Lightpaper

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Introduction of KAKI

KAKI is a decentralized retail options `protocol`, planning to deploy on Ethereum scalable solution Layer2. KAKI is also able to be built on other chains, which is probably going to happen `with the development` of technology. Our mission is to provide an easy and interesting decentralized options exchange, based on blockchain technology, DeFi Lego and Layer2 technology. The options price is from BS mode, and the spot price is generated by spot transactions rather than Oracle feed, because we use automated market making for spot exchange. KAKI team devotes to achieve a writer market making and decentralized options exchange which is able to hedge Delta risks and recycle options at the same time.

Challenge

1. Comparing to other derivative products, options themselves are more sophisticated, so that no matter on centralized or decentralized exchange, the interface is complicated to handle, such as Deribit. Although some decentralized options exchange already made some progress on simplifying   transaction's interface, it's still not attractive enough. In the traditional financial world, options trading volume is as much as futures', sometimes even more than futures'.However, in DeFi world, options trading volume is only 3% of futures'. Options products that should have special attracts is inaccessible for traders, and seems only can be used by hedge fund firms.
2. The existing DeFi tech still cannot support order book to perform the functional advantages, because the expensive gas fees limit the liquidity supply and transactions. AMM(automated market-making) mode increases the liquidity supply and capital efficiency to some extent, but there are still some problems for different options DEX (decentralized exchange), especially when it comes to the risks of market makers. 3.
3. The secondary market is a very important extension for options trading, which has very deep liquidity for freely trading, and it's the pain point

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for some options DEX like Hegic.
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Solutions

Facing these challenges, KAKI is striving to develop an options DEX that is suitable for retail traders and professional traders at the same time, so we've made innovations in some ways.

1. **Cartoonization in the interface**. We are proud of our design because it is unique among those options DEX. It's so special that you couldn't believe this is a stressed financial exchange, on the contrary, KAKI is easy to handle options trading and you can have fun.
2. **Gamification in options concept**. Considering that options characters make it a high threshold for private traders, we try to make options concepts gamification which is more comprehensible. For example, the whole trading process is like launching a rocket, and trading No Loss Options is like playing a game especially when you join the team fighting. Thus, even green hands can understand it and operate options.
3. **Options products diversification**. We have two parts for options products. Part 1 is aiming at trading for fun especially for retail users, mainly products are Binary Options and No Loss Options. Part 2 is for professional traders relatively speaking, and the product is European Options which is still under development. Comparing to the existing options products, European Options on KAKI is more full-functional, with better liquidity, low risk of market-making, options trading, and secondary market. These products can bring larger audiences varying from green hands to professional traders. It's a good thing for the options market where traders have more choices.
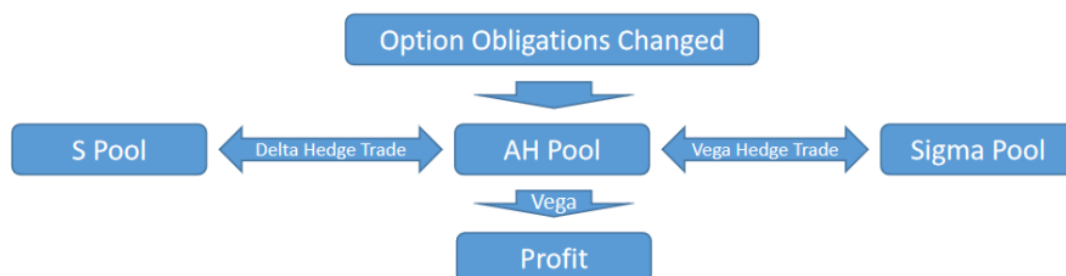

4. **WMM—-Writer Market Making**. All the options DEX is trying to figure out how to provide deep liquidity. Writer Market Making is an innovative mechanism to solve liquidity problems by KAKI, and it's used for European options. Based on the knowledge of Greek letters have an influence on the options, we build a hedging mechanism to hedge Delta and Vega risks as the picture shown below. S Pool is a spot exchange pool using AMM, which can generate spot prices and decrease the risks of price fluctuations, so there are no bet risks for liquidity providers(LP). Thus AH Pool is an automated market-making almost without Delta and Vega risks, and LP is happy to get steady profits. Deep liquidity with a low risk of market making is helpful for a cold start at the beginning, who doesn't like it?
5. **European options Secondary market**. AH Pool not only can make the market automated but also can recycle options from options traders. A secondary market is necessary to build

because it's quite helpful to protect the interests of traders and contributes to boom the market.

Options Products Part 1——easy options trade for fun:

1. **Binary Options.** Binary Options on KAKI are not exactly the same as traditional Binary Options. It doesn't use pricing mode and the profits in every round are from Volume-Profit Model. It's a peer to pool that buyers and the liquidity pool are counterparties. Buyers can choose to purchase a call and put option, and the result of every round is—— win & loss.

2. **No Loss Options.** To participate in No Loss Options, you should be the LP firstly, and the LP Token is the available prove to join in No Loss Options. We will manage the liquidity to get some profits as the reward of winners. The result of every round is——win a profit & no profit. You can tell that making a profit is like winning a lottery, and more importantly, there is no loss risk for your capital. Another highlight is super interesting that you can join a team to experience Team Fighting. Check out the below picture:
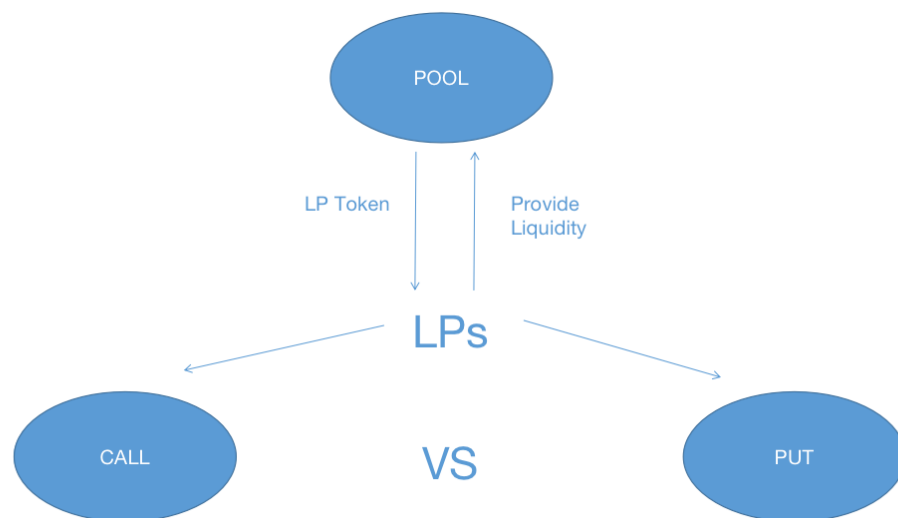
Options Products Part 2——professional options for top traders:

European Options. It's a traditional options product, integrated by the trinity of liquidity mining, peer to pool automated market making and recycle options in the secondary market. European options on KAKI have some features as following:
Spot exchange
Specified options exchange
Options recycling
Executing options in advance

Executing options at the expiration date

Perpetual service for Options

We conducted a detailed risk assessment for each factor to protect LP's interests, check the chart below

Dynamic Hedge Engine

← Sell Token	Token Exchange Service (AMM)	⟷	S Pool (Token)	← In ← Out ← Bonus	Ower Service
← Buy Token					
← Sell Option	Option Exchange Service	⟷	AH Pool (Obligation, Virtual, Zerosum)	← Time pass ← σ0 change ← r change	Environment
← Recycle Option					
← Exec Option					
← Not Open	Sigma Exchange Service (AMM,Virtual)	⟷	Sigma Pool (Virtual)		