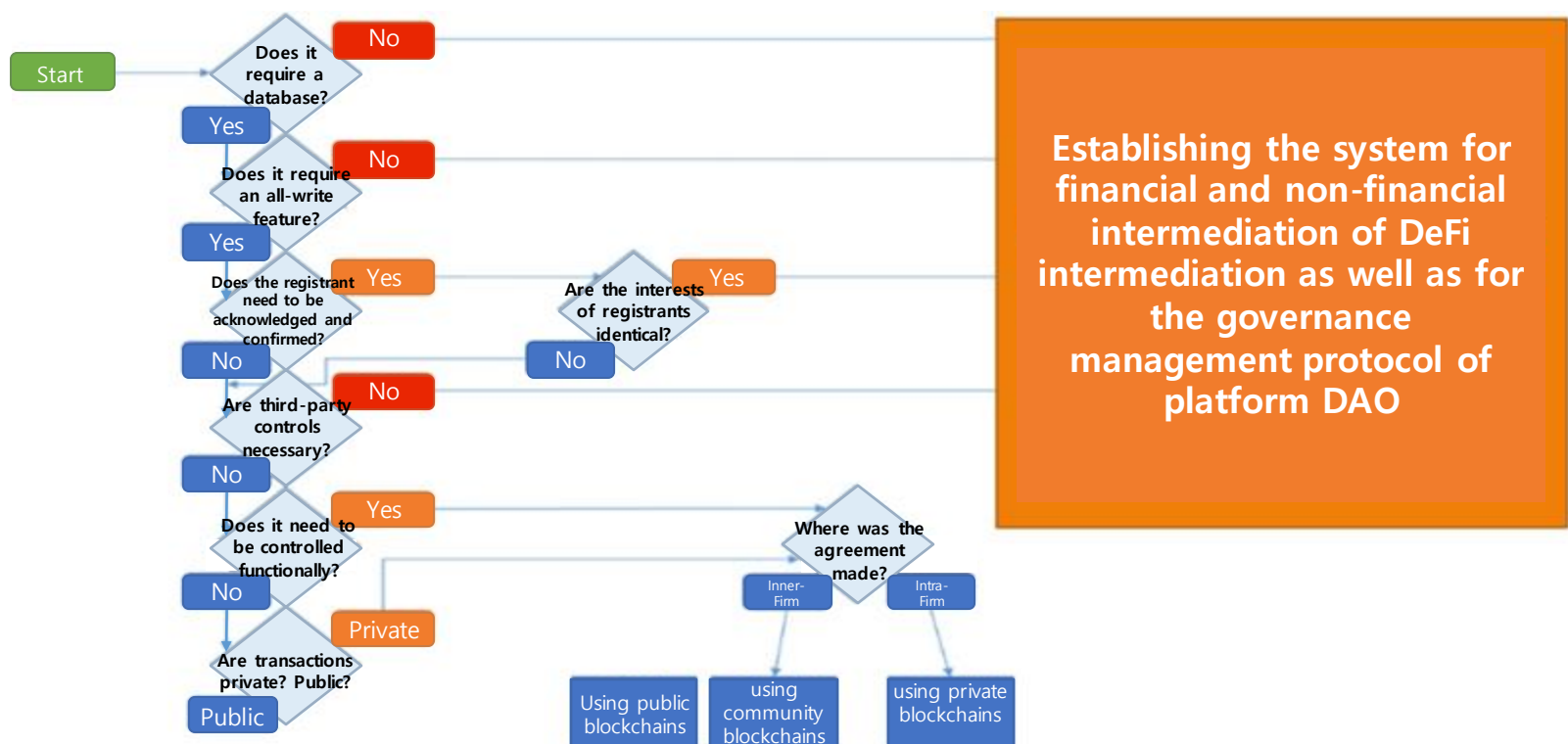
## 10. DAO Model System of Stoa Network and Token Economy

The efficiency of DAO operation comes from maximizing the utility of diversified DeFi markets and establishing an effective market system in order to manage various token economies. To this end, we have devised a four-phase model, which we have titled the DAO Framework Strategy of Stoa Network.

### Phase 1

This phase involves setting up the different elements necessary for protocol modeling required to establish a DAO system of the Stoa platform for the transition into an autonomous system so that we can meet the various needs of the market.

#### <Stoa DAO Model System Phase 1>



## Phase 2

This phase involves concretizing the basis of the decision-making system and activities of the DAO platform for running the DeFi model. In this phase, we verify that the level of understanding of masters, who are involved in the DAO for setting up the reliable processes and system sufficient enough to question and respond to the application of the DeFi model, is adequate.

<Considerations for Stoa DAO Model System Phase 2>

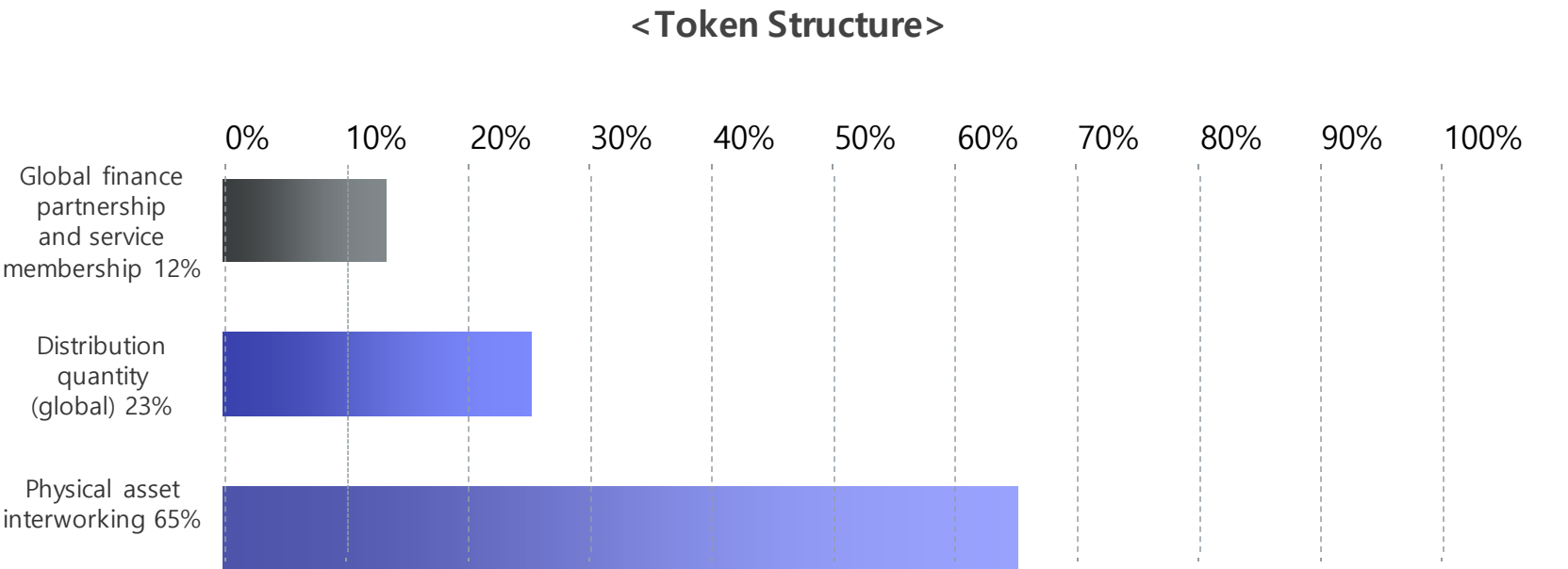
Reliability process	Reliability policies	Reliability Application	Synchronous/a synchronous model	Online / Offline	Possibility of an interworking model	Level of accessibility
Digital accessibility	New model	Improvement from the existing model	Data mining	Restructuring	System improvements	Operation improvements
Confidentiality considerations	Integrity considerations	Availability considerations	Business touchpoints	Network correlation	Interface standardization	Node structure and relationships

## Phase 3

This phase involves confirming that the business-wise effects and checking whether or not the likelihood of implementing DAO as a platform operating system can be expressed, in other words presented as evidence, through highly feasible activities and mathematical or scientific data. Here, we establish specific and feasible goals with DAO activities.

<Considerations for Stoa DAO Model System Phase 3>

Level of technology	Technology accessibility	Data type	Scale of data utilization	Traffic level	Reliability flow	Technology touchpoints and locations
Defining requirements	Defining required technologies	Defining required p roofs	Defining required configurations	Network relationships	Volume of human resource	Volume of physical resource
Interface methodology (API)	Level of standardization	Class and sets	Compensation type / Non-compensation type	Specifying usability	Specifying function	Level and size of implementation



**Phase 4**

This phase involves confirming and verifying the predictability of managing risks associated with DAO activities.

Here, we verify that the system presents legitimacy and stasis, which are algorithmic factors of autonomous management, built reliably through the various coherent activities executed on the DAO platform required for DeFi. First, we confirm the existence of an interface relationship for interoperability in connection with the flow of the DeFi business. Next, we determine whether the transparency of the information that is used to prove the interface relationship is well-maintained. Finally, we verify the reliability of the compensation system, which is contingent on the quality of activities.

**<Considerations for Stoa DAO Model System Phase 4>**

User tools (GUI)	Command-line (CLI) tools	Confidentiality (authentication/identification)	Block access	Block damage	Block audit	Node level
Protocol and manuals	Block format	Block creation	Block record	Block status	Block report	Node status
Interface methodology (API)	Interface structure	Transaction format	Transaction creation	Transaction record	Transaction status	Node report



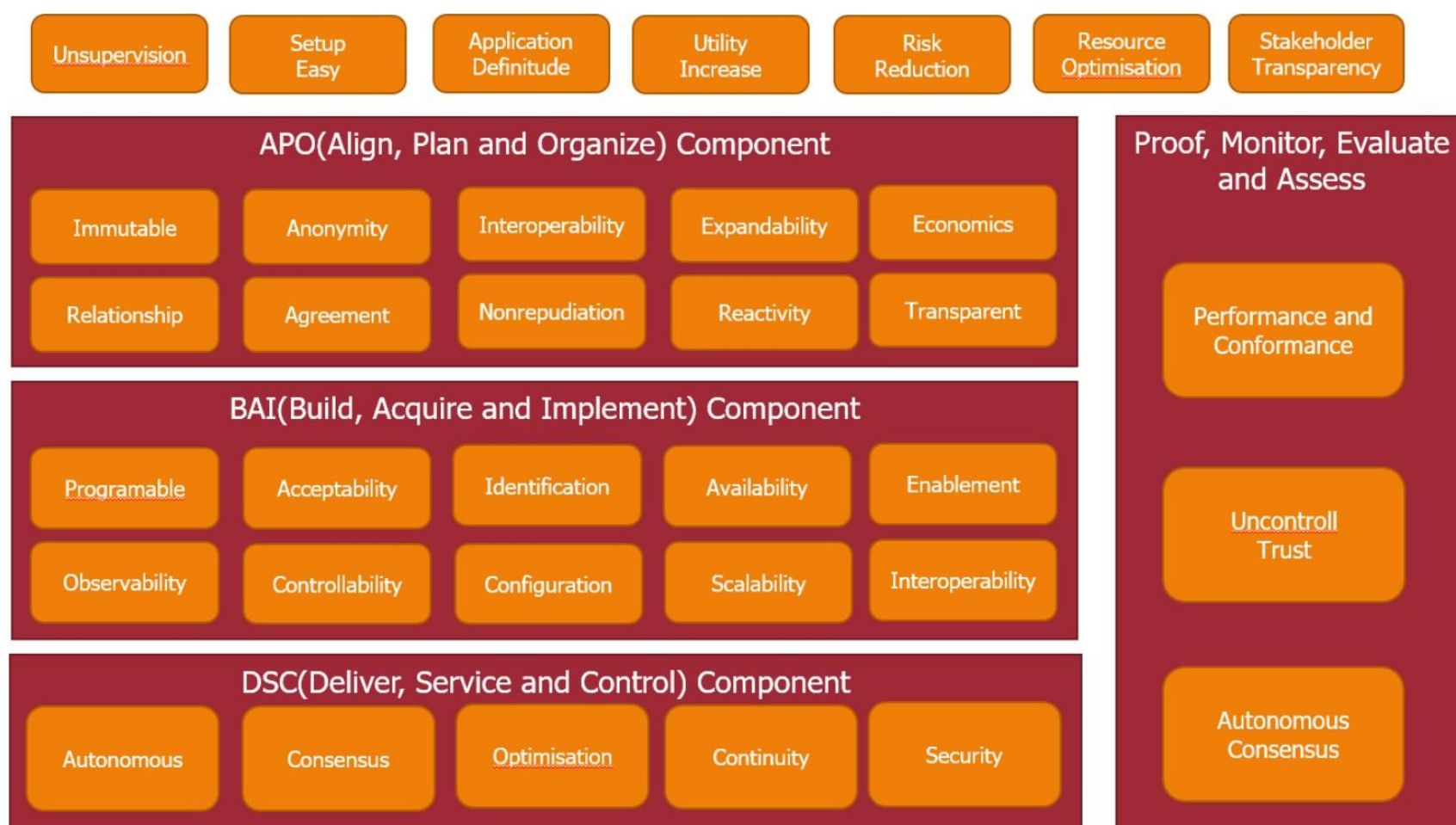
It is through these four phases that we seek to overcome the drawbacks of the existing DeFi models, including the one-dimensional staking of smart contracts, rebuilding of holder voting and protocols, and contract-type deposits and loans, by the way of spreading to non-financial intermediation market using the platform as a backend DeFi platform.

The system for this framework stage was established through years of research on related papers, technical data, and ISO standard models. We believe that this system provides the stability necessary for extending the effective mechanism of DAO operation to a protocol economy, as the interworking among traditional economic systems is insufficient and localized.

However, despite accessing a wide range of collective intelligence and power in the social network environment, we were unable to leverage them in digital environments because the means were collapsed in a simple crypto economy.

With Stoa Network, we took into consideration the expansion of the platform of the DAO model as a non-financial intermediation market. Through a token economy, a stablecoin strategy paired with a crypto underlying asset, and the creation of different participation pools to overcome the limits of swaps and the crypto securitization system, Stoa Network was able to become a DAO framework and a token ecosystem as part of Distributed Finance 2.0.

### <Framework Structure of Stoa DAO Governance>



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Establishing such a system is often met with a fair share of limitations, insufficiencies, and excessiveness. However, we wish to present simultaneously a creative and innovative model through feasible service and platform, as well as institute and implement a synchronous business strategy. Through this, we shall build a feasible and versatile token ecosystem that is close to the real world, in the process of evolving as a framework for the value ecosystem by expanding our presence in distributed finance that is grounded on reality, rather than in decentralized finance that lacks reality.

## 11. Determining Compensation Structure for Token Economy

The compensations that are offered to contributors for their activities in Care Stoa, DeFi Stoa, and Fund Stoa are designed with various mechanisms, and range from simple compensations to compensations that vary according to the extent of contribution.

For example, let's suppose that you purchased a Care Stoa DeFi insurance plan worth roughly \$3,000 under the condition that you pay a lump sum up front. So you paid \$3,000 up front with a no-resale condition for a 5-year scale-up product, and then your digital asset was stolen from a certain exchange 6 months later.

We would collect details of the theft in order to determine the level of compensation for your lack of capital caused by the theft.

The following evaluation model is used in determining the level of compensation.

The first step is identifying the route of the theft and the status of the stolen asset at the time of theft.

The second step is determining if the loss is permanent. At this time, we would also consider if the asset is a type of asset with a higher likelihood of theft.

We would gather different views on the risk of digital asset theft from digital experts who have a comprehensive understanding of the characteristics of blockchain and the weaknesses of digital methods, such as information knowledge on digital threats or systematic threats to security.

This is because we recognize that different groups of people may have different views on a particular subject.

Contributing to maintaining a sufficient rate of payment could also be grounds for compensation in insurance.

A low-quality evaluation would lead to a low-quality compensation. They are the masters who are evaluators of the loss ratio of Care Stoa.

Their quality of evaluation is also evaluated by the system or by other masters.

Of course, there may be aspects of evaluation that might remain undisclosed for sensitivity purposes. However, we believe that quality-dependent compensations will lead to higher quality evaluations and eventually to high-autonomy insurance DAO with compensations that are determined with qualitative criteria.

Currently, there are exchanges that provide insurance services to protect users against hacks or other weaknesses of smart contracts. However, their operating system models will not evolve as part of the decentralized finance unless they are able to set up a capital acceptance system that can operate a non-intentional, autonomous evaluation model and a token economy through an evaluative DAO model.

The decentralized insurance service model of Care Stoa can accommodate elements previously unaccommodated by traditional insurance models. The Care Stoa model hopes to create a digital-centric insurance model and culture, virtuously circulated by the Care Stoa masters, who are actuarial experts on digital insurance, as well as a token economy means that offers various perspectives on overcoming weaknesses of digital. There might be cases where it is difficult to determine the level of compensation a trader should receive based on the level of reliability of the logic created by the trader. It may be hard to estimate the amount of profit that the trader would expect from the wallet registered in the fund, whose logic the trader took part in creating.

The decision for determining the price of the profit for the market may be left to the trader, or made through voluntary donation or the evaluation criteria of the logic of the system itself. The problem is that copying the same logic to all products may give rise to a new risk associated with activities of different risk assets that are analyzed based on the flow of the market. In such a case, it may be necessary to make the order unrecognizable as an activity of the asset operated in DeFi Stoa.

The reason for stipulating the aspects of activities is to promote the participation of the trader in the evaluation model and the level of compensation in order to minimize the impact of market activities on asset growing activities, as well as to ensure continued activities at appropriate levels. We anticipate these attempts to create a virtuous cycle made up of high-quality trading logics and asset-growing activities.

The values that make up a trading logic include the time invested to create the logic, the accumulated know-how as well as the level of personal experience and knowledge of the trader who has the ability to create the logic, the reliability that is expected to be gained from running the logic, and the level of market for the product that contains the logic.

The level of compensation should be determined in accordance with the protocol economy model, taking into consideration multiple evaluative factors, including the size of the participating fund of this valuable logic, the usage time, the likelihood of the logic being traded and operated successfully in the real market, and the level of profit. In addition, it must be recognized that compensations obtained as actual value transfer, rather than as simple intermediation or utilization fees, are the key to enhancing the quality of a trader's logic participation. This is because the participation may be more than just a means of compensation from decentralized activities but probably a tool for self-realization. What we hope to establish is an ecosystem with a virtuous cycle of value creation for global participants in our platform who add value to the platform as its actual laborers.

The value of a logic that is now worth \$10,000 may have been \$1,000 initially. This change in value that comes from the enhanced quality of operations run by the logic translates to sustainable benefit from value creation. Such a change is a contribution to the DAO model as well as a new financial window, which will lead to a more solid token economy model. Our project takes into consideration the integration of collective intelligence and elements of decentralized participation with economic activity contribution and the need for self-realization. From the point of view of Maslow's 5-level hierarchy of needs, the progressive realization of needs and satisfaction is expected to lead to sustainable contribution to the value of Stoa Network.

## 12. Token Structure

- Linking tangible assets (SWAP) and managing virtual assets: indexed value assets, such as bonds/funds/forward and futures/spots
- Shares in global financial partnerships and memberships: shares for deposits or partnerships for coin-to-coin exchanges available in the DeFi exchange
- Distribution volume (global distribution) : liquidity volume for building the initial market and circulating trading to trade market's coins through a partial-lock policy
- The initial volume issued was 5.2 billion, 2 billion of which were burned during the listing process.
- ERC20 contract address : 0x06874F973Dc3c96dc22A10eF0D0609F877f335EA

## 13. Business Roadmap

- Sep 2020 Incorporation in Estonia (CEO: Roy)
- Oct 2020 Private sales of STA coin
- Nov 2020 Pre-sales of STA coin
- Feb 2021 DeFi staking interwork in Bit Stoa & IM-Exchange
- Feb 2021 Incorporation in Australia (CEO: Aron)
- Mar 2021 Incorporation in Singapore (CEO: Roy)
- 2021.05 Incorporation in India (CEO : Sunil)
- May 2021 Listed in Bithumb Global
- Jun 2021 BKEx listing and IEO
- Jul 2021 LBank listing
- Aug 2021 BitMart listing
- Sep 2021 WiseBitcoin listing
- Dec 2021 Hoo, MEXC listing
- Jan 2022 Incorporation in Cayman Islands (CEO: Roy)
- Feb 2022 Stoa pool opened
- Apr 2022 STA wallet service launched
- May 2022 Care Stoa launch (expected)
- Aug 2022 Fund Stoa launch (expected)
- Sep 2023 Bet Stoa launch (expected)
- Oct 2022 DeFi Stoa launch (expected)
- Nov 2022. A securities corporation to be incorporated in Cayman Islands (expected)
- Dec 2022 Bit Stoa/NFT Stoa launch (expected)
- Apr 2023 Pay Stoa launch (expected, refrain from mentioning for now)



## 14. Legal Notice

This whitepaper intends to provide an overview, roadmap, and details of the STA coin and its project, and does not intend to encourage investment, contract, or purchase of stocks, shares, securities, loans, rentals, and the like.

Due to frequent changes in relevant policies, regulations, laws, technology, economy, and any other factors, the information provided herein may not be accurate, reliable, or final, and is subject to constant revision.

This whitepaper contains information related to future business and financial performance, potential aspects subject to development that are considered forward-looking information, which may be distinguished with words such as 'predict', 'expect', 'foresee', 'intend', 'plan', 'judge', 'seek', 'forecast', and 'purpose'.

As such, this whitepaper is provided for reference only, and its content on policies and technology is subject to continuous updates, including corrections and revisions.

We take no responsibility for the accuracy and legitimacy of the information provided herein, and we hereby clearly state that purchases should not be made based solely on the information provided in this whitepaper.

This whitepaper recommends that buyers conduct analysis and research prior to making an investment.

Therefore, we take no responsibility for any loss or compensation related to investment.

The act of participating in issuing the STA coin does not encompass future profits or losses.

## 15. Anti-Money Laundering (AML)

Stoa Network has in place an internal anti-money laundering monitoring system in order to create a transparent trading environment.

Accounts with transactions of an unclear source of funds or with reasons to suspect money laundering, as well as their related accounts, may be suspended from putting in buy or sell orders.

Threats to the DeFi platform are monitored and responded to in real-time by customer type, cash transaction, and distributed transactions.

## 16. Know Your Customer Policy

We have implemented a data-based risk management system in order to identify in advance the individuals and companies being monitored as potential subjects of financial crimes or extortion.

When an unspecified individual makes an account on an STA coin site, the information of that individual is verified thoroughly according to Customer Due Diligence (CDD). Generally, CDD is conducted based on the name and the resident registration number of the individual. However, in the case of a higher risk of money laundering, the address and contact details of the actual owner are verified additionally. Furthermore, in the case of high-risk customers, the purpose of financial trading and the source of funds for transactions are verified following a strict protocol. The account registration process of a member who is found to be involved in a crime or terrorism will be stopped immediately for security reasons.

## 17. Combating the Financing of Terrorism (CFT)

Buyers must agree that they will not use the STA coin to take part in financing terrorism through funding, exchanging, or supporting activities. Buyers must acknowledge that they cannot sell, exchange, or liquidate the STA coin for the purpose of financing terrorism.

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1. We use the general term digital asset rather than cryptocurrency, virtual currency, or cryptoasset. Terms may have distinct legal meanings in certain jurisdictions.

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We use the term credit for borrowing and lending relationships broadly, rather than in the technical sense of money creation. In contrast to CeFi bank loans, where the borrowing process is separate from the pooling of capital to fund it, DeFi services can provide both sides simultaneously, often targeting the same users.