

# Amara Finance White Paper (v0.9)

May 2021

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# 1 Introduction

## 1.1 Development of blockchain technology

The concept of "decentralization" arising from blockchain technology is being used in increasingly more use cases and shows significant value. Bitcoin brings "decentralized currency" to the world of blockchains, furthermore, Ethereum system showcases "smart contract", proving the importance of decentralization for distributed applications from the application perspective. As a next-generation high-performance blockchain network protocol, Polkadot connects multiple exclusive blockchain networks to a unified one with heterogeneous multi-chain network, and its excellent performance will bring greater value space and growth potential to the digital world.

Polkadot is built upon the Substrate framework and has significant advantages over Ethereum. While sharing its security, cross-chain interoperability, and forkless upgrades on the chain, Polkadot with more chains and more specialization means more possibilities for innovation.

## 1.2 Development and rising demand for DeFi

The year of 2020 has seen DeFi grow from niche to the most shining star in the cryptocurrency ecosystem, guiding blockchain into ecological spring. DeFi (Decentralized Finance) owns obvious advantages and potential application prospects compared with traditional finance. At this stage and in the foreseeable future, DeFi has four opportunities:

- Improve and upgrade the existing financial services in a distributed way. For instance, the request for asset collateral lending, collateral liquidation and settlement, financial system security, and strict risk control, etc, which still exist rather than subverted in DeFi.
- Become a distributed fundamental support in the emerging financial field.
- Improve settlement efficiency, reconstruct governance trust, and coordinate multi-agent collaboration on the blockchain network.
- Solve the existed issues of DeFi, on which the projects are distributed in dots and lack connection, and achieve the interconnection among multiple DeFi projects.

# 2 About Amara

## 2.1 Introduction of Amara

Amara: Polkadot-based multi-chain asset lending platform. Amara seamlessly connects popular cryptocurrency in the market via low-friction value transmission. Capture high-

quality long tail assets, release the liquidity of long tail assets, extend DeFi to new border

## 2.2 Features of Amara

- Supports long-tail asset loan as well as mainstream assets.
- Fast and low-cost cross chain transactions.
- Interest rate model. Interest rate bomb function is introduced to avoid risk under extreme market fluctuation.
- NFT. Top NFT can be mortgaged.
- Risk management. Mainstream assets are separated with long-tail assets, total loan limits, Staking insurance, insurance deposits are set to insure financial safety.
- Acceleration pool. Encourage users to hold by share profit and accelerate mining.

## 2.3 Amara vision

In the early stage, Amara will mainly support the popular assets on Acala and Polkadot. Based on Acala Network, Amara lending protocol supports assets including Staking liquidity release assets LDOT, LKSM, multi-collateralized stablecoin backed by cross-chain assets (aUSD), etc. In addition, Amara will also support cross-chain assets such as BTC, ETH, DAI, USDT and USDC through cross-chain bridges, which is the main destination of Amara in its first stage.

After completing the first phase, Amara will become the top lending protocol of Polkadot. In the next stage, on the one hand, the long-tail quality assets will be included in Amara lending protocol, so as to fully release the liquidity of long tail assets. On the other hand, Amara will seek the appropriate path to achieve transformation from the lending protocol to Amara Finance, and develop various financial services such as unsecured loan (flash loans, third-party credit loan, etc.), cross-chain lending business, variable flexible interest rate, NFT, forecast market, etc., so as to build itself into an ecological DeFi financial platform of Polkadot.

## 3 Amara products

### 3.1 Mainstream assets loan service

This sector will mainly focus on mainstream cryptocurrencies, including Acala network & Polkadot and other sustainable currencies. By setting up inner communication bridges,

Amara will provide seamless communication between itself and other sustainable currencies with low transfer fee, e.g. BTC, ETH .

After mortgaging assets, users can take out any type of cryptocurrency from the public liquidity pool.

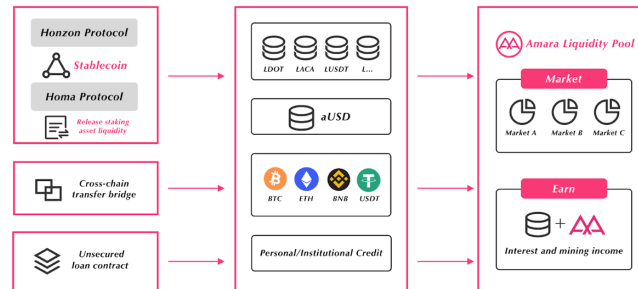


Figure 1: Mainstream assets loan service

### 3.2 Long tail assets loan service

#### 3.2.1 Long tail assets loan procedure

To avoid systemic risk, long tail assets loan is deliberately separated from mainstream, which is the special design from Amara protocol.

There are 2 forms of loan. One is by mortgaging mainstream tokens, IE BTC, ETH, users can take out a loan on any long tail asset, which is carefully evaluated by Amara protocol. The other is by mortgaging any long tail asset, users can take out a loan on any long tail asset also.

Similar to Kusama, the most innovative financial experiments will be tested in this sector, IE high-end NFT assets mortgaging, collateral-free loans. When experiments proven sustainable, will be transferred to mainstream loan sector after passed community voting via proposal.

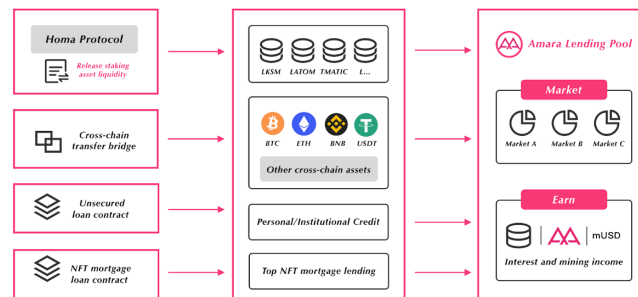


Figure 2: Long tail assets loan procedure

### 3.2.2 Influence factors of Long tail assets loan

Comparing to mainstream assets loan, long tail assets loan is more fractured and frequently transferred, thus lies more uncertainty and opportunity. For the best interest of our community and users, Amara protocol designed detailed model to avoid warehouse to wear.

- Comprehensive evaluation module. There is big growth potential for some top rate long tail assets. Amara will evaluate those assets according to a 3 dimensional module, 3 factors taking into evaluation are decentralization, community activity, scalability.
- Stable loan interest rate module. Nowadays most of the loan interest rate modules are based on liquidity utilization rate, but long end assets loan is more vibrant, so a compatible and stable loan interest rate module needs to be specifically designed. Taking into consideration of its fluctuation and based on the existing liquidity utilization rate module, Amara introduces other module function factors to enhance financial stability and seamless communication between transactions.
- systematical financial risk. Although more opportunities and growth space lie in long end assets, it also comes with more risks. So Amara separates long end assets loan service with mainstream assets loan service. Beside the original anti-risk deposit, Amara allocate part of the profit into reserve to withstand risk and aiming towards sustainable, self-adapting financial system.

### 3.2.3 Evaluation model of long tail assets

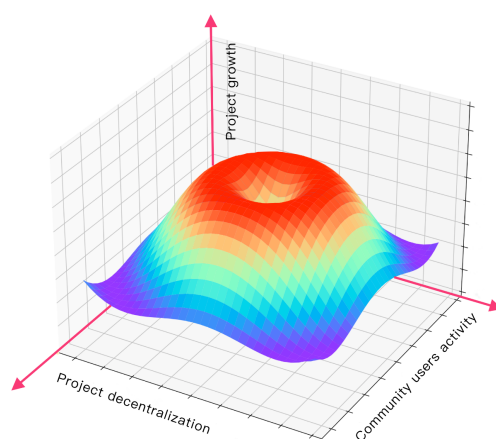


Figure 3: Evaluation model of long tail assets

Long tail assets evaluation is challenging work, there are many factors taken into consideration. Amara protocol combines three dimensional evaluation model and diverse loan

interest rate model, then evaluates all long tail assets. Only after evaluated more than C+ can a long tail asset activated in the loan market.

## **1. Risk management**

### 1) Smart contract risk

Smart contract risk management evaluates underlying code of every token. Generally auditing report of renowned audit institution.

A: Audit report.

B: Smart contract, underlying code release time and transactions frequency, for these 2 factors indicate implementability.

C: Private key management and whether a timelock exists.

With evaluation value D or lower, the evaluated long tail token can not be mortgaged and activated on the platform.

### 2) Token model risk management

A: Whether the token has detailed distribution model?

B: Rationality of initial circulation and follow-up release arrangement.

C: Practical purpose and internal logic of token.

D: Volume of token holders and distribution centralization.

.

### 3) Token transactions risk management

Market risk is related to market volume and demand fluctuation. Mortgaged value declination can trigger clearing mechanism. When market mobility is insufficient, massive undersell can cause warehouse explosion.

A: Token value fluctuation. Token value within the latest month will be calculated, higher fluctuation indicates higher risk.

B: Token total market value. Take CoinGecko and CoinMarketCap for example, with total market value 20 to 100 million dollars are considered medium project, if lower than 10 million dollars are considered high risk.

C: Token mobility. Listed on renowned exchange, listed as futures will be considered lower risk and vice versa.

## **2. Community activity**

### 1) Community governance

A: How is the community governed. When the approach is not decentralized enough, then it can be easily manipulated.



B: Whether the governance procedure is rational.

.

2) Community participants activity

A: International community (Twitter, Telegram, Facebook, Medium, Discord)

B: Volume of community and its followers.

C: Community vitality.

.

3) Project update

A: Project weekly report.

B: AMM community communication.

C: Partners.

### 3. Scalability

1) Project orientation

A: General consensus reached among the public that the project is building useful protocol or products.

B: Development and market potential. Generally public chains are considered more scalable than applications.

C: performance index, development and kit, DAPP ecosystem and application of the public chain which the project belongs to.

2) Project status

A: Whether project is alive.

B: Major breakthroughs or events.

C: Project operation, promotion, etc.

3) Degree of completion

A: Focused Roadmap and executed as planned.

B: whether the project is at the start line or has established products.

### 4. Levels of risk evaluation

After evaluated by three dimensional model (risk, scalability, activity), long tail assets will be categorized into several levels.

Table 1: Levels of risk evaluation

Grade	Interpretation
A+	Tested by the market, proven the most stable, scalable and with lowest risk.
A	Excellent stability, scalability and lower risk.
A-	Past the initial test by the market, considered stable, scalable and low risk.
B+	With potential and mature products, but easily fluctuated.
B	Has potential, but products is primal.
B-	Only has primal scheme and incomplete.
C+	No scheme and no application case.
C	Low transparency and no scheme, considered high risk.
C-	Project is highly unlikely to realize, no scheme and no communication tunnel. Considered extremely high risk.
D	Failed project, considered fraud.

Table 2: Example of Partial Encryption Currency Score

	Smart contract risk	Token economic risk	Token trade risk	Governance	Community vitality	Project update	Project status	Project orientation	Completion Total	value
DAI	B	C	C+	B+	C	C	B	B	B	B
DOT	A	B	B+	B+	A	B	B-	A	B	A
ACA	B	B+	B	C+	B+	B	C+	B+	B	B+
ETH	A+	A	A+	A+	A+	B	A	A	A	A+
WBTC	A	C+	B+	C	C+	C-	B-	B	B-	B
UNI	B+	B-	B	B-	B+	B	A+	A+	A+	A
YFI	B+	B	B	A	B	B	A-	A	A	B+
LRC	B	B-	C+	B-	C-	B	B-	B+	B+	C+

E.G.

Every long tail asset will be evaluated, only with a total value C or above can it be used as mortgage.

## 5. Diverse loan interest rate model

Comparing to mainstream assets, there is a more strictly standard for long tail assets.

- Excess pledge for every long tail asset mortgaged loan.
- Higher liquidity utilization rate.
- Higher reserve funds within 10%-20%.
- Risk warning for bankruptcy.
- Separated single token loan system. One long tail asset mortgaged can only take out a loan on one cryptocurrency only.

By diverse loan interest rate model, Amara protocol lower the risk of long tail assets loan, maximumly maintain market stability and ensure financial safety.

### 3.3 Yield Farming

Defi yield farming allows individuals to earn tokens in exchange for their participation in Defi applications, it also can guild towards more balanced token supply-demand market, and reflect authenticate value.

3 ways to participate Amara yield farming

- Staking. By deposit MARA and Polkadot network tokens (DOT, KSM, ACA ), anyone can participate in Amara farming.
- Loan. One can participate when become a part of the loan procedure (lending or borrowing), at the initial phase of Amara protocol, token distribution will be adjusted to ensure fairness.
- Liquidity provider. When provide liquidity for MARA/DOT, MARA/KSM, MARA/ACA, MARA/USDT transactions, one can get transactions fee and participate Amara farming.

### 3.4 Financial derivatives of DeFi

After the first phase of Amara protocol was proven stable and sustainable, more utilization forms will be introduced to expand application scenario.

Include but not limited:

- Simplified share option based on ACA/DOT value.
- Leveraged loan financial products.
- Stable tokens associated with USDT to be instant exchange with other tokens.

### 3.5 Relating NFT

Along with the development of Polkadot network, NFT will attract more users to attend.

#### 3.5.1 Top rate NFT mortgaged loan

Amara will accept certain top-rated NFT as mortgage and grant loan accordingly. It will benefit NFT circulation.

#### 3.5.2 Amara NFT distribution

Amara will distribute its own NFT products, along with the products are rights and interests, e.g. elevate mining efficacy, discount on transaction fee, token airdrop, and so on.

## 4 Amara assets model

### 4.1 Loan business model

There are 4 roles included in the mortgage-loan process: lenders, borrowers, liquidity pool, clearing party

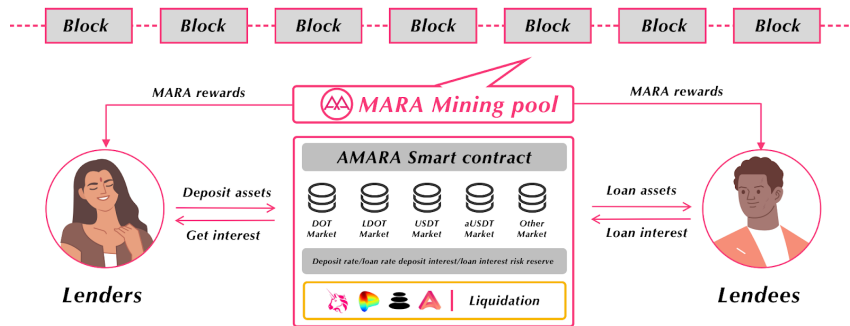


Figure 4: Loan business model

- Lenders deposit digital currencies into liquidity pool, gain interest and MARA token as reward.
- Borrowers submit digital assets as mortgage in order to loan a certain amount of other digital assets. An interest rate will be calculated per interest cycle and paid by borrowers.
- Liquidity pool is the bridge between lenders and borrowers, it represent lend-borrow contract of digital assets between the two participants. Assets deposited by lenders, mortgage provided by borrowers are preserved here.
- Clearing party will clear contracts and get profit.
- All assets deposited through Amara smart contract will be divided into different money markets, corresponding to each underlying architecture of liquidity pool, e.g. DOT market, KSM market. Current deposit and loan rate will be calculated by Acala network blocks.

### 4.2 Assets categories and mortgage rate

Amara V1 is the 1st phase of Amara protocol, supports assets from Polkadot network. Lenders can deposit assets into Amara liquidity pool, and get deposit interest rate and MARA token mining profit in return.

Amara proposes overcollateralization loan, borrowers can deposit any accepted assets as mortgage, and take out a loan on BTC, ETH, DOT, ACA and so on. While borrowers pay for the loan interest, they can also get MARA token mining profit.

As the development of Amara protocol, more and more forms of assets will be supported.

#### 4.2.1 Categories of assets

- Stable coins. E.G. USDT, BUSD, USDC, DAI and Acala stable coin AUSD and so on.
- Acala Staking liquidity tokens including LDOT and LKSM.
- Mainstream cryptocurrencies. IE BTC, ETH, BNB and so on.
- Second echelon cryptocurrencies. IE LTC, XPR, DOT, FIL, BCH, ADA, LINK.
- First-rate long end cryptocurrencies. IE ATOM, Matic, AR, Near and so on.

#### 4.2.2 Mortgage-loan exchange rate (Mrate)

$$\text{Mrate} = \frac{\text{Borrow} + \text{Interest}}{\text{Mortgage}}$$

- Borrow equals to loan principal.
- Interest equals to summation of interest.
- Mortgage equals to market value of assets mortgaged.

Every digital asset has different Mrate. The ones with more stability and higher quality have higher Mrate, and vice versa.

E.G.

Table 3: Liquidation Threshold for Different Assets

<b>Liquidation Threshold for Different Assets ( Updated on May 6th)</b>	
Assets	Collateral Factor
USDT	90.00%
aUSD	90.00%
BTC	80.00%
ETH	80.00%
DOT	50.00%
KSM	30.00%
ACA	20.00%
.....	.....

When market value fluctuated drastically and caused exceeding maximum Mrate, network will automatically trigger clearing process.

E.G.

User  $X$  deposited 100 USDT and LTC worth 100 USDT, USDT Mrate is 90%, LTC Mrate is 70%, then the total mortgaged value of user  $X(Q)$  is calculated:

$$Q = 100USDT \times 90\% + 100USDT \times 70\% = 160USDT$$

In addition, Mrates associated with different digital assets are not fixed forever, at initial phase Amara protocol will adjust Mrates accordingly to ensure financial safety for users. Later when proven sustainable and safe, Mrates will be governed by community by voting.

### 4.2.3 Safety threshold value (Sa)

When user  $X$  deposited 100 USDT, Mrate is 90%, does not mean user  $X$  can take out a loan valued 90 USDT. To remind participants of risk, and avoid punishment by the market for lack of responsibility and awareness of risk, Amara sets up a notion of safety threshold value.

Currently Sa is set at 85%, when user  $X$  takes out a loan with value lower than Sa, its considered safe, clearing mechanism will not be triggered.

Under safety mode, user  $X$  can take out a loan up to 85% of its mortgaged value. IE user  $X$  deposited 100 USDT, Mrate is 90%, mortgaged value is  $100 USDT \times 90\% = 90 USDT$ . Maximum safety loan is set at  $90 USDT \times 85\% = 76.5 USDT$ .

Under professional mode, user can change Sa value manually. The maximum value is 95%.

E.G.

User  $X$  deposited 100 USD, Mrate is 90%, mortgaged value is  $100 USDT \times 90\% = 90 USDT$ . Maximum professional loan can be set between  $90 USDT \times 85\% = 76.5 USDT$  to  $90 USDT \times 95\% = 85.5 USDT$ .

## 4.3 Loan interest rate model

Loan interest rate model is the core of Amara protocol. Mainly includes utilization rate, deposit interest rate and loan interest rate.

### 4.3.1 Liquidity pool utilization rate (R)

Amara smart contract adjusts loan interest rate according to liquidity pool utilization rate, each cryptocurrency has different interest rate.

$$R = \frac{\text{totalBorrows}}{\text{totalLends} + \text{totalBorrows} - \text{totalReserves}}$$

- TotalLends equals to the total value of the assets deposited in the Amara liquidity pool not yet lent.
- TotalBorrows equals to the total value of all the assets borrowed.
- TotalReserves equals to the total reservation. (5% of all deposits will be reserved, The long tail asset reserve ratio will be higher. )

### 4.3.2 Loan interest rate

Annual loan interest is calculated as follow

$$I_B = 0.64 \times R^2 + 1.3 \times R^4 + 0.06$$

The mathematical relation is shown in the following chart:

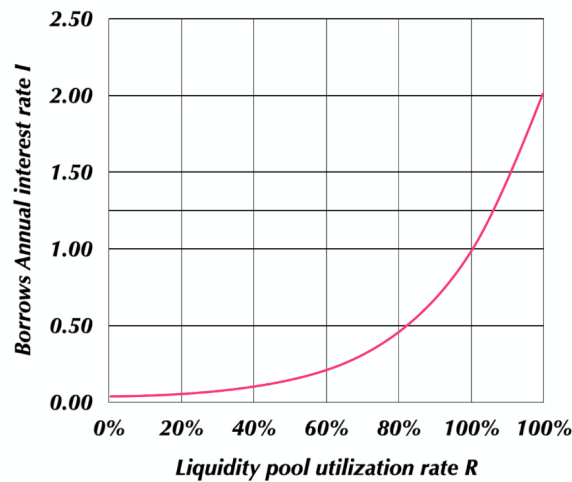


Figure 5: The mathematical relation is shown in the following chart

The asset value will rise as the market demand grows, and vice versa. This model will reach dynamic equilibrium for loan interest rate, and reveal market demand.

E.G.

User X takes out a loan at 12am. At this time the total MARA tokens remained in liquidity pool is 200,000, totalLends =200,000.

All the MARA tokens has been loaned at this point is 600,000, totalBorrowed =600,000.

5% of all deposits was reserved, totalReserves=800,000\*5

Liquidity utilization rate is calculated:

$$R = \frac{\text{totalBorrows}}{\text{totalLends} + \text{totalBorrows} - \text{totalReserves}} = \frac{60}{20 + 60 - 4} = 78.9\%$$

Annul loan interest is calculated:

$$I = 0.64 \times R^2 + 1.3 \times R^4 + 0.06 = 96.2\%$$

Note: because of its instability, this model is unsuitable for long tail assets. Amara has another model custom made for long tail assets through its own evaluation model.

### 4.3.3 Interest rate bomb

Under extreme circumstances, to prevent excessive breach of contract and protect financial loss for depositors, Amara introduced interest rate bomb function to create a safety net and intervene.

Interest rate bomb is adjusted according to liquidity utilization rate R. Normally R rate is 70%-80%. Under extreme circumstances, R value will rise drastically and trigger interest rate bomb into action.

E.G.

- At some point R reached 95%, interest rate bomb is triggered. Loan interest rate will double every 8 hours.
- When R value is less than 5%, loan interest rate will halved every 8 hours.

### 4.3.4 Deposit interest rate( $I_L$ )

By depositing digital assets into liquidity pool, users gain interest in return. Deposit interest rate is decided by loan interest rate per cycle, which means when liquidity pool has higher utilization rate, depositor will gain higher interest. Unlike traditional C2C model, Amara shares 95% of the interest between users. For the depositors, interest rate will not be calculated upon transactions completed, but through math function in relation to liquidity utilization rate:

$$I_L = \frac{I_{Total\ B}}{totalLend} \times 6 \times 365 \times Lendratio$$

- ItotalB equals to summation of all loan interests in 4 hours interest calculation cycle
- Totallend equals to all assets deposited in liquidity pool.
- Lendratio represents minus platform maintenance fee, the percentage of which depositors gain.

E.G.

User X deposited 1000 MARA tokens into liquidity pool, which currently has 1,000,000 tokens in total. Totallend=1,000,000. In one interest calculating cycle, the summation



of all interests is 100 MARA token,  $IT_{\text{TotalB}}=100$ . Presumably platform maintenance fee is 5%.  $L_{\text{ratio}}=100\%-5\%=95\%$ .

The annual interest rate for all depositor is calculated as such:

$$I_L = \frac{IT_{\text{TotalB}}}{\text{totalLend}} \times 6 \times 365 \times L_{\text{ratio}} = 20.77\%$$

The interest rate in every 4 hour interest cycle is:

$$I_{\text{David}} = \frac{20.77\%}{365 \times 6} \times 1,000 = 0.0948$$

## 4.4 Clearing mechanism

### 4.4.1 Clearing mechanism procedure

Amara clearing procedure is triggered by maximum loan/deposit ratio. When market fluctuates drastically and caused all loans/all deposits  $\geq$  maximum safety ratio, clearing mechanism will be triggered. Any participant (mainly clearing parties, acceptance parties) can execute clearing contract.

3 scenarios of triggering clearing mechanism

- Market value rise for borrowed assets. It may cause risk value exceeds 100.
- Market value decrease for mortgaged assets. It may cause risk value exceeds 100.
- Repayment overdue. Loan comes with interest, when loan plus interest reaches a certain value, it may also cause risk value exceeds 100.

E.G.

User  $X$  deposits 100 USDT and borrows DOT with mortgage-loan exchange rate 90%.

Mortgaged value of user  $X(Q)$  is calculated:

$$Q=100 \text{ USDT} \times 90\% = 90 \text{ USDT worth DOT}$$

When market value of DOT borrowed by user  $X$  rises above 90 USDT, clearing mechanism will be triggered.

### 4.4.2 Clearing parties, acceptance parties

In the Amara protocol clearing section, all orders triggered clearing mechanism will be shown. Clearing parties and acceptance can execute them according to contract.

### 4.4.3 Clearing reward, threshold and coefficient

Amara clearing threshold is 100%, clearing coefficient is 50%, when clearing process is completed, there is 8% clearing reward (7% is for clearing party, 1% is reserved for platform ).

E.G.

User X deposit 10000 USD worth BTC as mortgage and takes out a loan worth 8000 USD. When market value of BTC decreases to 8000 USD and reached Amara clearing threshold 100%, Amara protocol will automatically trigger clearing mechanism.

After which user X total assets is calculated:

$$10000 - 10000 * 0.5 (\text{clearing coefficient}) - 10000 * 0.5 * 0.08 (\text{clearing reward}) = 4600 \text{ USD}$$

Loan for user X to repay:

$$8000 - 10000 * 0.5 = 3000 \text{ USD}$$

Clearing threshold is re-calculated:

$$3000 / 4600 = 65.2\%$$

Total loss for user X:

$$10000 * 0.5 * 0.08 = 400 \text{ USD}$$

#### 4.4.4 Risk management

- Anti-risk deposit funds. When market fluctuates drastically and caused excessive wear warehouse, Amara risk management will withdraw from anti-risk deposit funds to compensate deposits. Long tail assets have higher margin ratio than mainstream assets. Anti-risk deposit funds come from interest income and 1% of clearing reward.
- Risk separation. Long tail asset loan is separated from mainstream assets loan.
- Set debt pool limit for each long tail asset, insure liquidity flow and avoid financial risk caused by chaotic debt expansion.
- Staking insurance to insure deposit security under extreme circumstances when safety deposit can not cover all loss. Participants make the decision to lock MARA token to avoid future loss and gain reward in return. Users who participate in Staking insurance will get more Staking reward and higher credit for loan.
- Issue additional token auction. When all the above approaches still can not cover all loss for users, auction for additional token will be triggered to ensure deposit safety.

# 5 Amara framework

## 5.1 Amara protocol framework chart

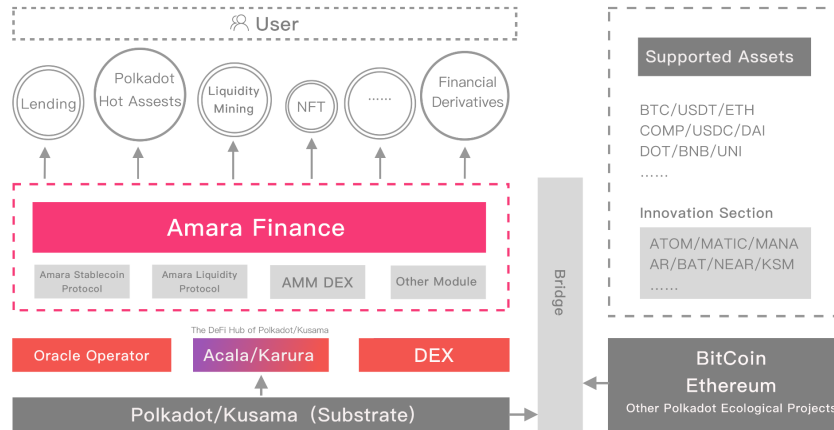


Figure 6: Amara protocol framework chart

Amara finance supports cross chain stable token released by Amara Stablecoin protocol and Staking liquidity released by Amara liquidity protocol.

Amara loan contract mainly includes:

- Control all deposits and reserved funds, process underlying logic (index cumulation, interest rate calculation).
- Calculate account balance(borrowed value, mortgaged value, liquidity pool value), provide data for evaluating every loan request risk.
- Interact operation(deposit, redeem mortgage, borrow, repay, clearing).
- One of the next level function is to transfer loan positions into tokens.

Amara loan contract process:

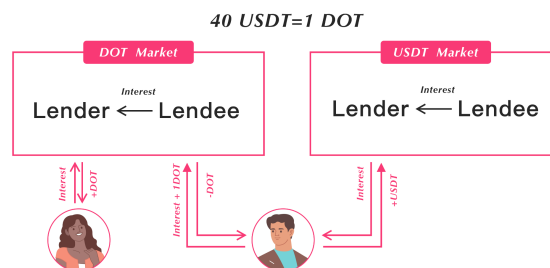


Figure 7: Amara loan contract process

Amara V1 is the 1<sup>st</sup> phase of Amara protocol, which gradually supports mainstream and long tail assets loan. Throughout its development Amara protocol will support clean loan and top rate NFT asset loan, and expand to other financial derivatives of DeFi, and build Amara financial system.

## **5.2 Technic modules**

### **5.2.1 Price prediction module**

To reach the demand for real time evaluation for mortgaged assets, and exchange between deposits and Amara tokens, price prediction module will integrate the top 10 exchanges data and provide calculated price for other Amara contracts.

Amara V1 uses ChainLink for price prediction to ensure safety.

ChainLink provides several functions to guarantee financial safety:

- Hi-Q data. The ChainLink system feeds from professional data aggregation sources, which indicates real time globe market price.
- Safe nodes. All ChainLink sources are protected by decentralized blockchain oracle, and independently operated by the experienced DevOps team, every node is safely audited, thus reduces shut down time and witch attack.
- Decentralized network. The ChainLink system is decentralized at blockchain oracle and data source level in order to maintain high work time and sustain high operating frequency.
- Blockchain supervision. ChainLink system is open and accountable, everyone can supervise.

Amara protocol sets up data aggregation and interacts with ChainLink system, data exchange includes real time market price for ETH, BTC and so on, outside information and predicated data. Data aggregation provides fundamental support for all diverse Defi applications.

### **5.2.2 Inner blockchain communication bridge module**

Amara underlying architecture is based on Acala blockchain network, when transactions are related to other public blockchains, e.g. BTC, EOS, ATOM, Amara invokes inner blockchain communication bridge module to complete transactions.

Polkadot networks contains several inner blockchain communication bridges. E.G. ChainX gateway, ChainSafe bridge from Ethereum to Substrate, Bifrost bridge to EOS network. Acala network aggregates all the bridges and supports Amara protocol to expand.

### 5.2.3 AMM module

Amara Swap is the DEX trade module, through which users can trade all types of vTokens. Amara V1 adopts Acala DEX module, later on will develop applications.

- Exchanges between MARA token and ACA, DOT.
- Provide mobility for all participants, gain transaction fee and mining reward.

## 6 Community governance

MARA is the only ace for Amara community governance. MARA holders and DApps developed based on Amara Finance will continuously and automatically obtain governance rights.

Under the principle of "one currency, one vote", Amara Finance is jointly governed by MARA holders. Amara team will work with community members to build and improve the scientific governance system, and realize community governance with achievable goals, healthy processes and satisfying results.

### 6.1 Governance structure

In the initial stage of Amara governance, MARA holders have the right to vote on the following matters:

- Create a new lending market
- Update the interest rate model of the market
- Update oracle address
- Choose a new admin
- Voting protocol improvements/suggestions
- Add a new cryptocurrency or stable currency to the protocol
- Schedule of reservation allocation for entrustment protocol
- Other relevant matters of market policy

In addition to the above mentioned, in the stage of liquidity mining, the addition and regulation of mining pools and related matters of community operation are also governed by the community.

In the future, MARA holders will gradually have the full ownership over the protocol, and finally decide the business development direction, market development plan, technical route, asset security, ecosystem incentives and more.

## 6.2 Governance procedure

A complete Amara ecological management process includes the following steps:

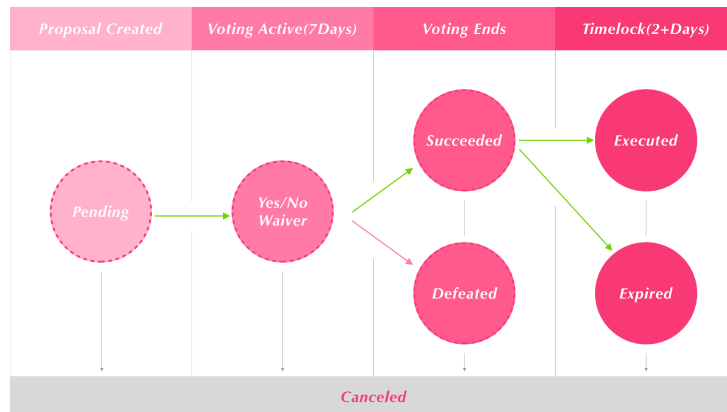


Figure 8: Governance procedure

(1) Initiate a proposal

All MARA holders can initiate a proposal, but a qualified proposal needs to meet the requirements of locking MARA. Under normal circumstances, sponsors need to lock in at least 10,000 MARA in the voting system, and then they can generate new proposals, which can enter the voting stage after being approved by the foundation or the rotating super node.

(2) Voting

The voting period of a qualified proposal is one week. During this period, all MARA holders can vote on the proposal, with one currency one vote. There are three voting options, namely "Yes", "No" and "Waiver".

(3) Voting results

If a qualified proposal wants to be recognized by MARA ecosystem and take effect, it needs to meet the following conditions:

- More than 20% of circulating MARA participated in the voting (it can be appropriately reduced in the early stage);
- After excluding "Waiver", more than 60% of the votes are "Yes".

If fail to meet one of the above requirements, the proposal will be rejected by the system. If the proposal fails in the end, 5% MARA collateralized by the sponsor of the proposal will be systematically included in the "voting incentive pool", and the rest will be returned to the original holder; If the proposal is passed, all the locked MARA will be returned to the original holder; If the "voting incentive pool" has funds, one part will be awarded to the legal person of the proposal according to the proportion of 50%:50%, and the other part will be equally distributed to MARA holders participating in the voting of the proposal according to the number of votes.

#### (4) Implementation of new proposals

If the proposal is passed, then is the implementation phase. All governance and other management operations must stay in the time lock for at least 2 days before they can be implemented in the protocol. If there are problems related to system function development, an announcement will be issued and detailed implementation steps will be given.

As a decentralized DeFi platform, Amara Foundation, in the initial stage, will lead and initiate community autonomy for the smooth launch and operation of the project. Gradually, the decision-making right will transfer to community members through the allocation of governance token, including code evolution and finance operation. Holders can propose changes to MARA protocol or vote on the proposal, so that the "user" of the project is infinitely close to the "owner" of the project, what we call decentralized governance. Meanwhile, the unavoidable issue of blockchain can also be solved, that is effective incentive and consensus.

After Amara platform completes the ecological layout in the future and runs in a reliable distributed way, the team will delete the last governance fault protection function, until when the platform and related protocols will be fully governed by the community. Therefore, all adjustments to Amara platform will be undertaken by MARA token holders, thus realizing complete decentralized community governance.

## 7 Amara roadmap

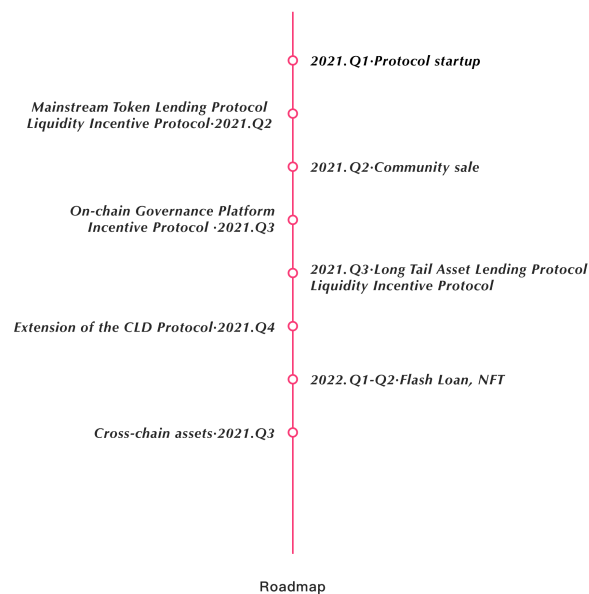


Figure 9: Amara roadmap

2021 Q1: Protocol startup

2021 Q2: Community sale will start in May

2021 Q2: Mainstream Token Lending Protocol and Liquidity Incentive Protocol will be launched in June

2021 Q3: On-chain Governance Platform Incentive Protocol

2021 Q3: Long Tail Asset Lending Protocol and Liquidity Incentive Protocol will be launched in August

2021 Q4: Extension of the CLD Protocol

2022 Q1-Q2: Flash loan, NFT

2022 Q3: Cross-chain assets

## **8 Risk disclaimers**

### **8.1 Contract risk disclaimer**

All contract codes of Amara will be submitted to a professional blockchain security company to perform the security audit process.

Amara team will gradually update the security audit progress, including the contract address and audit certificate.

Please note that security audit cannot completely eliminate all risks! Please be sure to invest within your risk tolerance, and don't invest all your assets in Amara, so as to avoid unbearable asset losses, especially as a liquidity provider.

### **8.2 Management private key disclaimer**

The management key for deploying smart contracts has the highest authority to control contracts, and can modify various mining parameters (such as modifying mining weights of various mining pools, adding new mining pools, etc.), and suspend contracts in case of emergency.

The core development team will only use it when upgrading and adjusting mining parameters in the initial stage of the protocol's launch. After the protocol runs stably, Timelock delayed execution mechanism and multi-party signature mechanism will be added to the smart contract to eliminate risk.

### **8.3 Assets risk disclaimer**

1. The cryptocurrency collateralized in Amara mine pool may have its legal currency value greatly reduced due to the unfavorable cryptocurrency market environment.
2. Subject to factors such as liquidity in Amara platform, the price of long-tail assets may fluctuate.



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