contentos

The Decentralized Global Content Ecosystem

Abstract

Contentos is a blockchain protocol that aims to form the foundation for a decentralized digital content ecosystem that empowers all members, including creators, consumers, and advertisers, to earn fair compensation for their contributions. Contentos also intends to establish itself as the future Ethereum of digital content, accepting content DApps of all kinds.

Social media offers the opportunity for every user to have a platform dedicated to the promotion of their individual visions of the world at large. The current content ecosystem is run by centralized platforms that depend on advertising for revenue. Content creators are, therefore, pressured to produce content that is approved by advertisers instead of following their creative muses and expressing themselves freely. The constraints inherent to ad–driven content platforms begs the question of just how much freedom of expression is actually allowable. Are these individual influencer world views being traded in for carefully–crafted sponsored content for the masses? Furthermore, when looking at the bottom line, it's imperative to ask the question, where is the majority of the money going? In the current content system, corporate platforms reap the lion's share of rewards generated by ad dollars, leaving mere pennies to the influencers whose content the platforms depend on. These tech giants tempt content creators with promises of viable income while exploiting their creations for their own gain. In this model, creators and users lose while the tech platforms flourish at their expense.

At Contentos, we believe all members of the content ecosystem should benefit from their contributions. By utilizing the tokenization enabled by blockchain technology, Contentos aims to bring to life the dream of a more fair and democratic content environment. Content creation, curation, distribution, storage, and verification are all rewarded in COS tokens, the unique cryptocurrency powering the Contentos ecosystem.

contentos | White paper

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Digital content industry: present & future

With the development of the global mobile internet and widespread use of smart devices, a huge amount of digital content is now being produced in the context of text, image, video and audio. Global advertising revenue in 2017 reached USD $530 billion, while the content industry generated significant revenue of $77.4 billion in China. This content and traffic generated by billions of global internet users have led to the rise of internet giants such as Facebook, YouTube and Twitter. These corporations control the access and distribution of digital content, as well as revenue allocation.

Mobile video has experienced rapid growth in recent years with trends toward increasingly fragmented, mobile–centric, and long–tail content. In 2017, video traffic accounted for 55% of global mobile internet traffic. It is expected to reach 79% in 2020. Mobile data traffic will increase by seven–fold between 2015 and 2020. Mobile video will become the mainstream information carrier in the near future.

Video Share in Global Internet Traffic
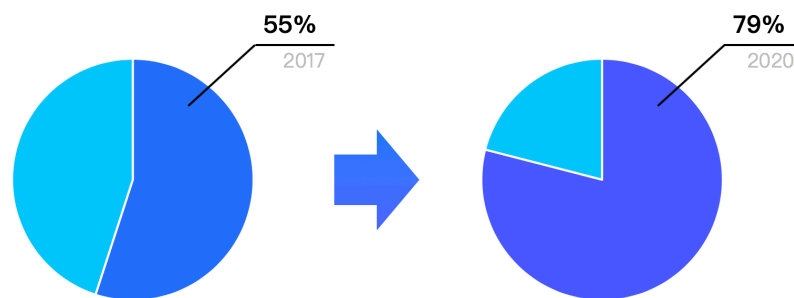
(Data sources: Cisco Study, Nielsen, Strategy Analytics, Realceo)

In 2016, total mobile video advertising revenue was approximately $8.3 billion USD. With the increase in user penetration rate, it is expected to increase by 49% in 2018, reaching nearly $18 billion USD. In addition, according to Blue Lotus Capital Advisors Limited, short video will become one of the dominant forms of content on mobile internet, expected to generate $10 billion USD in ad revenue in 2020.

Statistics issued by CNNIC indicated that, as of December 2016, among 730 million internet users in China, 344 million of them were live streaming app users, with penetration rate reaching 47.1% and the market cap exceeding USD $10 billion. We can infer that, among 3.8 billion internet users worldwide, 1.7 billion of them may be global live video viewers. In addition to the revenue earned by the mega–cap internet companies that provide live streaming services, such as Facebook, YouTube, YY, and MOMO, broadcasters themselves also earn a considerable amount. According to the Top–Earning

YouTube Stars published by Forbes, the annual income of broadcasters listed exceed USD $10 million; some can earn up to USD $16.5 million.

Though enormous advertising earnings can be generated and highly centralized content platforms can be accessed in the digital content industry, it has long suffered from unequal revenue distribution and a lack of copyright protection. The digital creative community needs a more open and transparent distribution model to protect user interests. The aim of Contentos is to penetrate the mobile video sector, including but not limited to live streaming and short videos, in order to develop a novel digital content ecosystem that empowers all members of the global digital content ecosystem.

What is Contentos?

Vision

The vision of Contentos is to build a decentralized, global digital content community that allows content to be freely produced, distributed, rewarded, and traded, while protecting author rights. Contentos will incentivize content creation and global diversity and return the rights and value of content to its users. Contentos will be a public content protocol that not only carries content and advertising value but is also a memory chain recording each user's contributions.

Infrastructure

Decentralized digital content system

The Contentos protocol aims to build a globally-distributed content incentive and distribution system through utilizing blockchain technology distributed storage capabilities. The protocol will enable content creators to earn revenue without depending on centralized platforms; instead, digital content can be freely produced, stored, and distributed to reach consumers and advertisers directly. This results in a situation where value is fairly measured, and prices are open and transparent. The Contentos ecosystem will include systems for content distribution, copyright registration, creator certification, along with social features such as likes, shares, and comments.

The transaction and financial system

COS will be the Contentos in-ecosystem cryptocurrency used to reward positive contributions and to pay for services within the network. Smart contracts will automatically execute transaction payments and the distribution of rewards without the participation of a third-party intermediary.

Core values

The Contentos system abides by the following core values:

- Open and transparent pricing that benefits all parties
- Content creators maintain ownership of their content
- Content creators hold preferential revenue rights
- All forms of contribution can be quantified and rewarded

Contentos is run by a nonprofit foundation and its fundamental objective is to serve the public. This maximizes the value of content creators and system participants and allows all participants to benefit from the prosperity and growth of the ecosystem.

Unique, blockchain–based content creation business model

Intelligent content advertising: Smart contracts are used to facilitate advertiser payments to creators. Rewards are automatically distributed to the creator based on viewership and interaction data. A creator and advertiser can make agreements for additional compensation, or bonus incentives, if work exceeds expected results.

Direct value exchange: Users can pay creators directly through subscriptions, donations or virtual gifts, all executed automatically utilizing smart contracts. For example, creators can create exclusive content that can only be viewed a fixed number of times for subscribers. Through this type of empowerment, creators can more easily grow their viewer base, develop loyal followings, and increase their revenue.

Content selling: Contentos enables the sale of content within the platform between creators. For instance, a video creator may publish a soundtrack request and allow music creators to bid for involvement, just as a music producer may publish a 15–second soundtrack for purchase and use by a video creator. Profit sharing may also be achieved through smart contracts. Since all transactions are transparent, every creator understands his/her unique value within the ecosystem.

# How does Contentos solve the problems in the industry?

Unverifiable digital assets

Problem: In the current digital content ecosystem, it is difficult to validate the copyright of digital assets, as it is not easy to trace the flow of copyright information across multiple independent platforms. Unfortunately, these challenges lead to frequent copyright disputes, especially for derivative works.

Contentos' solution: Verification, trade, and storage of non–physical property rights through the Contentos protocol will enable quick and comprehensive access to copyright information. Trade flows and derivative works will be recorded permanently on the blockchain. Content creators will register their copyright and provide original content statements, authenticated, and traced with time stamps.

Non–transparent industry pricing and uneven revenue distribution

Problem: On centralized platforms, creators are pushed to the industry sideline and cannot reach consumers and advertisers directly. What's more, the content and advertising pricing is not publicly disclosed, resulting in a lack of transparency that disempowers creators. Payment channels and platforms take a huge portion of users' income, while advertising revenue is centrally–controlled by platforms, with only a small portion of it going back to content creators.
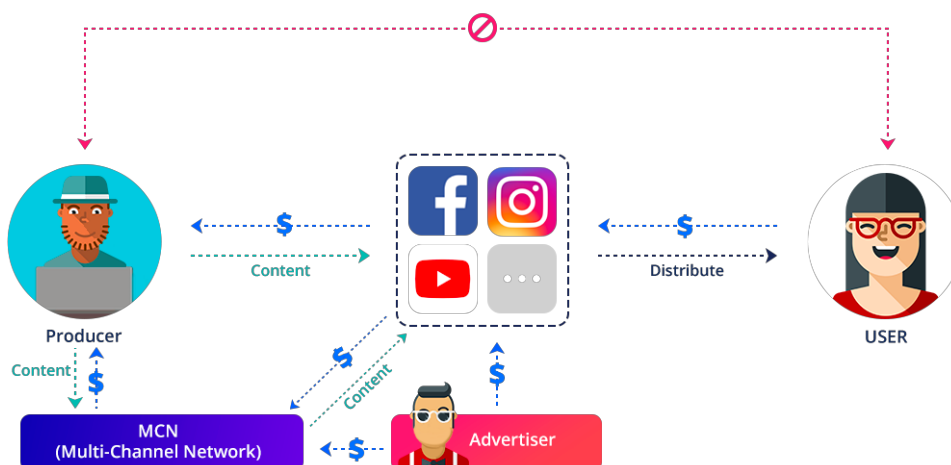
Contentos' solution: Decentralized distribution of revenue

In the Contentos ecosystem, pricing is transparent with the value of any contribution determined by artificial intelligence–based algorithms and recorded on the blockchain as public record.

User's true interest cannot be satisfied with current social platform algorithm

Problem: Centralized platforms distribute traffic based on revenue drivers, a system which fails to offer a full picture of the value of content created by influencers. Because centralized platforms depend on ad revenue for survival, the creators that contribute most to advertising ROI are rewarded handsomely while emerging creators are ignored. Such a system leads to homogenization and lower quality content.

Contentos' solution: Decentralized traffic distribution

The Contentos protocol decentralizes the distribution of traffic, thereby forming the foundation for a more democratic content ecosystem that supports emerging creators in finding and building an audience.

Beyond rewarding influencers for creating great content, the Contentos ecosystem also rewards any participant who positively contributes to the health of the network. These participants include professional distributors, community operators, and ordinary user distributors.

Operators can categorize, label, and review content. Larger numbers of operators will eventually produce more objective and accurate descriptions and reviews of content. At this point Contentos will use artificial intelligence to personalize matches between content and users.

Professional distributors will also match and distribute content to target audiences. By liking, commenting, sharing, and engaging in other social behaviors in the ecosystem, distributors can earn rewards for driving traffic to content.

Flawed credit system

Problem: User engagement data in centralized ecosystems are not transparent. Users are not held accountable for fake comments causing the credibility of the rating system to gradually decline.

Violations and poor behaviors are often not tracked across platforms, and errant users are rarely penalized for their actions.

Contentos' solution: Immutable credit system

In the Contentos system, the interaction log cannot be tampered with, and so each user is held responsible for his or her own behavior. User credit will be based upon the quality of content, trustworthiness of user selections, and other relevant records. All revenue calculation algorithms in the ecosystem will incorporate this credit score. Users can improve their credit scores through demonstrating positive and honest behaviors, thereby earning more revenue and increasing their credibility. In this way, users collectively build a reliable, self–sustaining review system.

Roadmap

2018/05 ◯ Initial preparation and development

- Nonprofit organization registration
- Market analysis and research
- Blockchain technology research
- Content blockchain design
- Ecological operation model design

2018/07 ◯ Building a creator community from 0 to 100,000,000+

- Build Contentos creator community
- LiveMe / Cheez / PhotoGrid trial integration
- User education of blockchain / token
- Prepare Contentos development testing net ("Alpha–testing")

2019/01 ◯ Compatibility development

- Develop the testing net to be:
  - Compatible with live streaming apps
  - Compatible with video related apps
  - Compatible with photo related apps

2019/05 ◯ Continue growing a massive collection of global creators

- Based on integrated apps and development testing net:
  - Attract / recruit global creators
  - CET related feature development

2019/09 ◯ Engaged, thriving digital content ecosystem

- Launch Contentos production net v1.0
- Support app building and development
- Gradually adapt major digital content platforms

# Contentos public blockchain technical architecture

Design concept

1. Contentos supports the distribution of personal digital token assets. Every user may customize their own incentive system to encourage sharing and collaboration.

2. The Contentos team will design cross–link mechanisms for research and development. Currently, many decentralized content communities maintain ecosystems of their own. The Contentos team is dedicated to converging all ecosystems into one and enabling all content communities to interoperate.

3. Contentos will operate inter–blockchain technology on a sidechain while maintaining the original mechanism on its main chain.

4. Currently, the overall blockchain capacity is not suitable for streaming video–related processing and is only capable of simple data storage. Thus, the underlying Contentos blockchain will converge with IPFS–related features to ensure that data is actually stored on the block.

5. With a decentralized digital content community for individuals, teams, and businesses that utilize the Contentos public blockchain, Contentos will provide developers with open access to app development for the Contentos public chain and partner with them to create a robust three–dimensional ecosystem.

Core Features

1. Identity authentication: The identity information of every user is recorded in the public chain, and the credibility level of every user is transparent. Identity authentication can span all content communities and products built on the Contentos Public Chain. Even if a community or product is discontinued, authenticated identities will not disappear.

2. Content copyright: The Contentos Public Chain fully records the generation time and transaction time of each creation. Any community user can query the ownership and complete transaction records of every creation through the Contentos open query interface.

3. User credibility: The user credibility system records all evaluation information a user receives on the Contentos Public Chain. The evaluation information and the associated user identity is persistently and irreversibly kept in the Contentos Public Chain, thereby holding all users accountable for their behaviors.

4. Smart contracts: The public chain supports a smart contract mechanism run in the CVM (Contentos Virtual Machine).

5. Storage mechanism: As the technology matures, the Contentos public blockchain will also selectively support upper layer community/product development, directly storing content in specific formats once COS (our native token) is paid.

Technical architecture
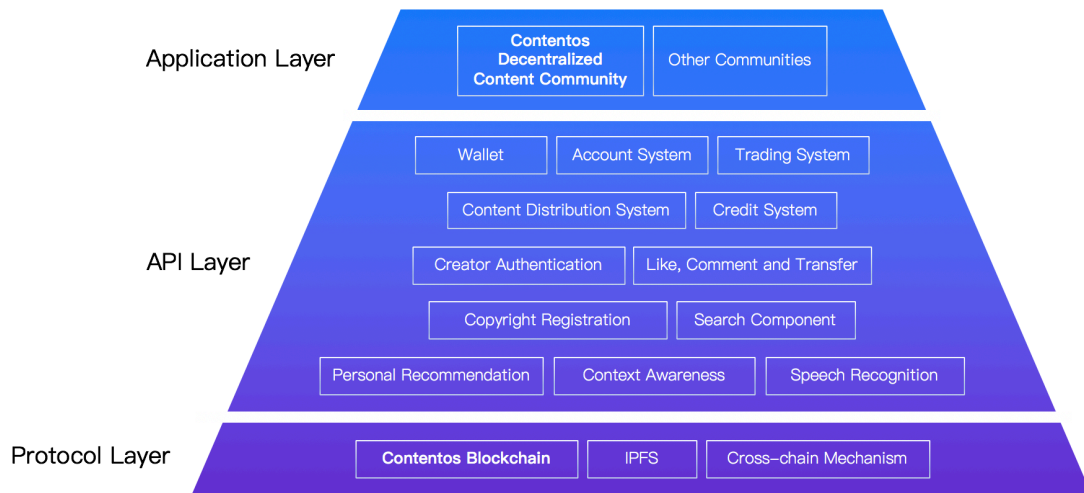
Contentos' technology architecture comprises three layers: the protocol, business, and application layer.

Foundation layer (protocol layer)

Contentos proposes an "Ethereum + IPFS + cross-chain" complementarity, as well as increasing the properties of the side chain to cross-chain the other public chains.

At the status level, content as a blockchain asset cannot be circulated. For example, content from Steem cannot be circulated to other content communities, so Contentos shall adopt sidechain and cross-chain technologies, allowing digital content from different chains to circulate. Contentos will be customized for Ethereum-based infrastructure and will draw from Ethereum's excellent infrastructure design to make use of various benefits for developer community advocates.

Business layer (API layer)

The business layer shall adopt the form of blockchain + artificial intelligence audits. In addition to artificial intelligence audits, communities will reward users for content reviews. Contentos shall provide developers with useful development interfaces, so as to provide better DApps for the entire ecosystem.

Application layer

Content communities based on Contentos content chains will develop through packaged business layer APIs. Contentos shall package various components and extensions developed by developers so as to establish and serve the entire community.

Contentos' internal operations

The main token of Contentos: COS

COS is the native token of the Contentos system. COS has more than 100 million potential cold-start users worldwide (refer to Investors and Strategic Partners). 10 billion COS tokens will be issued, which are ERC-20 Token Standard tokens based on the Ethereum protocol. After the release of the native COS token, the exchange rate will be 1:1 (ERC-20 COS token: native COS token). The ecological reward, which constitutes 35% of the total COS token supply, will gradually be released across 12 years. The total COS token supply will remain constant during this 12-year period. Only after the ecological reward has been released completely can BP vote to issue extra tokens, if required by ecosystem development needs then.

Issuance

Private sales rounds will account for 30%, which will be distributed among investors and consultants. The fund reserve is designated at 10%, and the founding team at 15%. 40% will be allocated for ecosystem operations and user rewards, and the remaining 5% will go toward the community's cooperative activities.

Percentage	Quantity	Purpose
30%	3 bn	Private sales (investors and advisors)
10%	1 bn	Foundation reserves
15%	1.5 bn	Held by the founding team
40%	4 bn	Ecosystem operations (with token mining*)
5%	0.5 bn	Communities' cooperative activities

*Token mining: In terms of the circulation of COS tokens, the 4 billion tokens for ecosystem operations do not participate in any type of circulation in the early stage but are allocated as rewards to content creators and miners. According to the number of users, these rewards are divided into 12 years and gradually released. (For details on the release of tokens for ecosystem operations, please refer to the "Ecological operation reward model" and the "Kick-start reward strategy")

Plan for use of fund raised

70% of the funds raised will be used by Contentos for research and development; 20% will be used for publicity and promotion, and 10% will be kept as reserves.

Tokens for ecosystem operations

To quickly establish the ecosystem during the initial stage and encourage early user adoption, COS tokens will be used to kickstart the ecosystem and reward the contributions made by content creators and users. Users engaging in malicious behaviors will be disqualified from earning rewards. Additionally, in order to promote a certain level of positive engagement, users will need to achieve a minimum credit rating in order to claim their rewards (See "Contentos credit system"). The number of COS tokens users hold determines the final share of rewards distributed to their accounts. Once a sizable user-base is established, users will be able to provide services to earn tokens.

Ecological operation reward model

The 4 billion tokens (i.e. 40% of the total supply) that are allocated for ecosystem operations can be divided into two parts: 3.5 billion is the regular reward to encourage users to participate in the Contentos content ecosystem. 500 million is the kick-start reward, providing the certified DApp developers with rewards for calling users to join Contentos ecosystem.

The total number of regular reward tokens is 3.5 billion (i.e. 35% of the total supply), which will be released in 12 years. The annual release amount will increase based on the total number of Contentos users. In the first year, 0.448% of all tokens will be released, and the amount will increase linearly year by year until the release of 5.432% in the 12th year. The gradual release of tokens with reference to user growth will help to stabilize the price of tokens and grant appropriate rewards to early participants. Later participants can still benefit from the distribution of eco-rewards.

The Contentos system produces a new block every 3 seconds. When the block is produced, it also releases reward tokens. Taking the first year as an example, when each block is produced, about 4.26 tokens will be released into the reward pool.

Year	Release (%)	Acc. Release (%)	Release (token)	Acc. Release (token)	Token/New block
1	0.448%	0.448%	44,800,000	44,800,000	4.26
2	0.896%	1.344%	89,600,000	134,400,000	8.52
3	1.344%	2.688%	134,400,000	268,800,000	12.79
4	1.792%	4.480%	179,200,000	448,000,000	17.05
5	2.240%	6.720%	224,000,000	672,000,000	21.31
6	2.688%	9.408%	268,800,000	940,800,000	25.57
7	3.136%	12.544%	313,600,000	1,254,400,000	29.83
8	3.584%	16.128%	358,400,000	1,612,800,000	34.09
9	4.032%	20.160%	403,200,000	2,016,000,000	38.36
10	4.480%	24.640%	448,000,000	2,464,000,000	42.62

| 11 | 4.928% | 29.568% | 492,800,000 | 2,956,800,000 | 46.88 |
| 12 | 5.432% | 35.000% | 543,200,000 | 3,500,000,000 | 51.67 |

60% of the regular reward tokens will be used to motivate users to create content and participate in ecosystem operations. Another 30% will be the incentive for block producers. Finally, 10% of the regular reward tokens will be used to reward DApp developers for creating a better user experience and thus attracting more users to join the Contentos ecosystem through the DApp. The reward structure is shown in the figure below.
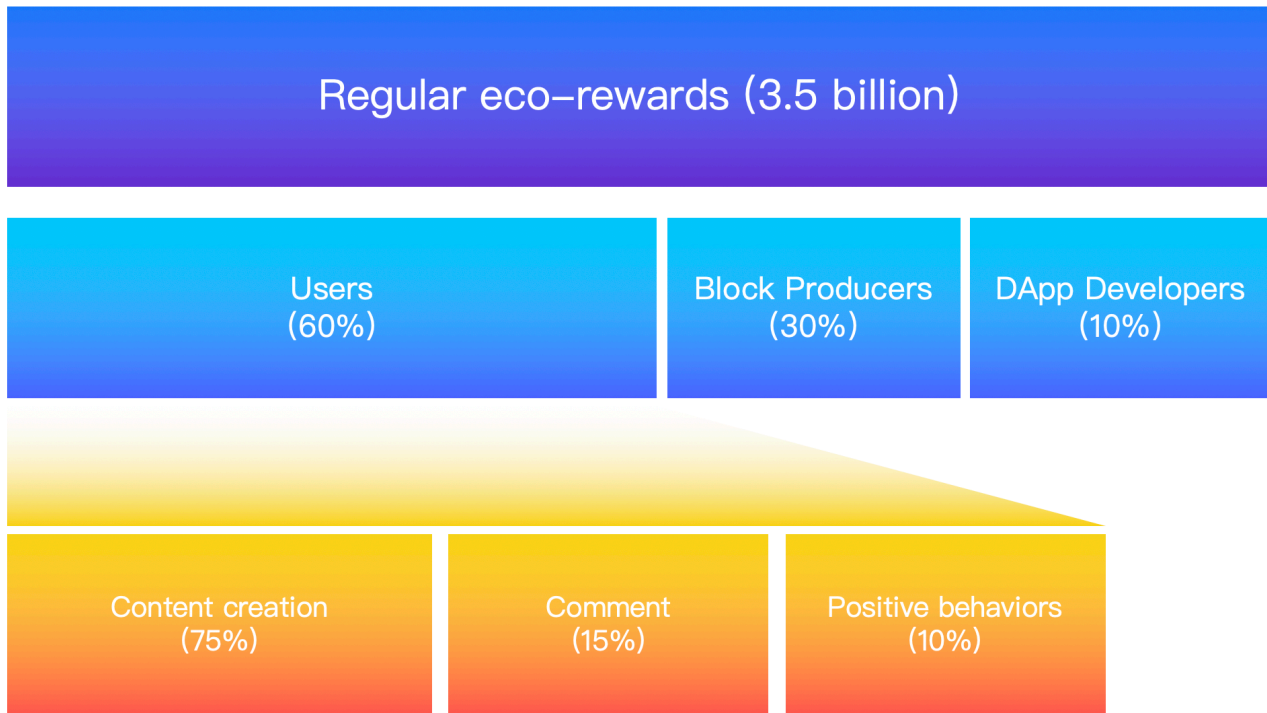

Rewards will be distributed in accordance with the quality of content produced, which is determined by the community members. Developers that have created DApps that facilitate the creation of quantity and quality content will earn ecological rewards.

The regular ecological reward for a given period is R, the reward for motivating the users is R_U, the reward for block producers is R_B, and the reward for motivating the DApp developers is R_D, then R_U = R * 60%, R_B = R * 30%, and R_D = R * 10%.

There is a total of n works produced in this time period, and the positive evaluation received by the i–th work is c_i, and the positive evaluation of all works in the cycle is C, that is, C = sum(c_i). Then the reward that the creator gets for the period is R_U * c_i / C.

For a DApp, assuming that two works are created on the time period, and the positive evaluations c_p and c_q are obtained respectively, the DApp creator can obtain the reward R_D * (c_p + c_q) / C.
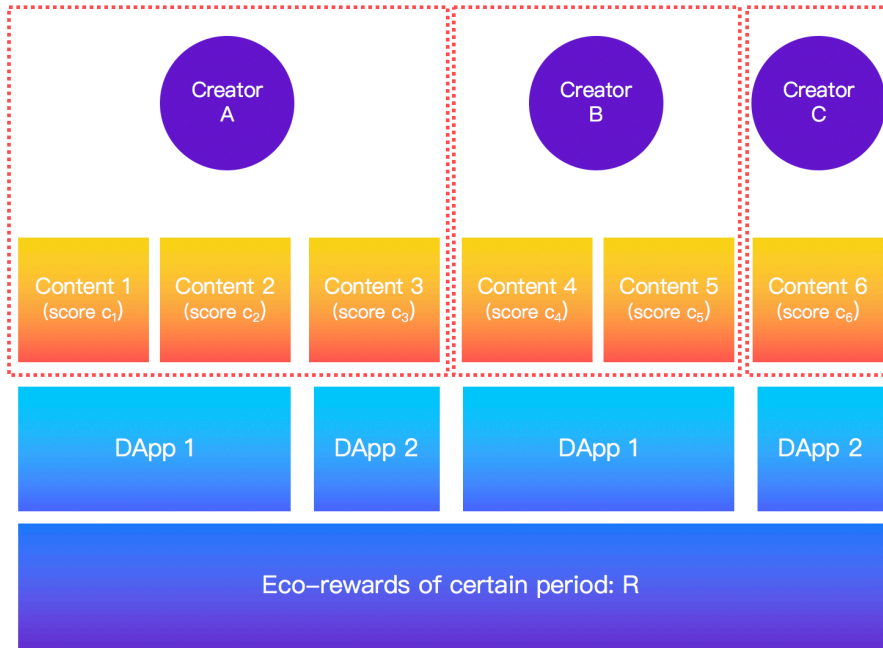
For example, in the above figure, a total of 3 creators created 6 works in 2 DApps (given the positive evaluation of each work as c_i, the overall eco–reward of certain duration as R), and Creator B created Content 4 and Content 5. The reward for Creator B is R * 60% * $(c_4 + c_5)$ / $(c_1 + c_2 + c_3 + c_4 + c_5 + c_6)$; DApp 2 gets the ecological reward R * 10% * $(c_3 + c_6)$ / $(c_1 + c_2 + c_3 + c_4 + c_5 + c6)$ because it enables users to submit Content 3 and Content 6.

Kick–start reward strategy

To attract more users to participate in the early stages of Contentos, 500 million tokens (that is, 5% of the total amount) will be offered to the DApp developers recognized by the Foundation to design relevant functions and reward methods to encourage users to join the Contentos ecosystem. These kick–start reward tokens are released year by year in 5 years. Given the total amount of kick–start reward tokens R, the amount of releases in the n–th year is defined to be

$$R_n = R \times \frac{1}{\log_2(n + 1)} \div \sum_{i=1}^{5} \frac{1}{\log_2(i + 1)}$$

According to the above formula, the annual release amount of the kick–start reward token is as follows.

Year	Release (%)	Acc. Release (%)	Release (token)	Acc. Release (token)
1	33.9%	33.9%	169,580,103	169,580,103
2	21.4%	55.3%	106,993,132	276,573,235
3	17.0%	72.3%	84,790,051	361,363,286
4	14.6%	86.9%	73,034,175	434,397,461
5	13.1%	100.0%	65,602,539	500,000,000

Regarding regular ecological rewards (35%) and kick–start rewards (5%), the total amount of tokens released as the overall ecological rewards grows to 4 billion within 12 years since Contentos project kicks off. The amount are shown in the following table and figure. The Contentos Foundation and the community will re–examine the amount of tokens released according to the annual user base growth. From the 13th year onward, when the eco–reward tokens are completely released, DApp developers shall be able to get enough revenue from content transactions. Then the ecological reward mechanism ends.

Year	Regular Reward	Kick–start Reward	Annual Release	Acc. Release
1	44,800,000	169,580,103	214,380,103	214,380,103
2	89,600,000	106,993,132	196,593,132	410,973,235
3	134,400,000	84,790,051	219,190,051	630,163,286
4	179,200,000	73,034,175	252,234,175	882,397,461
5	224,000,000	65,602,539	289,602,539	1,172,000,000
6	268,800,000	0	268,800,000	1,440,800,000
7	313,600,000	0	313,600,000	1,754,400,000
8	358,400,000	0	358,400,000	2,112,800,000
9	403,200,000	0	403,200,000	2,516,000,000
10	448,000,000	0	448,000,000	2,964,000,000
11	492,800,000	0	492,800,000	3,456,800,000
12	543,200,000	0	543,200,000	4,000,000,000
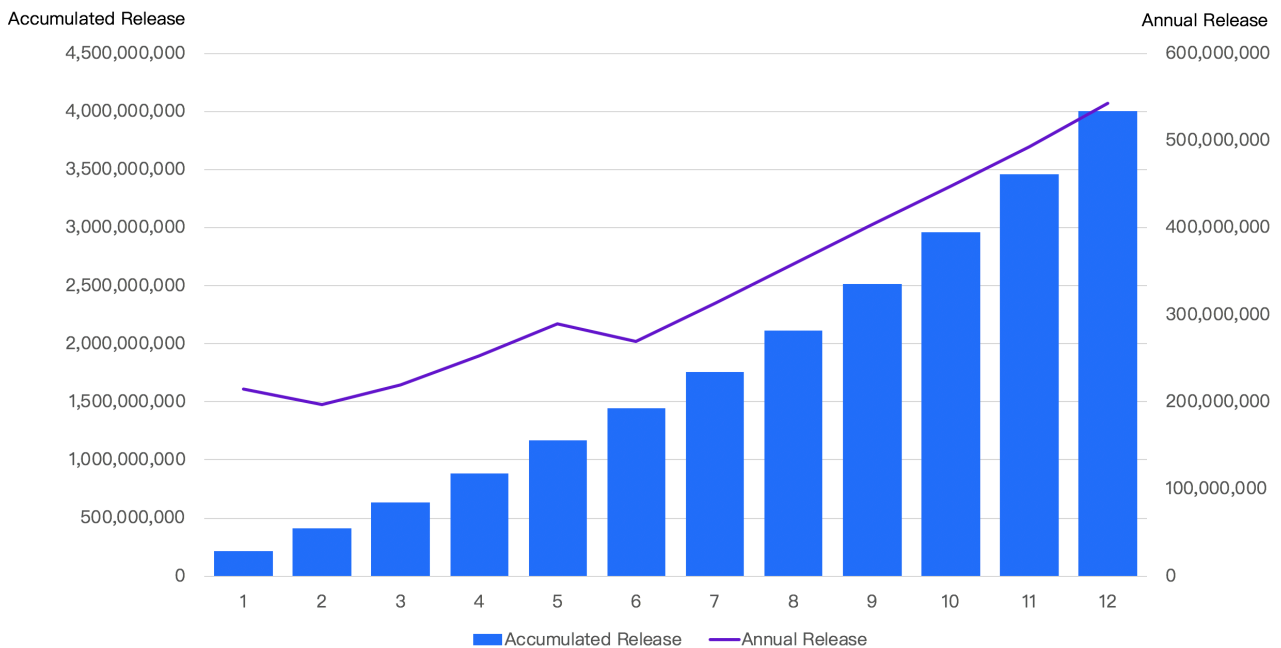
COS wallet

Contentos will develop a digital asset wallet which will be used to store COS. The user's wallet will be automatically created and synchronized between devices with an encrypted cloud backup.

Contentos' credit system

All reward income is directly correlated with user credit to encourage users to provide high-quality, honestly-selected content and to limit malicious, dishonest behavior.

The amount of COS tokens and time tokens have been held will be factored into user credit rating to encourage invested, long-term participation in the content community.

Contentos incentive system

In order to encourage good behavior in the ecosystem, token rewards will be distributed to all users who contribute positively. Rewards are allocated after each billing cycle using Contentos' credit calculation mechanism. Any violation confirmed by the community will disqualify users from collecting rewards. The amount users are eligible to receive will be correlated to popularity of their contents.

Content creation rewards

All rewards earned for content will be positively correlated to users' real-time credit scores and the number of COS held by them. The rewards will also be correlated to current production frequency and the number of videos currently on the ecosystem. The fewer videos in the ecosystem in total, the larger the rewards distributed to each content creator. Therefore, early content creators will earn more token rewards, incentivizing involvement by early adopters. As the ecosystem grows, the rewards earned from producing content will decrease and even drop to zero. By then, creators will be able to earn healthy revenues from subscriptions, gifts, and advertising and thus no longer need to rely solely on rewards from the ecosystem.

Activity rewards

Activity rewards incentivize those leaving comments, which not only play a role in promoting content but can also provide suggestions for creators on how to improve content or inspire new content.

If the number of "thumbs up" is larger than the number of "thumbs down" for a particular comment, the user will earn a reward. However, if the "thumbs down" are larger than the "thumbs up," the comment reward will be zero, and at the same time, the corresponding credit score will be negatively affected.

Community operating rewards

The users who help to moderate community development and flag inappropriate content earn community operating rewards in accordance with their contributions.

The relation between credit system and eco-rewards

A user's credit score and validity of content recommendations determine whether he/she is eligible to participate in the distribution of eco-rewards.
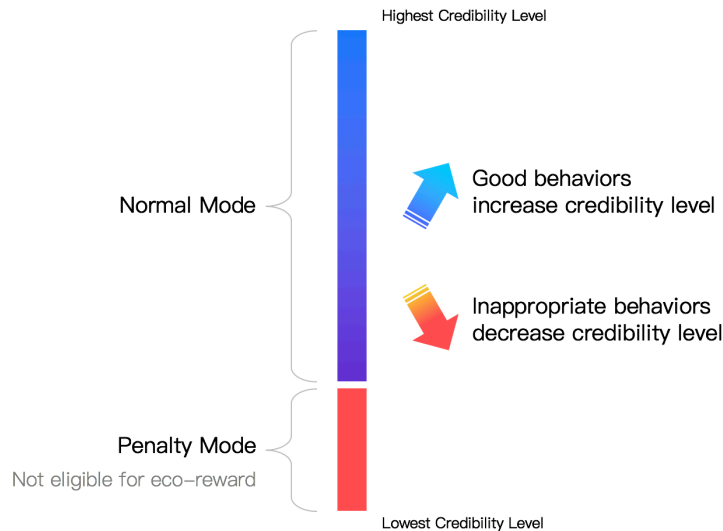
User's credit level (X)

- Normal mode (X = N ~ TOP): Every new user starts at the credit level X = N. At this mode, users are able to participate the distribution of eco-rewards, and the recommendation is valid.
- Penalty mode (X = 0 ~ N — 1): When a user's credit level goes below the threshold N due to the malicious behaviors to the ecosystem, the user will be downgraded to penalty mode. At certain mode, users are not able to earn eco-rewards and the content recommended by the users will not be taken into reward calculation. Those users must behave well to accumulate credit points in order to upgrade to normal mode.

Validity of content recommendation

A content recommendation is valid only if the user:

- has the credit level in normal mode
- has sufficient daily recommendation points (There is a daily limit of recommendation points to a user. The mechanism encourages users to recommend only the worthy contents.)

Distributed storage

Users earn tokens by publishing content in the Contentos ecosystem; however, the Contentos network does not store the actual content, but rather its hashed value. For users who want to store decentralized content, Contentos will provide synchronization/backup services from different backup platforms. To host content, users can place content in multiple backup platforms by burning COS, and these backup platforms can also place the content in other decentralized content storage blockchain

networks for backup (for example, by linking IPFS to the Contentos content chain). Moreover, individuals or communities that provide storage of Contentos content can earn COS as rewards. As the hashed value of content has been stored in the Contentos network, the content cannot be tampered with.

Content bid ranking

After the Contentos user and traffic base have been established, advertising spaces can be appropriately released. Creators, users, and advertisers can issue content and advertisements by spending COS. The revenue generated will enter the bonus pool to reward users in the system.

Contentos' internal control mechanism

Delay mechanism

In the case of copyright infringement, all income shall be frozen in the perpetrator's account for a period of time after the content has been uploaded. The user can view the income, but the COS earned cannot be spent. In the absence of any reports of infringement during this period, all income shall be transferred to the user's account.

Guarantee mechanism

A specified quantity of the payer's tokens will be frozen as a deposit to protect the interests of the content creator and the copyright owner when trading. If the deposit is insufficient, any late payments or non-payments will be permanently written into the blockchain, regardless of whether it is a micro-bill or a one-time bill.

Token withdrawal controls

A good-faith guarantee will be provided for all users, and the limit of withdrawal to exchanges or wallets will be determined according to the user's credit score. Users with low credit scores will have low withdrawal limits and may even be banned from withdrawal to prevent them from acting maliciously and encourage them to improve their credit scores.

Potential risk content controls

Users are empowered to examine and report content containing pornographic or violent words, or that violates the copyrights of others. Arbitrators are needed to ensure the healthy development of community culture. The initial attributors will be selected by the founding team. To avoid attributors being stuck in benefit conflicts, they are not allowed to conduct any other performances like posting content, giving comments and likes, or receive any rewards (including but not limited to rewards from the bonus pool, virtual gifts, COS).

As communities develop, Contentos will gradually implement the community autonomy system under the council's decision. Users can begin a poll for content they believe to be pornographic or dangerous in any way. Those who successfully report any inappropriate content will gain improved credit ratings and may also split rewards (if any rewards in the bonus pool related to the reported content are to be distributed) with the attributors on the side of the majority.

The system will incentivize users to examine content, and COS will be rewarded to contributing users. Once any content has been labeled as inappropriate through a voting mechanism, it cannot be displayed on the front end, and the individual's credit score will be greatly decreased.

Contentos' arbitration council mechanism

Responsibilities of the arbitration council

The arbitration council may participate in improving and updating the system's rules and adjusting the parameters in each formula according to the total number of videos and the reward model. The first council members will be comprised of the early founders of Contentos. The founders have a duty to maintain and improve the ecosystem's first rule mechanisms, so they will not be rewarded. Subsequently, council members will be selected at the discretion of the founders.

Council member elections

Any user who holds COS tokens and reaches a certain credit score will be qualified to be selected as a Council Member by the founders. Each year, a total of ten council members will be selected by the founders.

User roles in Contentos

Content creators

As core users and value providers, content creators should gain the largest share of the revenue. Content creators can earn token rewards by uploading original content. If the rights to the content are owned by more than one person, the user can also upload a payment list delineating the percentage share of any distributed rewards.

When a video is played, the content creator will be rewarded with tokens based on the number of viewers they receive. The content creator also can allow other users to place advertisements on their content and personally set the cost. The advertising revenue will be automatically deducted from the advertising user's account and transferred into the creator's account according to the click–through rate using micro–billing. Most revenue will be owned by the content creator, while a small portion will be used to reward users who view the ad content.

The content creator can also earn a larger one–off payment by selling the copyright. The copyright income will be earned by the new copyright owner after it has been transferred, and the content creator will no longer earn any income for this content.

Content distributors

Content distributors can earn income by accurately recommending and matching the content to the target audience. If the users show that they like or dislike the content, or actively promote the content, they can be rewarded with tokens and credit score rewards in line with their contribution.

Content consumers

Gift giving

In addition to general interactive behaviors such as Liking, sharing, and commenting, users can also use COS to purchase virtual gifts for content creators to express enjoyment of content. For content creators, received virtual gifts can be converted back to COS after deducting the developer's share.

Content subscribers / donators

Users may subscribe to or donate to content, thereby providing incremental payments to creators for their content and services.

Content purchasing

Users can purchase ownership of content, allowing creators to obtain larger, one-off payments. If both parties sign an agreement, the subsequent income from the content will be earned by the new copyright owner.
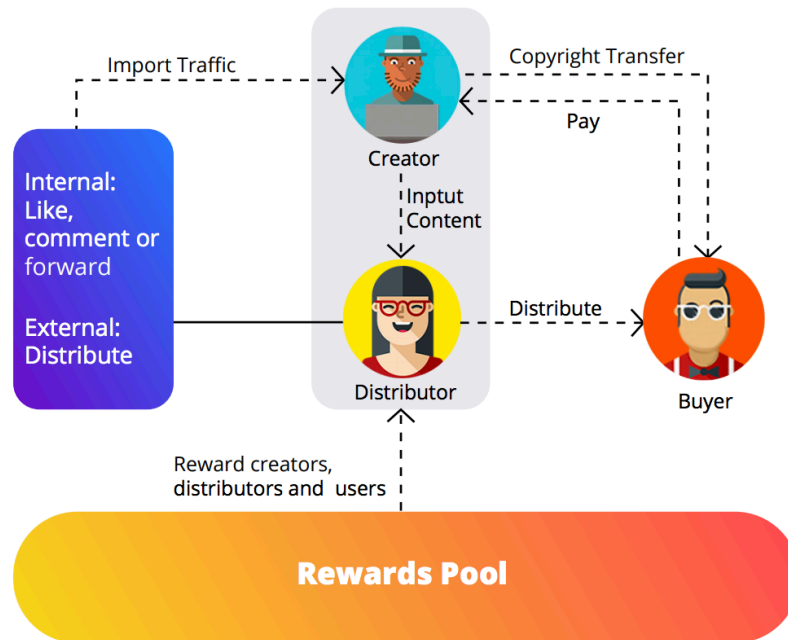
Community operators

Community operators can obtain token rewards for flagging inappropriate content, especially ones that infringe on another party's rights. In addition, community operators can classify and label content so that the content is more accurately matched with the target user.

Developers

Public chain developers

Any developer who participates in and contributes to the Contentos public chain development can earn COS rewards regularly in the development phase in accordance with their contribution. This includes but is not limited to fixing public chain bugs or performing basic functions for the important public chain. Rewards will be distributed by the core development team of Contentos public chain after examination of contributions.

Upper-level community/product developer (DApp developers)

The community or product developer has the right to determine the internal mechanism on COS usage. For example, extra fees can be claimed from COS users when they use COS to purchase virtual gifts in Contentos communities. Meanwhile, upper-level community or product developers have to pay COS

to use Contentos public chain for workload counting. Any new community or product is required to submit certain COS as a deposit before accessing the Contentos public chain per the prediction on their usage of the public chain. The deposit will later be recounted regularly per the actual usage of the public chain, which encourages the developers to try their best to develop products or services that are truly valuable to users, other than blindly abusing public chain resources.

In the initial stage, per the amount of high–quality content that is created, submitted and confirmed by users in the communities/products the developers have developed, they will regularly be rewarded with COS tokens as a kind of encouragement. In the later period, this reward will gradually decrease, and finally be cancelled. By then, the community/product developers will be paid by users who use the community/product they have developed.

An example of a developer app: buying and sending virtual gifts.
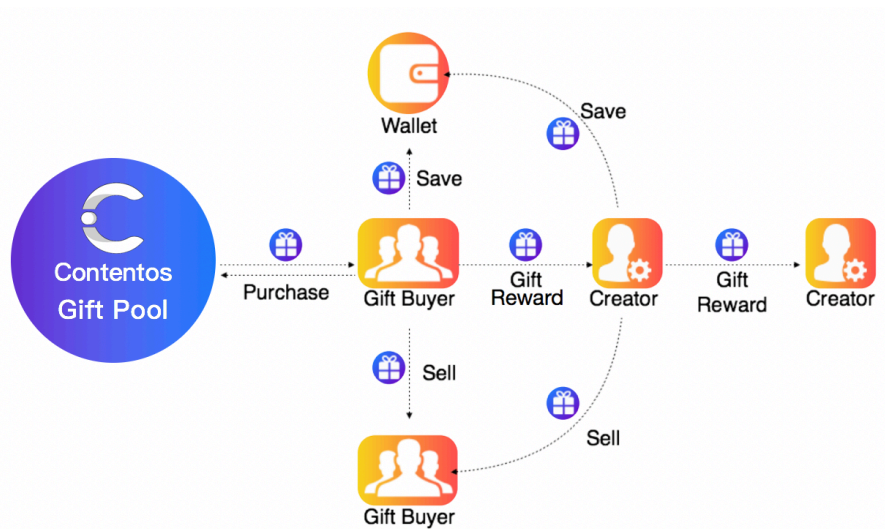
Bookkeepers

Bookkeepers will be elected by the Contentos community. Each round has total 21 bookkeepers responsible for block production and transaction confirmation. The top 20 are selected by approval voting and will serve as Contentos bookkeepers, while the No. 21 bookkeeper will be served in turn by those who have applied but failed to be one of the top 20. The bookkeepers will be shuffled when each round ends in case any bookkeeper continuously neglects the block generated by the same bookkeeper placed before. If a bookkeeper misses a block and fails to generate a new block within 24 hours, he/she will be disqualified and replaced by the next person in line.

Team, advisors, investors and strategic partners

Team

The Contentos team is registered as a nonprofit organization in Singapore.

Research on Contentos content chain will be carried out in the USA and Taiwan. The team members have years of experience in product, technology, and operations. Contentos has won angel round investments from top investors and established strategic partnerships that will be instrumental in the development of the Contentos protocol.

Products: experience in many successful overseas products

The product team has previously developed the world's leading junk and privacy cleaning tool outside of China, with more than 100 million daily active users and LiveMe, the premier live streaming product in the United States.

Technology: technical experts in blockchain and artificial intelligence

The team is composed of technical experts in blockchain technology who have researched the development of smart contracts and cross–chain communication. The team also has access to technical support in artificial intelligence, image recognition, and natural language processing.

Operations: local and overseas experience

The Contentos operation team has international exposure, with experience spanning across 85 countries.

Advisors

Charles Fan: Founder and CEO at MemVerge

Hitters Xu: Founder of Nebulas

Strategic partners

LiveMe, Cheez

Contentos collaborates with LiveMe and Cheez, the first mobile video platforms to showcase Contentos content.

LiveMe is a streaming platform that has emerged from Cheetah Mobile, claiming a global reach of over 600 million active users. LiveMe secured 60 million USD in Series A funding from Matrix Partners China, IDG, EMC, and Gobi Venture Capital in April 2017. In November 2017, it secured another strategic investment of 50 million USD in Series B funding. Since its inception, LiveMe has completed two rounds of financing totaling 110 million USD. With the app installed in over 85 countries, with local operation teams and offices in U.S, Japan, South Korea, Taiwan, the Middle East, Brazil, Indonesia, India, Vietnam, and other countries. LiveMe has more than 50 million users and its annual revenue has reached more than USD 100 million.

It is consistently ranked No.1 among Google Play social apps in the U.S. and ranked top in Europe, Asia, the Middle East, and other regions. As of August 2017, it is ranked 9th globally in terms of revenue for non-gaming apps, and 1st globally for apps of the same category. In 2018, LiveMe won the Most Innovative Company annual award by the famous business magazine Fast Company with the comment "the YouTube of the live video space."

Cheez is the newest short-video app released by LiveMe in September 2017. Within a mere three months, it has already garnered much attention in iOS trending searches for the U.S. and Google Play top 10 lists, thus validating the extensive experience of the overseas operations team.

LiveMe and Cheez will help Contentos become a leader in the global content industry. By bringing in resources in global mobile video content, quality broadcasting broadcasters, video content creators, active users, and consumers, the involvement of LiveMe and Cheez shall energize the creation and consumption of content within the Contentos ecosystem.
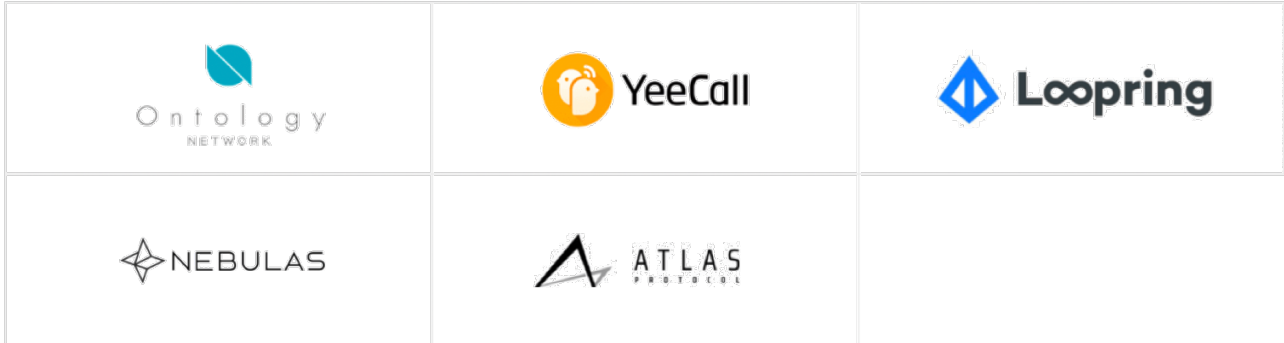
Cheetah Mobile

Cheetah Mobile is a premier Chinese internet company in with its products covering more than 200 countries, and its global users surpassing 3 billion. Its monthly active users have reached over 600 million, among which 75.4% are from overseas. The company's core application Clean Master is the world's leading cleaner & booster tool for Android devices.
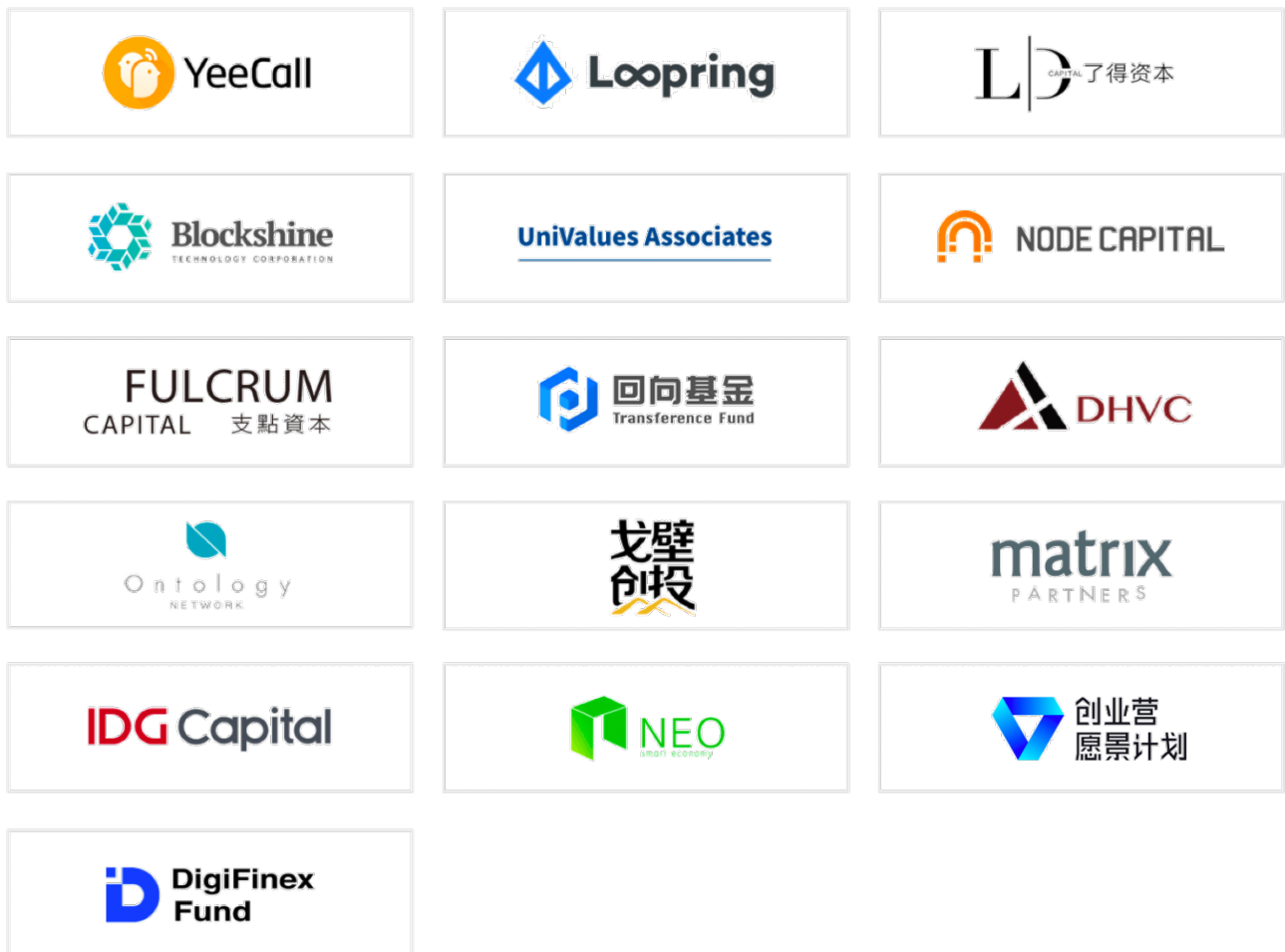
Its photo editing app PhotoGrid and the mobile security product Security Master were both listed on Google Play's Best Apps in 2016. Its mobile games have recorded 100 million users worldwide, including PianoTiles 2, which was awarded the Best Game of 2015, and Dancing Line and Rolling Sky, which were both listed among the top 10 App Store apps in 2017. Business

After Contentos achieves measurable results, Clean Master and other game products will allow their users to directly participate in Contentos content operations and claim/use COS tokens.

Other strategic partners

Ontology NETWORK	YeeCall	Loopring
NEBULAS	ATLAS PROTOCOL	

Investors

YeeCall	Loopring	LD CAPITAL 了得资本
Blockshine TECHNOLOGY CORPORATION	UniValues Associates	NODE CAPITAL
FULCRUM CAPITAL 支點資本	回向基金 Transference Fund	DHVC
Ontology NETWORK	戈壁创投	matrix PARTNERS
IDG Capital	NEO smart economy	创业营 愿景计划
DigiFinex Fund		

Disclaimer and risk warnings

Disclaimer

1. This white paper is for information only and shall only be used for reference purposes. It does not constitute trading advice or an offer to trade any shares or securities sold in Contentos and its affiliated companies. Such an offer must comply with the relevant securities law and other laws.

2. Participation in any initial coin offering (ICO) means that the participant has reached the required age and has the full capacity for civil conduct and that a valid and genuine contract has been signed with Contentos. The participant's participation in any ICO is voluntary, and the participant has gained a clear understanding and knowledge of Contentos before signing the contract.

3. The Contentos team will continuously make reasonable improvements to ensure that the information in the white paper is true and accurate. Updates and adjustments may be made during the development process, including but not limited to the community mechanism, tokens and the token mechanism, and the distribution of tokens. Some of the content of the white paper may be adjusted in newer versions of the white paper in line with the development of the project. The team will announce the updated content publicly by publishing an announcement or the new version of their white paper on the website. The participant must promptly obtain the latest version of the white paper and promptly adjust his or her own decision based on the updated content. Contentos expressly states that it will not be liable for losses arising from the participant's dependence on the content of this document, inaccurate information in this document, or any behavior as a result of this document.

4. The Contentos team will make every endeavor to achieve the goals stated in this white paper, but due to force majeure, the team cannot make a full and complete commitment.

5. As official tokens of Contentos, COSs are important tools for the smooth operation of the platform and are not investment products. Possession of COSs does not mean that the owner is granted ownership rights, controlling rights, or decision–making rights to the Contentos platform. As encrypted tokens used in Contentos, COSs do not belong to the following categories: (1) any kind of currency; (2) securities; (3) equity in a legal entity; (4) shares, bonds, bills, warrants, certificates, or any other documents granting of any right.

6. The team makes no promises as to any increase in the value of COSs and shall bear no liability for any consequences resulting from any increase or decrease in their value.

7. To the maximum extent of the applicable law, the team shall bear no liability for damages and risks arising from participation in an ICO, including but not limited to direct or indirect personal damages, loss of commercial profit, loss of commercial information, or any other economic losses.

8. Contentos abides by any regulatory rules that are favorable for the sound development of the ICO industry as well as industry code of conduct declarations. If the participant participates, it means that they completely accept and abide by regulatory inspections. In addition, all information disclosed by the participant to complete regulatory inspections must be complete and accurate.

9. Contentos clearly communicates the possible risks to the participant. Once the participant participates in an ICO, it means that they have understood and approved all terms in the detailed rules, accepted the potential risk, and are solely liable for any potential consequences.

Risk warnings

1. Policy risk: Currently, the regulatory rules for blockchain projects and ICO financing are ambiguous internationally. The participant may suffer losses due to policy changes.

2. Market risk: If the overall value of the digital asset market is over–estimated, the investment risk will be larger. The participant may have high expectations for ICO price increases following the ICO, but these high expectations may not be met.

3. Systematic risk: This refers to the force majeure factor, including but not limited to natural disasters, the large–scale failure of computer networks all over the world, and political unrest, among other events.

4. Regulatory risk: Transactions in digital assets are characterized by extremely high uncertainty. As there is currently a lack of robust regulation and oversight in the digital asset transaction sector, electronic tokens are at risk of price volatility, and if the individual participant lacks experience, they may find it difficult to withstand the impact on the assets and the psychological stress brought about by market instability after entering into the market.

5. Project risk: The Contentos team will make every endeavor to achieve the goals stated in this white paper, and already has a relatively mature commercial model. However, because the industry's overall development is unpredictable, the existing commercial model may not closely align with market demand, resulting in difficulty achieving substantial profits. Moreover, the white paper may be updated as the project details are confirmed. If the updated project details fail to be promptly obtained by the ICO participant, the participant may be subject to information asymmetry, resulting in inadequate knowledge, which may affect the subsequent development of the project.

6. Technical risk: (1) Because this project is based on a cryptographic algorithm, the rapid development of cryptography also brings potential cracking risks; (2) Because technologies like blockchain and distributed storage underpin the development of the core business, the Contentos team cannot completely guarantee the implementation of the technology; (3) When the project is updated, bugs may be found and may be fixed by issuing a patch; however, the extent of the impact of the bugs cannot be guaranteed.

7. Hacker attack and crime risk: In terms of security, electronic tokens are anonymous and diffi cult to trace. Therefore, they are easily attacked by hackers or utilized by criminals or may be involved in criminal behavior as illegal asset transfers.

8. Unknown risks: With the ongoing development of blockchain technology, there may be some risks that currently cannot be foreseen. The participant should fully understand the team's background and overall framework and participate appropriately in the crowd funding of tokens.