trickle

Litepaper

DeFi Development... Democratized!

Trickle brings together two technological innovations of the moment: decentralized finance, and low-code development.

Together, they create a platform that empowers anyone with a good idea to create their own decentralized innovations, by themselves.

They won't need to hire expensive blockchain developers.

These creators will also enjoy the option of gaining immediate access to capital, from the moment they deploy their DeFi tool. That's made possible by Trickle's ample liquidity provider community, who are attracted to the platform by its innovative staking opportunities.

So you see, Trickle is BOTH a DeFi development platform and a liquidity marketplace, rolled up into one!

This would be the first such platform of its kind… and the potential of the well-resourced innovation it will unleash… is limitless!

Problem

- Though it aims to be democratically empowering, access to smart contract technology is limited by high barriers to entry.

- Coders specialized in blockchain and smart-contract technology are very much in demand and are incredibly expensive to hire.

- Whitelabel solutions on the market today are opaque and centralized. People do not have ownership or a transparent view into how they work.

- Those who get to develop ideas usually encounter another bottleneck: finding a market to sell it to. Attracting liquidity is a time and cost intensive activity in its own right.

Solution

- Create a platform which allows you to assemble smart contracts yourself, without needing to code

- Offer creators modules with open-source code, which have been individually rigorously tested and audited

- Connect creators with a community of liquidity providers who are attracted by the wide variety of opportunities hosted on the platform

The drive towards financial democracy

Bitcoin was born from a crisis that bankrupted everyone's faith in the prevailing financial order.

From the very beginning, blockchain's narrative has centered on individual empowerment. The goal is to build a system that allows us to manage our own financial actions and interests, without untrustworthy, expensive middlemen.

Such a change is essentially democratic. It seeks to bring finance back under the rule of the people.

It started with Bitcoin creating a way for people to transfer tokens at will; without mediators, and without interference. Now decentralized finance, or DeFi, is remaking the entire range of financial instruments in this same image.

How?

Well, the essential problem that finance tries to solve, is how to source, match, and provision liquidity. A "liquid asset", simply means anything that can be exchanged at a moment's notice for other goods and services of value.

As long as some people have more liquidity than they need, and others not enough, there exists the potential for exchange between them, to mutual benefit.

Let's take the original, simple mission of the everyday local bank as an example.

The bank enabled individuals with excess savings to put their money to use. Their funds were lent to others who needed it, and the bank charged a fee for this service that it shared with its savers.

At the heart of this exchange is a very simple, general agreement that forms the basis of every financial instrument:

"If you leave your liquid assets here, you'll get something in return."

What those terms are, can be rigorously specified in code using smart contract technology. They are transparent, and openly verifiable. Driven by the forces of logic, these agreements can be used without needing an army of lawyers to draw up terms, nor courts and police to enforce them.

That's a massive improvement, BUT… we do still need an army of coders to develop these tools…!

Or perhaps it's more correct to say, that we used to...

Low-Code/No-Code: the other techno-democratic revolution

New blockchain innovations come in at a mile a minute, so we can't be blamed for missing other big shifts that technology is driving elsewhere!

The rise of low-code/no-code development (LCNC), is one such change that's being hailed as a revolution in its own right. As the term suggests, LCNC allows users to develop their own apps and software solutions with little or no coding needed!
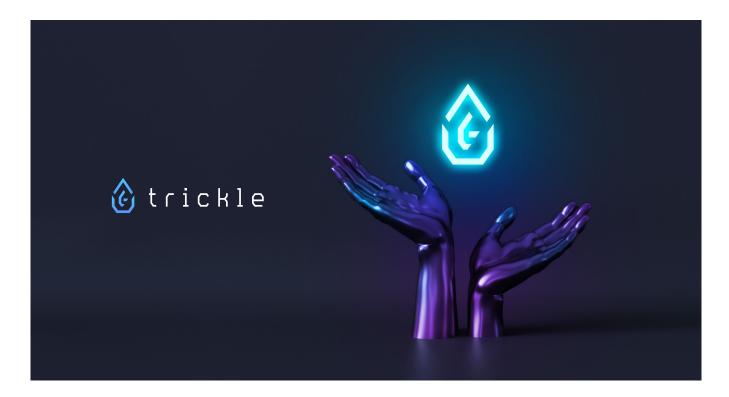
The ramifications here are huge.

LCNC shrinks the time needed to develop new software, boosts the app's agility once it's running, and allows teams to get off to a flying start. This happens because teams are now disburdened from the need to find expert coders, and the money that pays their salaries.

Like blockchain and DeFi, LCNC is an essentially democratic development. It places more powers of technological creation in the hands of everyday people.

Trickle was born from the realization that the DeFi and LCNC movements synergise, and can be brought together to supercharge a common cause.

By making this move, Trickle will not only provide its users with alternatives to the centralized, extractive financial system (as other DeFi products do), but will also empower users to design financial products and solutions of their very own!

Becoming your own bank

So how can DeFi development - something which seems highly complicated - be made accessible to the broader public?

Well, when you apply for ordinary financial services at a retail bank, the applications are all managed in a natural, spoken language. In today's digital era, we apply for them using digital forms on our computer and mobile phone screens.

Trickle is going to offer this kind of intuitive, visual experience to enable people to assemble their own blockchain-based financial instruments.

So what would these be, exactly? Well here are three examples of templates that Trickle would make available to its DeFi developers:
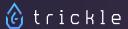
1. Build your own "Airdrop" pool

Everyone loves free stuff! That's why freebie giveaways are a common marketing strategy that LOTS of companies and solopreneurs find themselves using.

But getting freebies to your community can be a logistical nightmare, and create costs that void the entire exercise outright! Not so if you run an Airdrop pool!

Airdrop pools allow businesses to distribute digital assets directly into the wallets of anyone who wishes to claim them, by placing their tokens within a central liquidity pool. It's all easy, and hassle-free.

2. Mint your own NFTs

NFT's hit the public consciousness in a big way in 2020. Trading volumes in the first half of 2021 have been

reported at $2.5bn and are still growing rapidly. NFTs are a great way of creating exclusive membership access rights, or claims on unique assets like limited edition art or music releases.

Unfortunately, artist communities that have the most to gain from NFTs are also among the most tech averse and risk missing out… Trickle's lowcode, off-the-shelf NFT minting solution would fix this, giving artists practical access to these hugely empowering tools, without needing a technical support team behind them.

3.   Launch your very own, fully deployed IDO (Initial Decentralized Exchange Offering)

Imagine being able to tap the fundraising power of a public token sale, without needing the army of experts to help you assemble and launch it for yourself!

All you'd need to do is to invite investors to deposit into liquidity pools with specified addresses, and the rest of the IDO and vested token distributions all execute like clockwork!

Trickle's IDO templates will adhere to the latest norms and standards these kinds of fundraises employ. Users will be able to reproduce the same kinds of tokenmetrics and sale structures that blockchain entrepreneurs use to raise capital.

Fully-fledged solutions like the ones mentioned above will be accessible to users through Trickle's "Whitelabel Dashboard".

These whitelabel solutions are quite complex in their own right, being made up of many smaller pieces. Luckily, Trickle users will also have access to these simpler elements. These will be stored and accessed through a "Smart contract archive".

By recombining elements from this library, users can build new powerful devices of their own, with the comfort of knowing that Trickle has audited and tested each individual module rigorously.

What's more, Trickle will not force users to deploy products on Trickle's own platform, but will give users the option to be able to deploy them and integrate them on users' very own webpages. Exclusively, if they wish to!

Thinking bigger still

The ability to design your own financial instruments actually only takes you half-way towards becoming your own bank…! Even once you've come this far, you'd still need to find investors to provide you with liquidity. (And find enough of them to scale!)

Trickle pool developers who have a strong brand and marketing operation, can probably rely on these strengths to source the capital they need to achieve their goals. But what happens when those fundraising abilities don't go far enough… or when the user simply doesn't have them at all?

A cool DeFi instrument is of little use if it cannot attract the capital it needs to function!

Luckily, Trickle also has the solution here, by giving its lowcode DeFi community the option to deploy on Trickle's own web-platform.
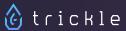
Why does this help?

Well, with so many exciting DeFi creations going to be designed, launched, and hosted on Trickle, this instantly positions it to also become a DeFi marketplace. One that attracts liquidity providers and their capital with access to multiple cutting-edge opportunities.

The combination of this market and the development side of Trickle's platform, have all the makings needed to create a virtuous cycle. More liquidity begets more DeFi products, which then attract more liquidity.

The end result, as Trickle grows, is that it scales to offer a democratized, decentralized alternative to conventional capital markets.

H2O's role on Trickle

We now have a complete picture of the key stakeholders in Trickle's ecosystem. They are:
• Trickle's lowcode developers
• Trickle's liquidity provider community
• The team running Trickle itself

We are going to look at how the interests of these parties are aligned, and how Trickle encourages actions from them that are beneficial to the network.
This is all done with the help of Trickle's native utility token, H2O.
Before we begin, let's state the intended goals of Trickle's tokenomic engineering upfront. Doing this helps us understand the rationale motivating the tokenomic designs, which helps us to put them into context.
The main goals that Trickle aims to achieve are:

1. Reward TVL growth, revenue generation, and yield performance on the network
2. Create a sustainable funding stream for Trickle's operations
3. Create a cost structure that offers a low barrier to entry tomake it easy to trial and test new pool concepts, but that also disincentivizes "spam" and wasting of resources.
4. Create flexibility for pool operators to tailor their profit models, by giving them the freedom to set and adjust their revenue fees.
5. Create an engaging experience for DeFi developers AND the liquidity provider communities.
6. Provide defences against inflationary dilutions of H2O's value.

Let's see how these goals are achieved by looking at actions these three stakeholders can take on Trickle, and the role that the H2O plays for each of them.

LowCode Creators

Creators on the network typically handle H2O in one of four actions that are exclusive to this role:

1. To fund the "operating stake" required to open and run a pool
2. To pay the APY on those funds if they have been borrowed
3. To charge and collect fees from public liquidity providers that use the pool
4. To receive lottery distributions disbursed from a central user fee pool
5. To receive performance-based distributions funded from a central user fee pool
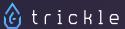
Let's explain each of these individually.

1. Meeting the minimum operating stake requirement

Blockchain services don't come for free!

Actions that record information on blockchains require computational resources and a large amount of traffic will take its toll on network speeds and performance.
Since running smart contracts on Trickle likewise consumes resources, this needs to be signalled back to creators as a cost they have to pay.

In the first instance this is done by requiring creators to lock up a fixed sum of H2O as a "pool operating stake".

This stake grants the creator permission to run a pool, so long as this stake requirement is fully funded. When the creator chooses to close the pool, the H2O locked in the operating stake, is released back to them.

2. Paying interest (if operating stake has been borrowed)

The operating stake requirement needs to be of material value in order to disincentivize inefficiency and spam.
But Trickle has a competing goal it's trying to meet. In order to foster innovation on the platform, new creators need to have a way to trial and test new designs at low cost. Having a high operating stake requirement would appear to counteract that aim.
Trickle's answer is to allow creators to fund the operating stake requirement with an H2O loan that's borrowed from a special centralized loan pool governed by Trickle's protocol.
This H2O loan will charge a set interest rate. This rate will initially be fixed centrally when Trickle first launches, but the eventual aim is to allow it to vary dynamically according to demand and supply pressures on the central loan pool.
This interest has to be paid by the creator back to the central loan pool, for as long as they wish to continue to operate the pool that they have designed themselves.
If the creator fails to do this, the protocol will reclaim the H2O in the operating stake, returning it to the central loan pool that originally funded it.
This removal of the operating stake, at the same time, closes the creator's pool.
This loaned H2O solution permits creators to choose between two options to be granted pool operating privileges:

A. A large one-off set up cost (fronting the operating stake themselves)
B. A much smaller continuing operational cost (the interest on the operating stake loan)
Since the pool is dissolved when interest payments are not kept up with, both options work to disincentivize spam and move inefficient load off the network.

3. User fee collection

Creators will have the freedom to set a user fee to be paid by the other users of the pool. These fees are also denominated in H2O.

It is important to note however, that creators will not benefit directly from these fees.

Instead, the protocol automatically collects and siphons off 100% of these user fees into a centralized "user fee pool" that is managed by Trickle.
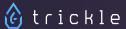This user fee pool is used to fund multiple disbursements. The main one is a redistribution lottery which occurs on a daily basis, and is funded by 98% of the user fees collected in the previous 24 hours.
Creator pools are eligible to be selected as winners for the redistribution lottery, but they also may receive another performance-based disbursement that's funded out of 30% of the remaining 2% of the user fee pool (what we shall call the "performance distribution").
The sum receivable as a performance distribution by any individual pool will be based on their performance, relative to other pools in the network. This performance measure includes the quantity of user fees that each creator pool contributed to the user fee pool for the current redistribution event.
This means that creators have an incentive to charge users larger fees since, all else equal, doing so increases their chance of receiving a larger amount upon redistribution.
At the same time however, creators need to take care that they don't overcharge for user fees. That otherwise

risks deterring users into joining other Trickle pools with more economically attractive terms. If creators have no users to pay these fees in the first place, the pool's chances of receiving performance redistributions diminishes.

4. Receipt of Trickle distributions and pass-through to liquidity providers

If a creator pool wins the redistribution lottery or receives a performance redistribution, these receipts are also denominated in H2O.

Creators will have the freedom to set what share of this reward they keep for themselves, and what share is passed on to the liquidity providers who paid the user fees that contributed to it, in exchange for being able to use the creator pool.

This covers all the uses for H2O that are exclusive to pool creators on Trickle. Let's summarize how they come together to shape their decision-making. Decisions on whether to operate/run a pool will be based on the following assessments and considerations:

1. Is it worthwhile for the creator to fund the operating stake needed to open a pool for themselves?
2. Will it be worthwhile for them to pay the interest charges on this operating stake if they choose to borrow the H2O instead?
3. Given the reward stream they expect to be able to generate for pool users, and the current range of offers available in the market, what user fee rate do they charge users (taking into account the contribution this makes to their chances of winning the redistribution lottery or a significant performance redistribution)?
4. What share of rewards received do they commit to passing on to their users as an additional reward incentive?

Liquidity provider / Pool-user community

Trickle's pool-using community will typically use H2O in the following ways:
1. To paying user-fees set by pool creators
2. To receive any rewards that accrue to them via redistribution lotteries, or performance redistributions

Let's look at each of these in turn

1. User fee payment
This use has already been covered in the creator section.
Creators set user fees, denominated in H2O, that are paid by pool users.

2. Distribution receipts
The user fees do not go directly to creators but instead accumulate in a centralized user fee pool that funds various distributions.
Users receive H2O tokens from the pool when:

• Their pool has received a performance redistribution or has won a redistribution lottery, and the pool terms commit to passing some share of the proceeds to users

• When they have been directly selected as winners of the redistribution lottery

To summarize then, pool users will make their decisions as to whether to join a pool based on an assessment of the following incentives and considerations:

1. The defined reward stream offered by the pool (whether an APY defined for some token, or some other airdrop or digital asset/reward claim)
2. The chances of that pool of winning redistribution lotteries, or earning performance redistributions, considering the share that pool creators commit to passing on to users
3. The sum of user fees that users have to pay to join   this pool
4. The sum of any other coin staking that's required to access the pool (e.g. some balance of ETH/BTC/USDT etc.)
5. The attractiveness of other opportunities to directly participate in the redistribution lottery

Utilities available to all H2O community holders
The H2O token utilities that we have discussed so far have been limited to actions that specifically concern community members' roles as "pool creators" and "pool users".
There are some additional actions that any and all H2O community holders will be able to take, regardless of their roles as pool creators or users.
These actions are:

1. Staking H2O for yield in the central loan pool
2. Participating in Trickle's lossless staking offers
3. Participating in Trickle's drip mining offers

Let's cover each in turn

1. Staking H2O for yield in the central loan pool
The central loan pool that funds loans for new pool creators is itself going to be funded by Trickle's community.

As discussed, this pool will initially pay stakers a fixed APY. This APY will be funded from the interest receipts creators pay back to the pool.

Eventually, the goal is to have this rate vary dynamically in a way that meaningfully responds to changes in demand/supply of H2O in this pool.

2. Participating in Trickle's lossless staking offers
Trickle will offer its users the chance to stake for a variable reward, while always guaranteeing their claim to receive back the sum they initially staked.

Trickle routes all these stakes into yield generating protocols, and then collects their aggregate yield into a reward pool.

A small subset of stakers are then randomly selected. The funds in the reward pool are distributed to them, in proportion to their relative contribution of their stake within the selected user set.
The outcome for these users, is that they receive a much higher APY than they would otherwise have been able to, if they sent tokens to these yield generating protocols themselves.

Meanwhile, the stakers who were not selected, are still able to withdraw the tokens they had initially committed. This is the sense in which the staking of this programme is always "lossless".

3. Participating in Trickle's drip mining offers
Drip mining will allow users to convert any current, liquid sum of H2O into a larger, future claim that will be released (or "dripped") to them over time.
The programme initially will offer users the option to burn a sum of H2O. In exchange, they receive a drip flow
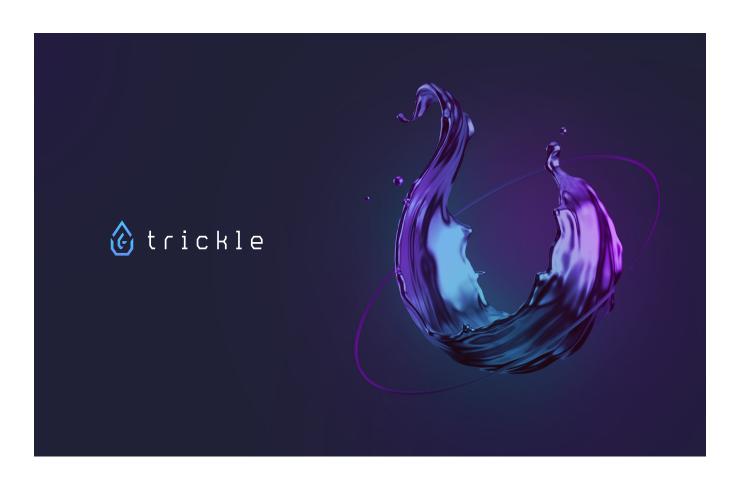
course of one year, (much in the same way that private sale tokens vest over time).
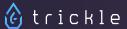
Trickle operational funding
The last Trickle stakeholder and H2O user we have left to cover is the Trickle platform itself. Continuing to maintain, develop, and improve Trickle will need ongoing operational funding, and the tokenomic design has been crafted to take that into account.
This arrives from fees that are collected from the various services promotions run on Trickle's platform.

1. An interest spread, or margin between lenders and borrowers in the central loan pool that compensates Trickle for management and default risks on this capital. (These fees are generated in H2O.)
2. A fee on the disbursements made in the lossless staking programme. These fees will be denominated in the same token staked and yielded by the yield generating protocol used to generate the APY paid to stakers.
3. Fees on any conversions that Trickle carries out to facilitate the payment of user/creator dues that are denominated in H2O. These fees will include denominations in other digital tokens.
4. A 2% fee on the total sum of user fees collected prior to each redistribution event. Of this 2% fee:
• 25% of H2O in the pool is burned,
• 75% gets distributed to the treasury. Of that 75%
• 30% funds performance redistributions
• 30% funds R&D expenses
• 20% funds liquidity allowing users to easily convert H2O on the platform
• 20% tops us reserves that pay out drip mine rewards to users

How Liquidity Providers are kept safe

With its emphasis on facilitating and advancing DeFi development by third parties, how can the liquidity provider community on Trickle feel assured that the tokens they commit to these schemes are safe?

The first answer to this is to restate that all items on Trickle's whitelabel dashboard and all the modules in the smart contract archive have been individually audited and tested.

The next assurance provided is to ensure that pool creators will not have any custodial rights over tokens provided by pool users. For example, pool designs that collect non H_2O tokens for yield generation will be limited to interfacing with known and trusted yield generation protocols like Curve and Compound.

In the end though, the goal is to open up the DeFi design space fully. Trickle aims to achieve this vision while caring for the safety of its liquidity provider community by developing escrow mechanisms that remove the risk of nefarious token handling by pool creators.

Trickle Archive Overview - More than just DeFi

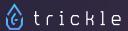## So what exactly is a Trickle archive?

Trickle is more than just DeFi. With the whitelable smart contract archive, Substrate developers will be able to integrate templated contracts directly into their blockchain. The archive is a library of these contracts that will be open-source and made available to all.

The archive will contain all contracts available to users, these are not specific to DeFi and will encompass ALL smart contracts. From DeFi to GameFi and everything in between. If there is a contract with high demand or utility, it's very likely to be added to the archive. Trickle will be looking to add all open-source contracts, as well as working with large proprietary projects to offer their templated contracts to the archive on a pay to use basis.

What is a templated contract?

Each contract will have some predetermined variables that users will be able to change before deploying a contract. This means you can update or define specific functions of the contract without worrying about breaking any code, only the updateable variables can be altered.

This means no-code access to high end audited contracts. Allowing developers and everyday users to have access to the same global library of easy to understand smart contracts.

Trickle Roadmap

Trickle's an ambitious project and there's lots to do! The aim is to get the full set of features detailed in this document up and running in one year.

Q4 **2021**

Trickle will deploy the main platform redistribution pool, and begin development to support its lossless staking programme.

Q1 **2022**

Trickle will release its lossless staking contract, and also begin development of its "smart pool toolkit".

Q2 **2022**

By Q2 2022, Trickle will release simpler elements of its smart pool toolkit. Development will begin on its mobile app support.

Q3 **2022**

Trickle will complete a transition to Polkadot to support superior performance and have completed its full web and mobile apps.