W H I T E P A P E R

InkDrop.

Microblogging done right
with blockchain technology.

IMPRINT

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Written by:
TOBIAS SCHODER & MICHAEL KASERER

Desgined by:
TORBEN WOLLSCHLÄGER

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EXECUTIVE SUMMARY

InkDrop is a blockchain-based microblogging platform for publishers to monetize content and spread information.

The **InkDrop** project is set on a sincere mission to create an alternative to the traditional social network model. It's a social microblogging network that utilizes blockchain technology to empower its users, offer innovative and fun features, and share the profits with content creators, curators, and moderators.

We have come a long way in social media today and a lot of great services have been developed to connect people around the world. Yet, it seems that somewhere along the way, social media has gotten on the **wrong track.** So, that we are now faced with issues like privacy violations, deteriorating user experience, manipulation & harassment, and creators & contributors not getting their fair share of the value they generate.

But why do these problems exist? Most of the issues we exhibit with social media today are symptoms of **centralization.** In the beginning, the Internet sought to be a decentralizing force that gives power back to the people. However, with the emergence of a few tech giants like Facebook and Twitter, it has become apparent that these platforms greatly centralize power.

With **centralization** we mean that these corporations hold all of the power over the network and claim the content and user data for themselves. They are the sole rulers of their networks and the only profiteers of the value generated by their users. In exchange, they enforce their terms of service and pass the profits on to their shareholders.

This uncompromising **focus on the shareholder** (instead of on the user) lead to the adoption of the advertising business model. Even though it was initially recognized as detrimental to the user experience and irreconcilable with user privacy. As of now, users have lost all control over their online identities and personal data.

Users start to realize that they are the product. As major social media corporations invest their efforts to better market their user base to advertisers, users become increasingly dissatisfied with the services. Algorithms organize our timelines solely to improve their conversion rate and sell us more products instead of improving the **user experience.** The user or community is no longer in charge of their timeline and no objective measure is being applied to identify valuable content.

Additionally, a variety of bad actors abuse these systems to spam or manipulate public opinion with an army of automated bots. All major platforms are incapable to cope with trolling and **misuse** of their platforms.

How can blockchain help to **solve these issues?** Blockchain technology enables us to 1.) truly decentralize power as the Internet initially sought to do, and 2.) transition to a market network and create incentives for fruitful behaviour.

1.) We can store content and data on the decentralized blockchain (not on private servers), effectively **breaking up the high concentration of power.** Similarly, blockchain technology gives power back to the people in the form of transparent information, user privacy, increased security, censorship resistance, and enhanced utility. Decentralization empowers the user and lets them actually own their online identities.

2.) Blockchains enable new ways to govern networks. Networks previously run by a single authority (i.e. corporations) can now be **governed by anyone with merit to the network.** Merit in market networks is determined by a commitment of work that advances the network as a whole. This work is denominated by a currency (i.e. crypto tokens) and depends on what the blockchain needs. Bitcoin needs work to secure the ledger and Ethereum needs work to execute and verify computation. For a decentralized social network, however, work can mean creating quality content, curate content for others, or help to fight trolling and misuse of the platform.

InkDrop's defining new feature is the DROP token and the added utility it offers to the user. There is a general timeline and channels for specific topics (similar to hashtags). For the **ranking system,** we believe that the community should again hold the power to determine valuable content, instead of some subjective algorithm with ulterior motives. So, we designed a very objective ranking system that takes only two factors into account; time and amount of DROP tokens in a post. DROP tokens can be attached to a post either by the creator (initial post balance) or by others who liked the post (i.e. crowdfunding content). The more tokens in a post, the higher it will be ranked. The tokens will be used up as time goes by and returned to the ecosystem via the incentive pool. Market forces will lead to an objective interpretation of the value from a post or a like. Added benefits for the user experience such a system provides are: more streamlined content, efficient diffusion of information, high quality contributions, a less cluttered timeline with frivolous content, and higher attention per post.

This radically new approach for a ranking system lets any creator **directly influence their network reach.** This is a huge advantage for users that, for example, usually aren't very active but now have some extremely important information to share (e.g. important crypto news, whistleblower information).

Others can then directly support that post to improve its rank even further, making likes finally something meaningful again. Because the ranking mechanism is so transparent, they know exactly what effect their like will have.

To influencing one's own network exposure is nothing new in social media. On traditional platforms, however, this was only an option for advertisers or shady entities that game the system to manipulate public opinion. We believe that, instead of playing cat and mouse with bad actors, **democratizing** the power to influence network exposure is the way to go. In a market network like InkDrop, it becomes immensely costly to operate millions of automated bots to influence public opinion. Because these bots that post and like content, compete with thousands or millions of users.

Additionally, we employ extra measures that penalize users who harass or send non-compliant content. A novel **crowd governance protocol** called **„Proof-of-Care"** (based on Vitalik Buterin's SchellingCoin principle) allows the network to regulate itself. With the help of the wisdom of the crowd, objectively non-compliant content can be identified, bad actors penalized, and helpers rewarded.

Finally, rather than all the financial gain being absorbed by the platform, **InkDrop hands over the fair share of its value** to its contributing members. Users can earn a legitimate income for creating and sharing information and content. A novel way to monetize on content creation and curation are InkDrop's private channels. Users can generate revenue from subscription fees for private channels, which they can open to offer curated or exclusive content for a specific topic (e. g. exclusive trading information).

1. CHAPTER – SOCIAL MEDIA TODAY

DEVELOPMENT OF SOCIAL MEDIA

In the early 2000s, social media started to gain huge momentum. Since then, social media networks have proliferated and became an essential part of our lives. By now, 33 % of the population is registered on social media platforms.

Today, social media platforms are plagued with bad press about spam, misuse, and privacy violations. Companies like Twitter rarely have new products for their users and much of their product development focuses on building tools to combat abuse and harassment.

We strongly believe there is a better way for social media, which is decentralization. Based on game theoretic principles, we designed a decentralized microblogging network that employs a token reward system. Through that we do not only want to combat issues of security and integrity but also incentivize more relevant content and an advanced user engagement.

MICROBLOGGING'S BIGGEST SHORTCOMINGS

„We've focused most of our efforts on removing content against our terms, instead of building a systemic framework to help encourage more healthy debate, conversations, and critical thinking."

– Jack Dorsey

Twitter, as the largest microblogging platform, wants to satisfy the need for information exchange. Its claim is to be „the best and fastest place to see what's happening in the world" in terms of live news, entertainment and conversations. Yet, in many ways it fails to deliver on their promise. We identified three issues why this is the case: user experience, centralization and security.

USER EXPERIENCE

Twitter's user experience issues are mainly related to the content provided by the network and the way users can engage with the platform.

Content wise, the UX is disturbed by too many irrelevant and low quality posts. Over the years, Twitter discarded dozens of ideas to reduce the noise in a typical feed. Conversely, unrelated posts were added like promoted content or Tweets from people you don't follow. This led to creators adopting a spray-and-pray mentality in fear of their posts dropping out of sight. This system design creates no incentives for truly valuable content and rather encourages **quantity over quality.** When browsing the network and different hashtags, users typically find frivolous Tweets with asinine opinions, dull observations, and stale one-liners.

„Getting information off the internet is like taking a drink from a fire hydrant."

– Mitchell Kapor

To optimize their newsfeed, power users have curated and customized their accounts over many years. New or light users, however, feel overlooked by the service. More likely than not, their first experience will be **confusing and uninspiring.** Finding new and interesting people to follow or content to enjoy is cumbersome for newbies. Twitter struggles to create an engaging user experience that incentivizes platform interaction. In fact, there really aren't many ways to interact with the platform at all and users have few reasons to hang around.

We are confident that our approach to a social network creates a much more exciting user experience with fun ways to discover new and relevant content. We also designed a token based system to better determine the true value of contributions, increase user engagement and add a sense of community.

CENTRALIZATION

In general, today's social media model has not evolved significantly. They offer free services in order to generate and sell user behavioral data and attention to advertisers. So, it is easy to argue that these services are not really for free but that the users pay with micro-incursions of their privacy and potential revenue derived from their personal data. We see this inequality in profit distribution as a direct result of the high concentration of power in a centralized authority.

Another issue that arises out of this high centralization is the issue of censorship. Governments **restrict access** or censor content through internet providers. This has been or still is the case in many countries, like China, Iran, Libya, Pakistan, Turkey or Syria. Twitter openly admits that if „competitors are able to successfully penetrate geographic markets that we cannot access, our [...] operating results may be harmed."

For a platform that promises to deliver real-time information, it is paramount to be immune to **outages.** Twitter admits that it has been and probably will be subject to service disruptions, outages and other performance issues. It expects these problems to arise mainly out of infrastructure and security issues, two factors that have their origin in the social network's current centralized nature.

We believe that there is a better way to design a social network and that part of the solution is in decentralization. It enables us to distribute the rewards from behavioral data equally amongst those who produce it. Through decentralization, InkDrop also intends to become a highly integrated and reliable network that is truly immune to censorship or outages.

SECURITY

„Google, Facebook, and Twitter basically control your identity, they are these big unaccountable centralized behemoth."

– Vitalik Buterin

Twitter's number one goal for 2017 was to make its service safer since it was plagued by bad press about **spam, abusive and illicit activities.** The service is increasingly being misused as a tool for hate speeches, harassment, and influencing of public opinion.

To gain attention, engagement and exposure, larger institutions utilize armies of **bots** (15 % of all Twitter accounts) that automatically like, share and post. These accounts aim to game algorithms and push content, drown out real, reasoned debate between peers, and create the illusion of popularity. In the face of these developments, social media platforms seem to have resigned. In their 2016 annual report, Twitter admits: „[...] we expect spammers will continue to seek ways to act inappropriately on our platform". This kind of influence is especially dangerous, since at least 59 % of Americans use Twitter as their main news source.

Other security issues are associated with platforms that are built on private servers since they are only as secure as their weakest defense. This leaves the user's privacy at a constant risk to the network's **single point of failure.** Such systems are far from being immune to malicious security breaches, as shown by a number of centralized, trust-based services that were said to be highly secure.

Twitter's direct messaging feature received some updates, like the ability to opt in to receive direct messages from anyone. This has brought it closer to a traditional instant messaging client similar to WhatsApp and Messenger. However, Twitter is still the only service that lacks **end-to-end encryption,** an essential security feature that is long overdue.

The InkDrop platform will be designed to combat these issues. Our **token based incentive system** relies on game theoretic principles that encourage positive network contributions and discourages unwanted or non-compliant behavior (e.g. trolling, influencing public opinion). Moreover, it will utilize the benefits inherent in blockchain technology including the improved user privacy and platform security.

In the following two chapters we will discuss the different features and mechanisms of InkDrop that aim to solve these issues.

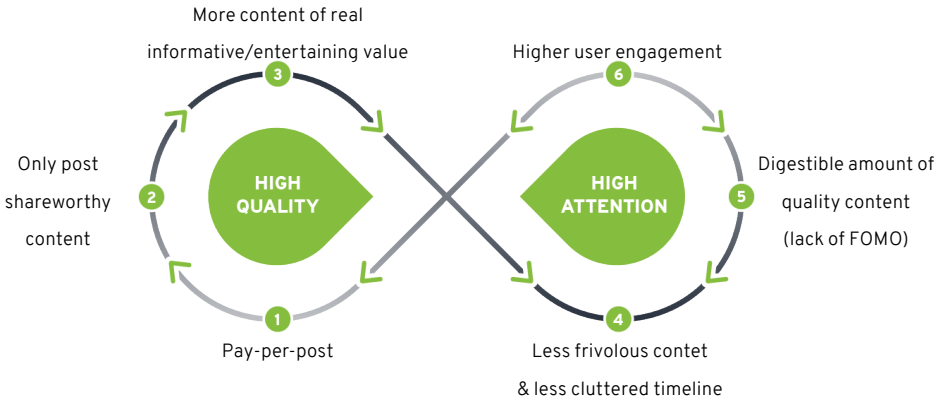
2. CHAPTER – THE INKDROP PLATFORM

Introducing **InkDrop,** the social network that employs the power of the blockchain through **new token based features.** InkDrop users are able to assign a specific value to their posts and likes. The value is determined by the amount of crypto DROP tokens, which have a limited supply, associated with it. We will now examine those features more closely and look at the benefits they have regarding the platform dynamics.

Microblogging platforms like Twitter are unique in their **broadcasting capacity.** Relationships between followers and those being followed primarily rest on information exchange rather than friendship.

We believe that with the help of blockchain technology and the unique features it enables, the sharing of information can be made **more efficient.** The same is true for determining the true value of content (to oneself or to others), by utilizing **crypto tokens as a metric.** Eventually, this will lead to **increase content quality** and **higher attention per post.**

ASSIGNING VALUE TO A POST



In short, users who are about to post something on the platform can assign a certain amount of DROP tokens to their posts. Through that users can easily control the post's exposure in terms of rank and duration. Hence, users have a direct influence on its performance, depending on how much they value their contribution. Users are free to decide on the amount of tokens, which can be anything from a few DROP 'cents' to a couple hundred or thousand DROPs (but

must be above zero). As visualized in the loop above, this brings a number of benefits for the platform in terms of user attention and content quality.

BENEFITS FOR THE CREATOR

The question remains, why would anyone pay for a service that is free on other platforms? After assigning actual value to one's contributions, the user **benefits** from more direct control on their post's exposure and increased user attention. Additionally, the user is able to establish a new source of revenue.

Even at scale, the system guarantees **high attention per post.** We believe a fundamental design flaw for a microblogging platform is that the user's attention is basically free of charge. This leads to the unfavorable practice of quantity over quality and a lot of the user's attention is wasted on too much frivolous and irrelevant content. The hurdle of spending valuable crypto tokens in order to send a post filters out much of the noise and leaves more attention for the posts of real value.

Studies show that about 50 % of all posts are either pointless babble or spam. Another 6 % are self-promotion or advertising and only 4 % are actual news.

The token system also means more control for the creator to **influence exposure** by adding DROP tokens to the post, depending on how much they value their contribution. This adds a new dimension to social media because users can now differentiate between sharing a simple status update or something essential they care to share with a specific group. On traditional platforms this feature is not available for the average user but is reserved only for commercial advertisers or shady entities gaming the system. Some entities try to influence public opinion by buying likes and retweets or using automated bots to provoke user engagement. InkDrop's built-in option to influence exposure democratizes that power by giving it back to the average user.

The InkDrop **ranking mechanism** is a combination of the amount of tokens invested in the post and its time online. The more tokens, the higher it will be ranked and the longer it will stay on top. The tokens in a post are being used up as time goes by, meaning that the amount needed for a top position won't increase indefinitely.

Moreover, users have the ability to establish a **revenue stream** via likes, as they receive a share of the DROPs other users award their content with. So, if creators receive more DROP than they initially invested, they make a profit. We expand on the different ways to earn DROP tokens in the following chapter.

BENEFITS FOR THE CONSUMER

The ultimate benefit is that consumers will have a more enjoyable time catching up on the latest news and discussions. Fundamentally, the InkDrop network strives to solve (or mitigate) the consumer's dilemma of having to choose between missing something important (i.e. fear of missing out, FOMO) or being overwhelmed by content.

As described above, one can expect much of the noise of a typical feed to be filtered out, leaving a **digestible amount of content** with a more informative and entertaining value. So, the user can enjoy a more selective, higher quality newsfeed without feeling overwhelmed by too much content or feeling bored by irrelevant content. Thus, users will be able to follow more people and subscribe to more topics, creating a richer user experience.

We anticipate that users will check the latest updates more frequently and feel less anxious about missing out (i.e. fear of missing out) because other users will share more selectively. These consumer-benefits in combination with a larger selection of features to interact with the platform (see the following chapter) create a **higher user engagement** and **increase the attention per post.** Likewise, the browsing experience of such a platform will be much more interesting and engaging as the traditional network model we see today.

ASSIGNING VALUE TO A LIKE

On InkDrop we completely revolutionize the single most important feature in social media: the **like button.** Traditionally, users can express that they like, enjoy or support a certain content and the platform then aggregates the number of likes as an indicator of popularity, which implies quantity equals relevance. InkDrop members, however, are able to attach valuable DROP tokens to their likes, which adds a whole new dimension to this core feature. It allows them to express their appreciation in a more nuanced and personalized way since likes are no longer just a binary option but can be **expressed in varying degrees.**

The first decentralized microblogging platform, where the community is in control.

This turns InkDrop into a type of **crowdfunding platform** for great content, where users can decide for themselves how much of their DROPs they dedicate to the post and how much to the content creator. When addressed to the post, the DROPs become part of the post's total token balance and boost its rank. Thus, InkDrop members have a more direct **influence on the platform's content** through more effective, non-binary likes. The community can thus 'crowdfund' content that didn't start out with a top rank because of its low initial token balance. Furthermore, DROPs that are addressed directly to the content creator act as a form of donation. This creates a revenue option for content creators and thus incentivizes high quality content.

The creator can also see not just **how many** individuals liked his content but also **how much** they enjoyed it. There may be a great discrepancy in the number of likes and the extend user actually enjoyed certain content. By connecting likes to something scarce like crypto tokens, they become something of actual value.

CHANNELS / SUBSCRIPTIONS

On InkDrop, **hashtags become more effective** in streamlining content, as we categorize them into **channels.** To use a channel, users designate a certain amount of DROP depending on how highly they want their post to rank in that channel. Creators are thus encouraged to label their content more precisely and sensibly to reach their audience more directly. In turn, consumers can expect only highly relevant content categorized in each hashtag.

Economic forces will lead to a balance between higher and lower priced posts. A different price index for each channel will emerge, depending on its supply and demand (i.e. post frequency and channel popularity). Therefore, some mainstream channels will definitely emerge for higher priced contributions. But different interest groups will find their own more specific channels with lower priced contributions, similar to platforms like Reddit or 9GAG. We will go into more detail on the different use cases in chapter 4.

We expect cryptocurrency specific channels like CRYPTOCURRENCY, ICO or HODL to be some of the first channels to gain traction.

Besides following channels and other members, InkDrop users can subscribe to **private channels**. For a monthly subscription fee users get access to more exclusive content from content creators and curators. These private channels can be created by any user and are another potential revenue source for content creators and curators.

BENEFITS OF DECENTRALIZATION

The InkDrop platform takes advantage of the blockchain's highly advantageous characteristics in order to advance the social media industry. We also intend to empower the single user in terms of more transparent information, privacy, security, and utility.

ADVANCING THE CRYPTOCURRENCY ECOSYSTEM

Through InkDrop we hope to play a small role in the advancement of the cryptocurrency ecosystem. For the average person, crypto tokens are still out of the ordinary. Even though more and more join the ecosystem, acquiring your first crypto token is still fairly difficult. The burdensome process includes registering at exchanges with KYC hurdles and transferring money from a bank account to the exchanges. Through our token reward system we offer newcomers an easy way to earn their first cryptographic token without having to acquire resources from outside the InkDrop platform. This way we can introduce millions of individuals to the crypto ecosystem.

NETWORK EFFECT

„One of the most interesting questions in technology right now is about centralization vs decentralization. Like cryptocurrencies that take power from centralized systems and put it back into people's hands."

– Mark Zuckerberg

Developing a decentralized social network has the advantage that it creates attention within a very specific niche user group. This gives the platform's network effect the head start, necessary to succeed. Today, a growing part of the population is getting involved in blockchains and cryptocurrencies. There are thousands of decentralized applications that have been created or are in the pipelines. And they all want to promote their projects and ICO or broadcast breaking events in the crypto environment. So, what better place than InkDrop, to quickly find all the important crypto news and much more live.

ACCOUNTABILITY

A lot of social media platforms are currently testing verified accounts for website owners, businesses or government agencies. In the future, InkDrop will also offer the option to register with a uPort profile. As time goes on, we expect many users to freely choose this verification method to enhance their credible image, status or mitigate the risk of identity theft. Such mechanisms are a big step towards verifying the reliability of an information source. With the increasingly prominent issue of fake news, we believe that platforms like InkDrop will increase content accountability. A uPort based verification system is set to become much more fruitful than current approaches which have a number of inherent flaws.

INCORRUPTIBILITY

Another characteristic of the blockchain is its tamper proof system and protection against corruption. Apps based on a decentralized network make censorship virtually impossible and uphold the platform's integrity.

SECURITY

InkDrop offers users a private platform designed with a high level of security as a major priority. Today's communication platforms built on centralized private servers are only as secure as their weakest defence and are susceptible to being hacked. Because InkDrop is a decentralized application that runs on the blockchain, it is highly secure by nature and provides encrypted messaging by default. It, therefore, has a stronger network security than private systems that have a single point of failure.

PRIVACY

„There are clear global benefits to cryptocurrencies. And great services and businesses will be built upon them. Just a matter of time."

– Jack Dorsey

InkDrop gives ownership of personal data back to the user. Traditional social media business models are based on selling behavioral data to advertisers, being in a continuous conflict with user privacy. A redesigned monetization strategy enables InkDrop to increase user privacy without depending on the user's behavioral data. Even though, the user's data is public and transparent, they benefit from privacy through pseudonymity, meaning their real identity can't be associated with their blockchain address.

IMMUTABILITY

All too often individuals manipulate our collective memory by deleting their posts from the timeline such as when President Trump's Twitter account deleted any trace of support for Senator Luther Strange. The benefit of a blockchain based social network is all data is stored in a decentralized manner that is public, transparent and immutable. The blockchain's decentralized consensus mechanism ensures its integrity and the validity of the events that occur on it. So, make your mark on an immutable timeline.

AVAILABILITY / RELIABILITY

Building InkDrop on the blockchain, sets the network up for a high level of availability at minimal cost. Even today, major social networks built on private servers suffer from outages (e.g. Twitter's infamous „fail whale" outages). A platform that runs on a decentralized network provides much stronger security than a private system with a single point of failure.

3. CHAPTER – TOKEN REWARD SYSTEM

The next-gen social network that pays its community.

A carefully balanced Token Reward System (TRS), based on game theoretic principles, aligns various incentives on the InkDrop platform. The InkDrop ecosystem is designed to be self-correcting by rewarding positive behavior for both content creators and consumers and discouraging negative contributions (i.e. trolls or automated bots). To guarantee easy network access, the incentive system allows users to attain a positive token balance simply by being active on InkDrop. This way less affluent users have access to the same premium services through positive participation.

MECHANICS FOR CONTENT QUALITY & DISCOVERY

We **promote high quality content** by giving creators the opportunity to generate revenue for their contributions. The crowd can express their appreciation through DROP donations. Users can give these donations by liking posts and attaching DROP tokens to their likes.

We **discourage less valuable content** such as pointless babble and spam. Due to the pay-per-post model, creators will be encouraged to only post when they have something valuable to share. This process optimizes the user's feed by minimizing the amount of frivolous content which makes for a richer user experience. Consumers can follow more people and subscribe to more channels without being overwhelmed by trivial posts.

Besides posting something on the general timeline or the public channels, users also have a third option, i.e. private channels. Creators can open a private channel to offer exclusive content and collect a monthly fee from its subscribers. This **encourages content curation and distribution** concerning a specific topic and incentivize sharing of valuable information with an **exclusive audience.**

LIKING PROCESS

- Alice (consumer) enjoys the content or finds its message important.
- She sends a valuable like and decides:
  - if the tokens shall go to the post's balance (improving its rank), the content creator (as a donation), or both.
  - how many DROP tokens to attach to her like.
- Bob (creator) then receives a share of these tokens.

MECHANICS FOR A HEALTHY ECOSYSTEM

You Care. We Reward.

We are aware that a service like InkDrop will attract individuals that intend to misuse its attention generating capacity to influence public opinion or harass other users. However, our TRS is designed to discourage such practices that are endemic to social media today. Moreover, **economic incentives** (described below) will motivate users to actively help keep the network on its initial course.

InkDrop strives to create an environment where individuals can feel free to express themselves. Hence, any abusive behavior like harassment or intimidations are to be prevented or at least responded to. In fact, up to 50 % of Facebook's workforce help mitigate its problem of too much non-compliant content. We believe that the community is able to regulate itself by providing the right incentives. Through a system we coined **„Proof-of-Care“,** the crowd is given the **power to moderate** the site in exchange for DROP tokens. Proof-of-Care is based on Vitalik Buterin's SchellingCoin approach and encourages the user to give their most objective opinion about a post's compliance with the network's terms of service. When enough people vote on the non-conformity of the post and reach a consensus, the post gets deleted and the users are rewarded.

Thus, **a troll's illicit activities are discouraged** since they will become immensely expensive. After a post is being found non-compliant, the invested DROP tokens will go to the incentive pool that rewards positive contributions. Furthermore, after three violations, the troll's entire deposit will be confiscated and the account blocked from the network.

Two major threats to the whole social media ecosystem are automated accounts and institutions that buy likes and retweets. Both attempt to manipulate the system by affecting public opinion. InkDrop democratizes the **power to influence network** exposure by enabling every user to do so. This causes a power equilibrium and an unprecedented level of transparency for a social network. Although, gaming the system is not entirely impossible, the bad actors

now compete on a free market with millions of other users. Operating thousands or millions of bots that like, share or post content becomes exponentially more expensive.

PROOF-OF-CARE PROCESS

- Alice notices a non-compliant post or feels harassed by it.
- She marks the post and puts a defined amount of DROP tokens in escrow.
- The post is put up for review by the community.
  - A random set of reviewers is being chosen, based on the degrees of separation from the member to impede any collusion efforts.
  - Bob, as one of the reviewers, can stake the same amount of token in escrow and vote on the post's conformity.
- Alice and other honest reviewers in consensus are rewarded with the tokens in escrow.
- Reviewers against consensus lose the tokens they put in escrow.
- The tokens invested in the non-compliant post prior to the vote, are partly being paid-out to Alice and the honest reviewer and party added to the incentive pool.

The more tokens users put into escrow, **the faster** it will get voted on. Users will be more inclined to participate if it promises a higher pay-out. After review in Alice's favor, she gets her tokens in escrow back plus the proceeds from the vote (i.e. a share of the DROP tokens in escrow from dishonest voters, DROPs in the post balance, and the incentive pool).

Constant misconduct, be by way of marking compliant content or by voting in a dishonest way, is being penalized with a loss of tokens. This solves the nothing at stake problem. The penalty is the user's tokens in escrow as well as a percentage of the user's total token balance.

Repeat offenders with a history of posting non-compliant content, are at risk of getting blocked and having their invested tokens as well as their total token balance being transferred to incentive pool. This maximum penalty effectively helps against users violating the terms of service.

GAME THEORETIC OUTCOME

Normal Game	user votes 'compliant'	user votes 'non-compliant'
others vote 'compliant'	+ P	– I
others vote 'non-compliant'	– I	+ P

I: Investment in escrow, P: Pay-out (= escrow, post balance, and incentive pool)

For this prediction market like system, game theory dictates that users will provide **their most honest and objective opinion,** thus ensuring the network's integrity and enforcement of its terms of service

Rigged Game	user votes honestly	user votes dishonestly
others vote honestly	P	ε – I
Randomization makes collusion impossible. User has to assume others vote honestly.		

ε: Bribe

Even in a **rigged game situation,** where the user gets bribed to vote dishonest, the Proof-of-Care mechanism is strong enough to produce an objective outcome. Since it's impossible to know who is eligible to vote beforehand, there is little chance every voter gets bribed for the same vote. Moreover, the user who accepts the bribe will still miss out on the payout and loose the participation investment. Thus, bribery to incentivize dishonesty becomes extremely costly ($\varepsilon > P+I$) and leaves the user at risk of becoming a repeat offender.

TOKEN ECOSYSTEM

The InkDrop token ecosystem is designed to **fairly distribute the tokens** in circulation, without favoring any particular group of people. At the same time, it incentivizes certain actions and rewards positive platform behavior.

Users in need for DROP tokens will be able to either earn them through platform participation or purchase them on an exchange. If no public exchange is available, the platform administrators may directly sell DROP tokens.

The token rewards for positive network participation will be paid out to the member by the incentive pool. The incentive pool will be refilled by 50 % the tokens used for platform services. The other half of these tokens will go into the operations fund, which pays for the maintenance and administration of the platform.

The funds received from the direct sale of DROP tokens will be used to pay for platform development and marketing activities. The model described above is an indicative distribution system, and InkDrop reserves the right to update the numbers presented here at a later stage of the development.

WHY DO WE NEED AN APPCOIN

There are several reasons why we believe in the necessity of an appcoin for the InkDrop platform (i.e. DROP token).

As a **utility token,** DROPs play an integral part in the InkDrop's user experience so members can take full advantage of the platform's functionalities. Since the InkDrop features rely on exchange units that possess actual value, crypto tokens are a sensible solution, making decentralized transactions simple and fast. Thus, facilitating the usage of DROPs to post, like or moderate on InkDrop. Furthermore, do we leverage the DROP token to encourage user participation and the creation of valuable content.

Additionally, we get a simple and **universal measure of value** across the platform and every channel. Using, for example, Ether to denominate interactions can unbalance the platform's ecosystem due to fluctuation of the currency, for reasons unrelated to InkDrop. That way we benefit from the DROP token being more directly connected to the applications it's built into.

4. CHAPTER – WAYS TO EXPERIENCE INKDROP

InkDrop – the most rewarding place to see what's happening in the world.

Hashtags have become an ubiquitous tagging convention that helps to associate messages with certain events or contexts and coordinate discussions between more or less large user groups. InkDrop gives hashtags an even deeper meaning and are referred to as channels. The creator spends extra DROP tokens to appear at the top of a certain channel, with the price being dependent on the hashtag's popularity. **Economic dynamics** will lead to a balance between higher and lower priced posts. Different price indices will emerge, depending on supply and demand i. e. popularity of the channel or user group you address and the frequency of posts for that interest group.

There are **three main types** of channels that we expect will emerge on InkDrop: Commercial, Live News and Special Interest. These channel categories are not clear cut and large grey areas exist between them. Nevertheless, there are certain aspects that characterize each of them.

In each of the following channel categories **DROP tokens can be leveraged** to incentivize positive user behavior for both content creators and consumers. Besides using DROP for high exposure, one can even imagine supporters sending donations to an appeal for funds or other causes, by sending DROPs directly to a creator through their likes.

ANNOUNCEMENTS

One of the major use cases for a real-time news platform are commercially oriented posts. Popular hashtags in this domain are **not contributed by the crowd** but by a few authors. Today, many of these authors are automated agents who publish advertisements or news publishers, who post news all day.

Some **typical hashtags** for this category, for example, by news sources and include #news, #usa and #syria. Other examples for this category are #property or #praytweets.

Channels like this will be used to make big announcements or to advertise one's own company or project. The post **frequency will be lower but at a higher price,** since the publishers would want to appear on **top for a as long as possible.**

LIVE NEWS

One major benefit of a platform like InkDrop is being delivered through live or breaking news (e.g. politics, sport). Hashtags with respect to such events are usually very unstable with unexpected changes of frequencies. The hashtag #sopa („Stop Online Piracy Act"), for example, exhibited a small ongoing discussion with a great peak just before the act was voted on. These posts are usually extremely **relevant** and thus very **valuable.**

For this channel category we anticipate a lot of **crowdfunded** posts. Even though a post is of high relevance for a specific event, its creator may not have the funds for high initial exposure. However, as such topics are typically very engaging, other users will be more willing to support a certain opinion or an important information. We therefore predict a **higher post frequency for a medium to high price.**

SPECIAL INTERESTS

Creators use hashtags as a means to have conversations with strangers in various small and large groups of users with similar interests. The indicated topics often don't involve a specific time period, location or people, thus, are **not necessarily related to any specific events.** They can take the form of a persistent discussion or a meme that quickly rises in popularity, often more popular than most other hashtags, but die out soon.

Included in these categories are hashtags like #ff („Follow Friday"), #nowplaying (music a user is playing), #iaintafraidtosay, #cantlivewithout, #factsaboutme or #foramilliondollars. Memes like that successfully attract user attention because of their **entertaining nature,** but are less important for discovering breaking events.

Users typically just want to share their personal feelings and don't care too much about long exposure. It can therefore be expected that these channels will operate on **higher frequencies but for a lower price.**

OVERLAPS

The three types of use cases are not definitive and grey areas exist between them. For example, between the channels Commercial and Special Interest we

can expect some event initiated by a company that goes (maybe unintentionally) viral within a certain community (e.g. #McDStories).

Additionally, we have the area in the middle where all categories overlap, i.e. the **general timeline.** Since the top post outranks every other contribution on the platform, this can be considered as the premium position, where only the most popular posts will appear. This position is for extraordinary posts the creator or the crowd considers very valuable.

Besides some companies using this as a way to advertise, this position may also be taken by posts about sudden and important events (e.g. #cafire or #PeoplesClimate) or extremely viral memes. Naturally, the **frequency and price will be very high** for posts on the general timeline.

Overall, we anticipate the emergence of higher priced mainstream channels. But similar to platforms like Reddit different interest groups will find their own more specific channels, sometimes as a result of pre-planning or quickly reached consensus. Prices for posts in these channels will be comparably low and in accordance with their specific budget.

PRIVATE CHANNELS

On InkDrop, private channels play a special role in **promoting and compensating valuable content.** Creators and curators can establish private channels for exclusive or well organized content concerning specific topics.

Through private channels **creators** can share their content with a more exclusive audience. This feature is meant to empower users to make a profit from their passion and drive. Moreover, **curators** can make a living by successfully distributing user generated content either by reproducing part of the original content and linking to the entire post. We believe that with today's information explosion curating and promoting quality content is just as valuable as the content creation itself.

We expected this feature to be especially popular with bloggers or independent journalists who today struggle to monetize their content. One example may be Pinterest thread owners wanting to profitably share their ideas and inspirations without the need to sell any specific product. Also, expert practitioners or managers wanting to share premium advice and valuable insights with relevant audiences, like exclusive news on cryptocurrencies. This can, for example, be realized like a subscription news service, solving the age old problem of monetizing user generated content.

5. CHAPTER – INKDROP DEVELOPMENT ROADMAP

ROADMAP

We are developing InkDrop for over one year starting at the beginning of 2017. We will further **co-develop** the service with the InkDrop community and incorporate their feedback. More features, not mentioned here, may be added throughout the development of the platform. To stay updated on our development progress and added features, please follow our social media channels or subscribe to the InkDrop newsletter.

- **Early Days - 2017:**
  Q1: Idea formation
  Q3: Starting out as Opinio.com
  Q4: Rebranding into InkDrop

- **InkDrop 0.1 - BETA:**
  Web app with basic features: user profiles, main timeline, posting (text), follow people, subscribe to channels, crypto likes, DROP based ranking

- **InkDrop 1.0 - ESSENTIAL:**
  Security audits, personal timelines, commenting, private channels, PoC (marking & voting), mobile app

- **InkDrop 2.0 - INTERACTIVE:**
  Posting pictures & videos, colored text backgrounds, instant messaging, public APIs

- **InkDrop 3.0 - UNCOMPROMISING:**
  Live Video, send token via instant messaging, uPort verification option, embeddable widgets

- **What else?**
  Expand our presence in Berlin with an office in the WeWork coworking space at Potsdamer Platz

CHALLENGES

COMPETITION

To better assess how our service benchmarks against comparable blockchain based social networks, the following competitor analysis has been conducted.

	InkDrop	Steemit	Fucktoken	Mercury Protocol	Twitter
Actual social network (not a layer)	✓	✓	✗	✗	✓
Microblogging platform	✓	✗	✗	✗	✓
Boost own network exposure	✓	✗	✗	✓*	✗
Valuable crypto likes	✓	✓	✓	✓*	✗
Monetize quality content	✓	✓	✗	✓*	✗
Monetize participation / care	✓	✗	✗	✓*	✗
Monetize content curation	✓	✗	✗	✓*	✗
Monetize exclusive content	✓	✗	✗	✓*	✗
Benefits of decentralization	✓	✗	✗	✓*	✗

**(not yet implemented)*

As of today, a handful of a decentralized social networks have been conceptualized or developed. We, however, found that none of them offer a true utility token with innovative and useful features for a specific social network. **InkDrop uniquely utilizes crypto tokens** as a means to enable social media features that just were not possible or feasible before. Thus, creating a self-correcting ecosystem that produces high quality user generated content, less frivolous noise or network abuse, as well as more engaged users.

Moreover, a lot of our competitors do not offer an actual social network service but rather a protocol, to integrate into another or not yet existing social networks. We are convinced that for a successful **token adoption** it is necessary to develop the protocol as well as an applicable use case.

Twitter's success had revealed the user's need for a social network with a focus on exchange of information, ideas and opinions. We are convinced that a revolutionary new technology like blockchain has the power to dramatically

improve traditional centralized network models. Not only in terms of security, privacy, reliability, and incorruptibility but also through novel features like influencing exposure, assigning value to a like, monetizing content and participation, or network immutability.

USER SCALABILITY (NETWORK EFFECT)

We are cognizant of the fact that, as a new social network, we will be faced with the difficult challenge of acquiring users. This is due to 1) new users missing their friends and 2) users having to adjust to a new interface.

Firstly, as a microblogging social network we see ourselves in a favorable situation. Relationships on networks like Twitter primarily rest on information exchange rather than friendship. This removes the pressure of having to have all of your friends on the network before you would consider to join.

Moreover, the decentralized nature of InkDrop connects us to various blockchain communities, which we see as a natural starting point to kickstart a network effect in an initial niche market. We believe that the crypto world is full of breaking news and shareworthy content people would like to support or are willing to pay extra to get exclusive information.

Secondly, at the risk of coming off as pretentious, we honestly don't see the Twitter user experience and interface as too big of a challenge. In fact, more often than not we read about that users are still having a difficult time figuring out the service as it is. We at InkDrop are more than willing to learn from their mistakes.

Yet, the fact that the service is based on crypto tokens is a potentially impeding factor for user growth, since it is still a hassle for beginners to acquire tokens from exchanges. At InkDrop we try to lower that entry barrier by enabling new users to gain DROP tokens only through participation in the network.

Additionally, we further lower said entry barrier through promotional activities. These promotions incentivize account creation and network participation in order to kickstarting an initial network effect. We are confident that we have the right niche market and features in place to establish a sustainable user growth rate.

6. CHAPTER – CORE TEAM AND ADVISORS

CORE TEAM

The InkDrop team is made of professionals with extensive experience in bootstrapping startups, cryptocurrencies, and social media. Furthermore, we get investment, legal and regulatory advice from our partners and investors.

TOBIAS SCHODER

Tobias is COO at InkDrop overseeing operations, partnerships, and strategy driving the project's vision. After receiving his master's degrees from TU Berlin & UT Twente, he began as a technology consultant for international top tier companies, before directly implementing innovations within the Volkswagen Group. His knowledge includes the development and implementation of digital business model innovations. Besides his practical experience in digital innovation, Tobias gathered academic expertise in the field through his research at the Hasso Plattner Institute and published the results in Springer, a leading global science publisher. He is an active member of the Crypto Valley Association, loves to blog about disrupting technologies, and practices Muay Thai.

MICHAEL KASERER

Michael is CTO at InkDrop, in charge of the InkDrop platform core development including smart contract development, security, and integration of InkDrop's libraries and services. After his bachelor in computer science and a stint as web developer, he graduated from Europe's top technical universities (TU Berlin & UT Twente) with two Master of Science degrees. He then took on the role as CTO of a high growth food startup in Berlin, where he focused on scaling system architectures and business intelligence. When not writing lines of code or trading cryptocurrencies he spends his time climbing in the boulder hall or in the Alps.

TORBEN WOLLSCHLÄGER

Torben is CDO at InkDrop and responsible for creating the user interface as well as the user experience. He has 10+ years of experience as a Creative Director at a renowned design and ad agency, responsible for UX and web design. He virtually lives and breathes creativity and has a great vision for social media design. When not using his right side of the brain Torben destroys dreams playing professional Counter Strike GO.

CHRISTIAN KAUFELD

Christian is CMO at InkDrop, responsible for user acquisition, PR and establishing InkDrop as the top of mind social coin. He is experienced in growth marketing and founded a successful performance marketing agency. As a passionate growth hacker he consults brands like Red Bull, TrackR, and Airbnb and travels the world as a digital nomad.

ADVISORS

CHRISTOPH NEYE

Christoph is a Berlin based serial entrepreneur with a great understanding of bootstrapping a startup. As a former manager at StudiVZ (Europe's former largest social network with 16mio users), he also contributes invaluable insights on how to successfully run a social network.

STRATEGIC ADVISORS

CRYPTO VALLEY

The Crypto Valley Association is an independent, government-supported non-profit organization, that fosters blockchain and cryptographic technology innovation by supporting and connecting startups and established enterprises, policy recommendations, projects across verticals, initiating and enabling research, and organizing industry events. Located in Zug, Switzerland the CVA community counts among its members early pioneers like Monetas, Ethereum, and Bitcoin Suisse.

7. CHAPTER – LEGAL IMPLICATIONS / RISKS

DISCLAIMER

THIS DOES NOT CONSTITUTE AND IS NOT INTENDED TO BE AN OFFER OF SECURITIES OR ANY OTHER FINANCIAL OR INVESTMENT INSTRUMENT IN ANY JURISDICTION

WE, TOBIAS SCHODER AND MICHAEL KASERER, DO NOT REPRESENT THAT THIS WHITE PAPER DISCLOSES ALL RISKS AND OTHER SIGNIFICANT ASPECTS ASSOCIATED WITH DROP TOKENS AND / OR THE INKDROP PLATFORM

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Version 0.9, 06.03.2018 – This is a draft of the InkDrop White Paper and still subject to change.