Polkacast : A Decentralized Podcasts Protocol

Polkacast

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Abstract

This whitepaper will discuss the fundamentals surrounding the Polkacast Protocol, including podcasting trends, architecture design, governance model, token economics, etc.

The Polkacast Protocol is an asynchronous and scalable podcast protocol based on substrate framework, IPFS and smart contract. With blockchain technology and IPFS storage, podcast creators greatly lowers the cost for hosting contents and generates multiple revenue streams under the token economics based Web 3.0 era. As part of the Polkadot ecosystem and a content dApp pioneer, The Polkacast Protocol is truly a decentralized podcast protocol that allocates the governance power to the users and creators, and bring considerable income to the content creators. By implementing a Proof of Stake (PoS)/Proof of Creater(PoC) dual consensus mechanism and open-source community Dao governance, the ultimate ownership of the Polkacast Protocol belongs to every user who holds Cast, and the Daos formed by Cast holders will be granted the right to make proposals to participate the governance and upgrade of the Polkacast Protocol.

Polkacast Protocol Innovations

Dual-token economics mechanism. The Polkacast Protocol uses dual coins: "Cast" and "Ctape". Cast maintains network and data synchronization. Cast is used to build and elect node, transfer security, referendum, Dac IP rights support, etc. Podcast creators and audiences in the Polkacast ecosystem use Ctape to make the payment.

PoS+PoC dual consensus mechanism. PoS maintains node security and governance. Cast token holders can make a proposal to amend the Polkacast protocol. The PoC consensus uses smart contracts to force the fair distribution of tokens to podcast creators and incentivize users in the ecosystem.

Dual Dao governance, every user in the Polkacast Protocol ecosystem is part of the Dao, the composition of Dao: "Dac" and "Dau", Dac and Dau carry out a two-way restriction to balance the entire protocol network. In the blockchain space, there is a trilemma, that is "decentralization", "security", and " scalability" can not be achieve at the same time. Nevertheless, the dual Dao governance and dual-token consensus model proposed by Polkacast Protocol will improve the trilemma to its maximization. Trusted nodes are formed by Dac election within the cycle, all PoS nodes will ultimately be composed of 1,000 or more trusted Dac nodes to ensure the node security. The Substrate Frame consensus protocol - BABE+GRANDPA is used to ensure network synchronization. When the network achieves synchronization and block confirmation, smart contracts and PoC consensus are used to force the fair distribution of token rewards.

Table of Content

1. Overview

1.1 Market Trends

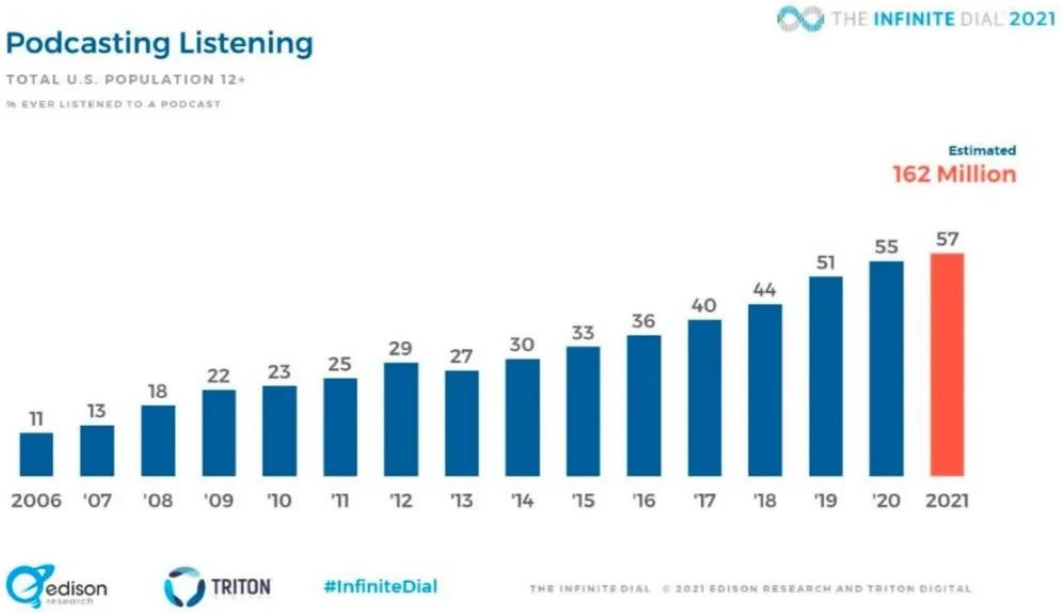

Diagram 1. The latest reports from Edison and Triton Digital

According to Edison and Triton Digital's new study (Diagram 1), the proportion of Americans over the age of 12 who have listened to podcasts will continue to grow in 2021, rising from 55 percent last year to 57 percent this year, or around 162 million people. The number of people who are aware of podcasts and who listen to them is growing in the United States. After smashing through the 100 million mark for the first time in history last year (accounting for 37 percent), monthly podcast listeners surpassed 40 percent this year, hitting 116 million and setting a new record.

According to data from the podcast search engine Listen Notes”,

there are 16,448 podcasts in mainland China as of December 31, 2020. And, as of the end of April 2020, this figure had just surpassed 10,000, implying that there were more than 6,000 new Chinese podcasts added in the last three quarters of 2020. “2020 Survey: A Look at Chinese Podcast Listeners” released by “PodFest China” gave the portrait of the core audience of Chinese podcasts. The main consumer group of Chinese podcasts is between 22-35 years old, highly educated singles who live in Beijing, Shanghai, Guangzhou, Shenzhen, Hangzhou and other new first-tier cities. The total time that Chinese podcast listeners listen to podcasts per week is approximately 3 hours and 54 minutes, and the number of long-term listening podcasts is 5.5. According to the data, the global audience for podcasts is relatively young, well-educated, and has some purchasing power. At the same time, podcast advertising revenue is exploding, “customer loyalty” and “purchase power” are the keys to wealth.

Diagram 2. PwC's latest report

According to the Interactive Advertising Bureau (IAB) and

PricewaterhouseCoopers (PwC)'s latest report (Diagram 2), the industry's advertising revenue was approximately US$479.1 million in 2018, and it is projected to reach more than US$1 billion by 2021.

There are currently over 750,000 podcasts available worldwide, with a growing demand. There are over 290,000 episodes of content (with more being added every day), and it is available in over 100 languages. Simultaneously, delivery platforms include not only computers and iPods, but also more user-centric distribution, such as smart phones, smart watches, smart speakers, CarPlay, RSS, and other decentralized types.

1.2 Podcast History

1.2.1 What is a podcast?

Podcasting is a form of digital media in which a list of audio, video, electronic radio stations, or text files is released on the Internet, and listeners subscribe to the list using electronic devices to download or stream the electronic files in it, thereby receiving the content. The term "podcast" is a combination of the words "iPod" and "Broadcast."

Simply put, a podcast is a sound program. The content is typically an original audio or video recording program, but it may also be a video transmission of television or radio shows, presentations, plays, or other events. It is totally free and comes directly from all corners of the globe.

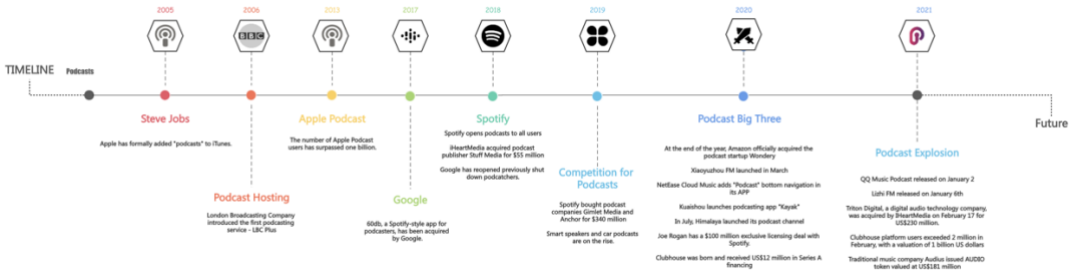

Diagram 3. Podcast Timeline

1.2.2 Podcast Classification

Corporate Podcast

By 2020, corporate podcasts have become mainstream. 17 (68%) of the Fortune 500's top 25 corporations have their own podcasts available on their corporate websites. To be more specific, rather than the company's CEO appearing on a third-party podcast or the company's funded output of independent podcast shows, these podcasts are paid for by the company itself. This trend is emerging in all industries: B2B and B2C companies are producing podcasts, including retail, medical, energy, telecommunications, financial services, manufacturing, automotive, technology, blockchain and other industries.

There are three primary reasons for corporate podcasts. Companies create podcasts for a number of purposes, including promotion, highlighting their experience and skills, and creating a brand image. Second, podcasts may be used to provide online learning material for internal educational purposes. Finally, many businesses use podcasts to hire new employees.

Companies invest large sums of money to carry out the activities mentioned above, which means that they have the funds to produce many podcasts. Large global companies spend more than US$1.6 trillion in marketing each year, while global companies spend US$200 billion each in the learning (online learning) market and the recruitment market. Podcasts account for a very low proportion of total investment, but it may be still a surprisingly large amount of money.

Personal Podcast

In comparison to corporate podcasts, the personal podcast industry was first to market, Joe Rogan's show The Joe Rogan Experience was exclusively licensed to Spotify for a licensing fee of US$100 million. In this era of rapid podcast growth, it is predicted that more personal podcasts will be produced independently by their own personal brands in the future.

Personal qualities have increasingly become mainstreamed in the Generation Z period. The Long Tail Effect of social media, for example, has resulted in the emergence of a slew of social media influencers. Twitter, Facebook, Instagram, Wechat, Spotify, Tiktok, and other centralized social media sites have generated unlimited value for social media influencers, but they are still subject to site limitations and can be blocked at any time.

1.3 Threats and opportunities

Each phase of the podcasting process, from production to hosting and storage to distribution, listening, and monetization, is fraught with challenges. Ordinary users can record directly with their phones and computers in production phase, then transmit audio content after some easy processing. You'll need a shared location or scene to record and participate in multiplayer podcasts. Due to the continued maturity of technologies such as 5G and WebRTC, multiplayer recording can be completely realized through online dApp recording based on WebRTC, which saves costs while also providing more comfortable online conditions during the COVID-19 timeframe.

Solving the problem of convenient production while still dealing with high platform hosting fees might be enough to put many podcast creators off at this stage. The average monthly cost of a podcast hosting service is about $15. More available functions will be unlocked as the subscription level rises. Many future podcast producers would be directly missed as a result of unprofitable and unrestricted expenses.

Podcast distribution is also at risk of being blocked or delisted in a market where content is sensitive, centralized privacy breaches, and massive Internet behemoths monopolize. At the same time, user data would be used for ads, privacy sales, privacy leakage, and other purposes. Hundreds of Twitter and Facebook users have unintentionally allowed the use of their personal data by third-party applications on the Android system, according to "CNBC." After the GDPR's implementation, a growing number of people have begun to

distance themselves from large technology firms like F.L.A.N.G. (Facebook, linkedin, Amazon, Netflix and Google). Simultaneously, a growing number of people are moving to blockchain encrypted storage in order to enhance data protection and privacy. Traditional podcast storage is unencrypted, usually self-built storage services or use third-party RDS, Redis and other centralized storage forms, so they will all face the above problems.

Traditional podcasts could have been reprocessed by the hosting site, or even embedded internal ads, from storage to delivery to consumer listening. Users who listen to podcasts regularly may prefer the "nativeness" of podcasts. Instead of being distributed to users via a centralized data model and undergoing secondary processing and tampering, all created podcasts are delivered to the audience in a “naked” state.

We live in a time when "short," "various," and "deafening" content reigns supreme. People's reflection mechanisms in the modern century have been influenced by social media such as Twitter, Facebook, YouTube, and Tiktok. Podcasts do not have much space for survival as a form and carrier. If the problems of privacy, centralized storage, originality, profitability, and decentralization of rights can be solved, and an unrestricted, user-led podcast protocol can be established, there might be some people in need in the future, and genuinely "Slow Immersion" can be provided to all those in need.

2. Polkacast Protocol Overview

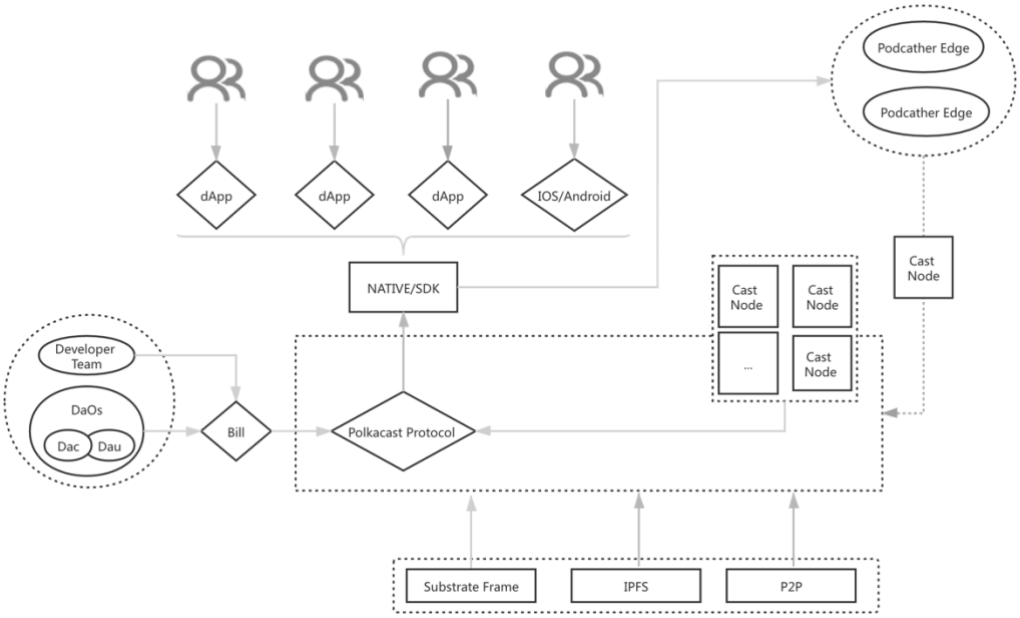

Diagram 4. Protocol Overview

2.1 Introduction to Polkacast

Polkacast is a protocol network that was built and developed using Substrate, IPFS, smart contracts, and Wasm technologies. Polkacast offers a high degree of community autonomy, unified network and other features. In addition to its own protocol for access, the Polkacast protocol also provides basic podcast hosting BaaS platform, Web dApp, Polkacast podcatcher etc. In addition to using the platform's own services, any user or developer may build their own independent dApp by connecting directly to the Polkacast protocol's SDK or NPM. The Polkacast protocol aims to provide podcast creators with an easy, fast, simple, and profitable podcast ecosystem by enabling community autonomy, token economy, EP NFT, privacy security, and other features.

2.2 Polkacast Vision

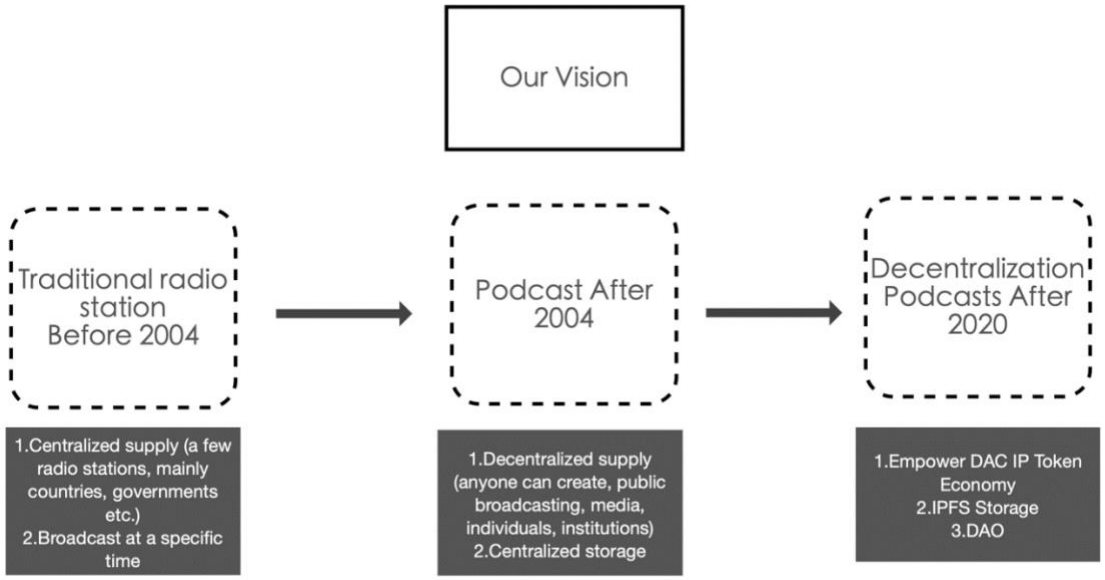

Diagram 5. Polkacast Vision

The goal of the Polkacast protocol is to become a parachain of the Polkadot network, and benefit from the thriving cross-chain ecosystem and shared security, and to provide podcast creators and users with a better and safer non-fork network, and Community autonomous services.

The definition of podcasting is that everyone can openly share their thoughts, feelings, and identities. Podcasting's most compelling attribute is its freedom. Personal podcasters share their views, while corporate podcasts broadcast corporate values. We believe that anyone or any organization should build their own independent podcast and brand with their own distinct personality and style. The group members decide whether the project succeeds or fails. The Polkacast Protocal’s aim is to genuinely delegate control to each and every user.

3. Polkacast Protocol Architecture

3.1 Architecture Overview

Substrate is the foundation of the Polkacast architecture. Polkacast can add new features through Pallets as users demand, with no need to worry about network forks, thanks to Substrate Runtime's fork-free update and transparent governance tools. Easier and risk-free upgrades mean that the Polkacast Protocol can develop and evolve robustly to keep up with the pace of innovation and changing market demands in the blockchain era.

Substrate is completely modular and flexible. Polkacast makes use of existing module components to build a Polkacast protocol that is suitable for its own business creation through Pallets and contracts, without having to worry about basic consensus, network, block confirmation, and other basic modules. As a result, Polkacast can concentrate more on its own technical area, saving time and effort in development while keeping the code lean and succinct by implementing only the required functions on the custom blockchain protocol.

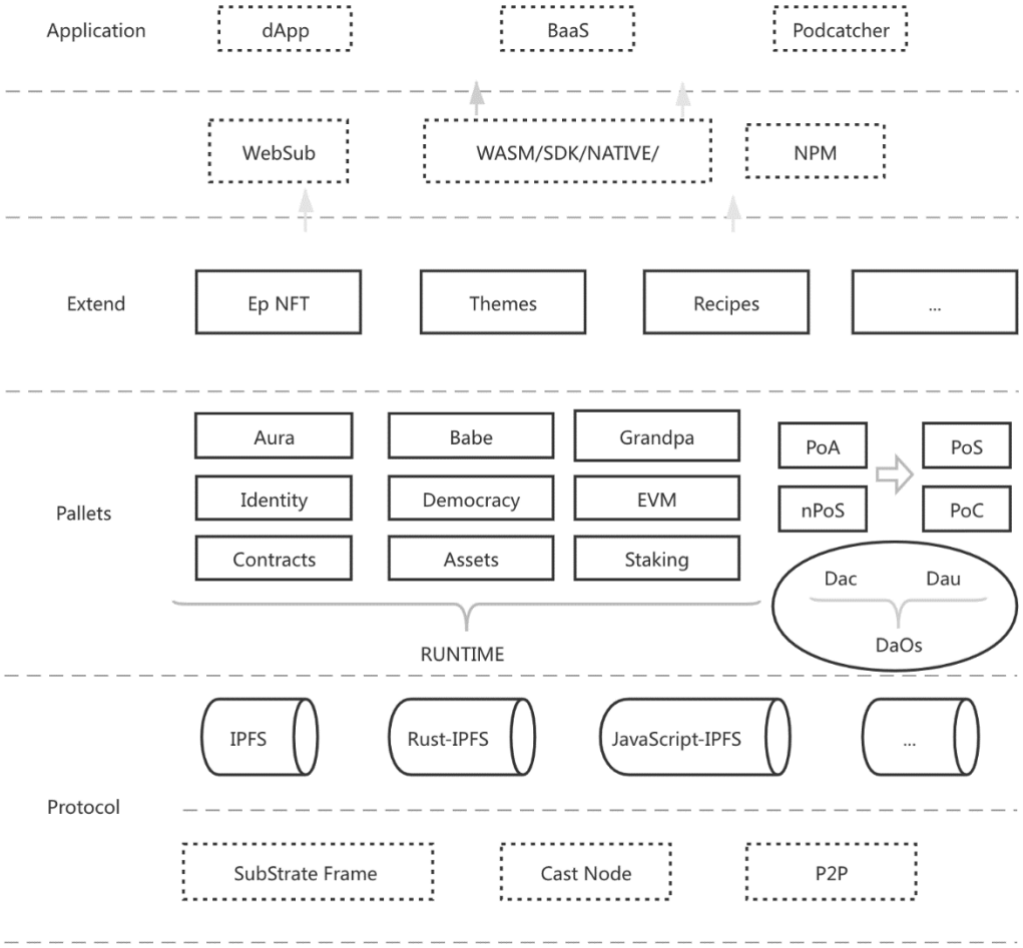

Diagram 6. Architecture Diagram

3.2 Architecture Design

Polkacast has four layers: a Consensus layer, an RUNTIME layer, an Extension layer, and an Application layer.

3.2.1 Consensus layer

Substrate Frame: Substrate Framework for Runtime Aggregation of Modularized Entities, a.k.a Runtime module aggregation framework. Frame is a series of Pallets and related support libraries used to simplify Runtime development. Each Pallet is a separate module used to deal with specific logical areas.

Simply put, when using Frame to build, Substrate provides the core and runs multiple Pallets components on Runtime to form a complete business logic. After the program runs, IPFS will provide the storage, and Runtime is combined with Pallets components to execute, build and distribute rewards to creators and users through smart contracts, PoS, PoC, BABE, and GRANDPA consensus. Finally, the Wasm and SDK/NPM distribute the content to the client for users who need it to pick up.

Why IPFS?

IPFS is similar to the World Wide Web, and can also be regarded as an independent BitTorrent group, exchanging objects in the same Git repository. In other words, IPFS provides a high-throughput, content-addressable block storage model, and content-related hyperlinks. This forms a generalized Merkle tree Directed Acyclic Graph (DAG). IPFS combines DHT, libp2p and a self-certified namespace. With IPFS, you can process a large number of data without changing the hash address of the stored file. IPFS has no single point of failure and has an acceleration impact since it is distributed storage with no shared trust between nodes. By eliminating delays, distributed content delivery can save bandwidth, accelerate edge computing addressing and provide users with faster services, and prevent DDoS attacks that may be encountered by Http schemes.

3.2.2 Runtime

In September 2018, Gavin Wood introduced the idea of Substrate, which divides the blockchain structure into three layers:

- Substrate Core
- Runtime
- DAO

The Substrate Core part mainly includes basic functions such as consensus, network system, transaction pool, RPC, and the Runtime part is the function of the current chain. The Runtime library combines all these components with Pallet. It defines the Pallets included in the runtime and configures them to work together to form the final Runtime. When calling runtime, it will use Executive Pallet to dispatch these calls to each Pallet, such as calls to public methods and features between modules.

The Runtime layer of Substrate can directly compile both Wasm/Native execution files. Rust's Native and Wasm that can run under the Wasm virtual machine can enter the Runtime version information in the execution file through participation and hard-coded entry when starting the node. Because of the lightweight, agile, and safe features of Wasm, it can effectively reduce the startup speed and resource consumption of Serverless applications. Almost all browsers already support Wasm. Wasm has good portability, allowing applications to run consistently in different platform environments from cloud servers to edge IoT devices. Switching between different devices, development and transplantation, has brought great Great convenience. Because of the Wasm code, it can be guaranteed that even if the node is not updated to the latest version, it can still run with

the latest code, and it is guaranteed that it will not be forked due to different codes. It is also ensured that during the process of synchronizing the old data of the node, synchronization errors will not be caused because the local code is the latest.

To create a true equal distribution and creator privileges, the PoS+PoC dual consensus model is implemented on the Runtime smart contract. Based on the PoC, each podcast creator will enjoy his or her own rights and interests.

Dao Governance

- Dau: Distributed Autonomous User. Each user on the Polkacast network is a Dau, and each Dau has corresponding rights and obligations. For more details, please see the governance section.

- Dac: Distributed Autonomous Creator; each creator on the Polkacast Platform is referred to as a Dac; each Dac can be made up of the creator and Dau; and each Dau is merely an entity and does not include the Dac. Each Dau has the option to leave the joined Dac at any time and join a more appropriate Dac.

3.2.3 Extension Layer

The Polkacast protocol extension layer is mainly used to extend the utility of dApps, such as: "multi-themes, built-in download statistics and analysis, custom domain, fast

migration, copyright-free images, etc". Recipesd can meet different creators to quickly build different styles of dApps And some self-built plugins.

3.2.4 Application Layer

Polkacast Platform: A podcast hosting platform blockchain as a service(BaaS) built with Substrate and ReactJS. It primarily offers simple content delivery, file upload, data statistics, advertising, theme selection, and recipes to generate independent dApps.

Podcatcher: These include, but are not limited to, iOS, Android, desktop, and other clients. The bottom layer is Polka Wallet + decentralized storage of user-created content, which is distributed to the Polkacast podcatcher via API, RPC, and other calling methods. While listening, any user can earn Ctape rewards.

4. Token Economics

Users will eventually be in charge of the ecosystem's development. As a result, the Polkacast Protocol will decide a user's worth based on how they use the network and how much time they spend on it. In order to have a specific incentive in accordance with the smart contract. For example, after a user listens to a podcast for a certain amount of hours, the podcast will unlock the initially locked token, and the new token will be compensated based on the later listening time, in order to achieve a long-term PoS and PoC token model and community growth. Community members may, of course, buy Token to deposit into the smart contract account in order to increase their PoS and PoC staking factors. To ensure the security of the PoS nodes on the Polkacast protocol's main network and the blockchain's impossible triangle, the Polkacast protocol uses a dual-token mechanism and a PoS+PoC dual consensus model to allocate rewards. Cast tokens will be used for network security, referendum, smart contract security, cross-chain transaction security, staking and other infrastructure. The Polkacast Protocol uses Ctape to pay both podcast creators and listeners according to the PoS and PoC consensus in the podcast creator ecosystem.

4.1 Dual Consensus Mechanism

4.1.1 PoS Mechanism

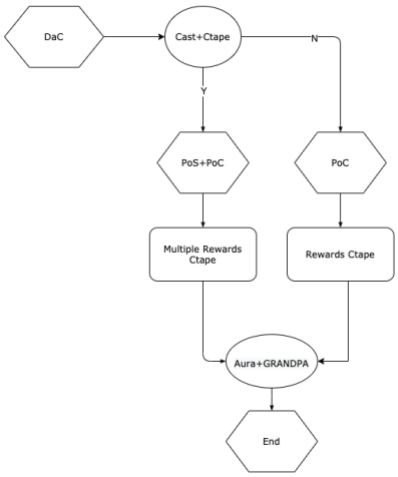

Diagram 7. Dac reward rules

PoS is an abbreviation for "Proof of Stake." Via the process of staking, the PoS system primarily addresses the issues of network inefficiency, resource waste, and node consensus. In simple terms, whoever has the most stakes has the final say, so podcast producers with Cast +Ctape will be rewarded more for making podcasts.

4.1.2 PoC Mechanism

PoC is an abbreviation for "Proof of Creator." Any PoC can become a Dac, and each Dac can have its own dApp, with the corresponding PoC gaining access to the Polkacast Protocol platform based on the ability to build podcasts in order to receive Ctape rewards.

4.2 Why Dual Token?

From a security perspective, the goal of the Polkacast protocol is to become a parachain of the Polkadot ecosystem. When too many chains are interoperable, linked, and transacted, unexpected things can happen. As a result, the Polkacast protocol employs a dual token model to avoid unnecessary risks.

From a transaction standpoint, the dual token model can be used to optimize utility more effectively in order to increase TPS. Cast serves as the cornerstone, while Ctape serves as network gas consumption, such as user contact, transactions, incentives, and payment orders.

4.3 Cast and Ctape Token Economics

4.3.1 Cast

Name: Polkacast

Symbol: CAST

Total supply: 930 million

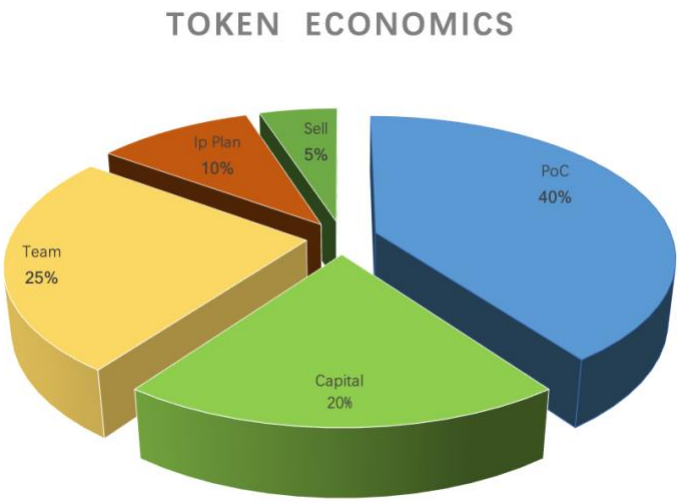

Diagram 8. Cast Token Distribution

Token Distribution

PoC staking: 40%

- 10%: Unlocked and returned to Dao within 1 years, following the release of the mainnet, the community and developers will set up PoS nodes. With the rewards earned during that time span will be used to repurchase Ctape.
- 30%: After the mainnet goes online, Staking nodes will receive an annual boost of 4% to 6% in inflation rewards.

Investor: 20%

Team: 25%

DAC IP Plan: 10%

Early Sales: 5%

Circulation and Use

Polkacast issued Polkacast (Cast) based on Ethereum to enable developers, creators, early users, and investors to be involved in the Polkacast ecosystem and to continue network

maintenance, governance, and other models. In the future, Cast can be applied to both Ethereum 2.0 and the Polkadot network. In the early development stage of the Polkacast Protocol, the ERC20 Cast is issued on the Ethereum network. The total amount is 930 million and will be fixed perpetually. When the Polkacast mainnet is launched, ERC20 Cast will be exchanged to native Cast on its own blockchain network in a 1:1 ratio.

The primary goal of Cast is to elect PoS nodes on a regular basis, as well as network validation, referendum, Dac IP rights and interests support, and so forth. To maximize user interest for Cast nodes, Cast introduces an annual inflation increase of 4% to 6% to enable all holders to participate in staking. The reward is 40% of the initial lock-up of the PoC, 30% of which is supplied first, and 10% of which is developed by Dao members in the community to maintain early node protection. According to the ecosystem's development, the 10% will switch to the user's Cast staking within 1 years, while Dao members exit, with 10% of the early Cast staking rewards publicly repurchased by Dao members for Ctape. The specific implementation plan will be conducted by a referendum on proposals.

4.3.2 Ctape

Total supply: 4.65 billion

There is no circulation for the Ctape token until Polkacast mainnet releases. When the Polkacast Protocol mainnet goes

live, Ctape will be distributed at a 1:5 ratio based on the users who already hold Cast. Since 40% of the Cast will be locked initially, the initial circulation of Ctape will be 60% of the total, resulting in up to 2.79 billion Ctape in circulation. Following the launch of the mainnet, the remaining 40% of Ctape will be distributed to podcast creators and ecosystem users with an annual inflation rate of 5% to 10% based on Dac and Dau through the PoC and PoS dual consensus.

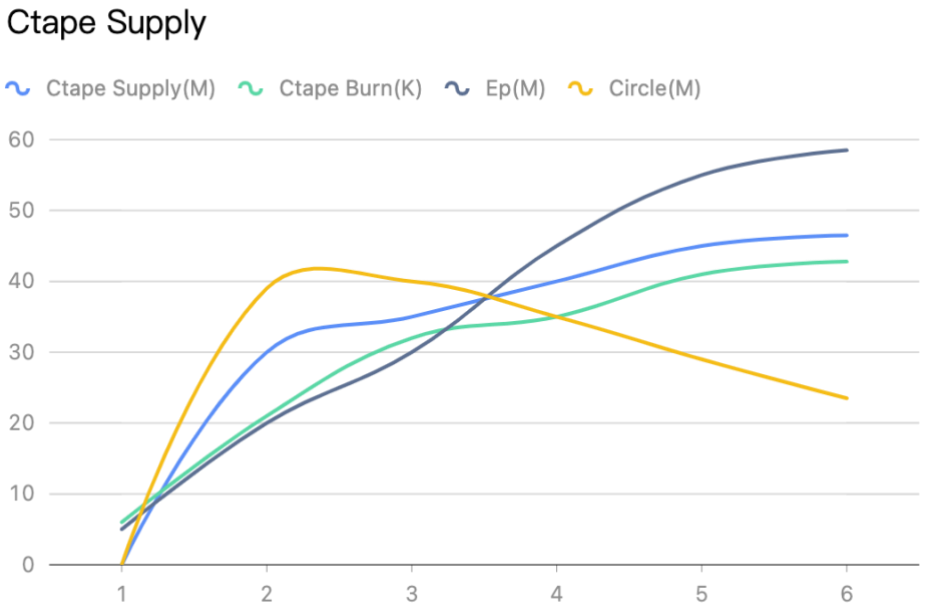

Diagram 9. Ctape Supply and Deflation

The supply of Ctape will closely follow the necessary conditions such as the number of Dac Episodes and the increase in Dau. As the number of Episodes continues to increase, increasing the inflation supply of Ctape will effectively alleviate liquidity crunch. Furthermore, as a deflationary token, Ctape will optimize its usefulness with the growth of users, circulating supply, and demand.

Ctape Deflation Model

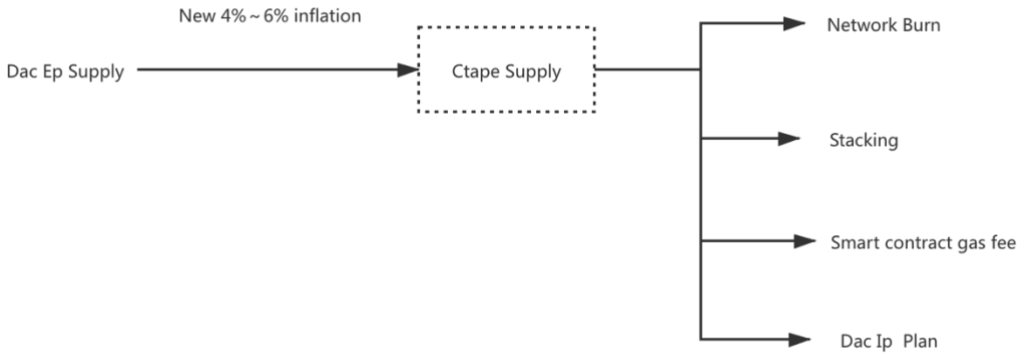

Diagram 10. Ctape Burning Mechanism

- Network Burn: Any transaction will incur network fees, and Ctape will have a greater distribution and circulating supply as a result of user-interactions among the dApps. The Polkacast protocol will be called by any PoC smart contract transaction. At this time, the interaction will require Gas fees, with 15% of the fees produced by Gas being burned. This is similar to the Ethereum EIP-1599 proposal. The proposal introduced "BASEFEE Burn" as a mechanism for ETH supply deflation. While this mechanism has not yet been introduced, it is likely to be implemented in the future in order to maintain node security and ensure the scarcity of ETH as the Ethereum ecosystem grows and the transition from the PoW to the PoS node model occurs.

- Staking Ctape to gain weight: Podcast creators will gain weight by holding more Ctape, resulting in more Ctape incentives, which encourages more creators to hold Ctape.

- Staking Ctape to lock up to increase weight: "Podcast creators can increase their weight by holding more Ctape, thereby obtaining more Ctape rewards, thereby incentivizing more creators to hold Ctape".

- Dac IP Plan: When an individual podcast creator joins Dac, they will submit for the IP support plan if they meet certain requirements. They must stake a portion of Ctape and determine whether to move under the Dao and smart contract constraints. Podcasters may create their own tokens and distribute them throughout the Polkacast network.

5. Polkacast Ecosystem

5.1 BaaS Hosting Platform

The BaaS service platform based on the Polkacast protocol supports multiple podcast creators to simultaneously use WebRTC technology to record online. The out-of-the-box podcast hosting production platform can quickly generate their own independent podcasts through the Recipes combination without knowing the code, and open access Enter independent domain names, Themes and more extended functions, and also provide professionals to connect to the SDK to create their own independent podcasts.

5.2 Podcatcher

Create an open source Podcatcher without collection privacy using the Polkacast API, and IPFS content data interface. Initially, the client offers the Ethereum wallet feature. When the Polkacast Protocol mainnet is released, the wallet client will migrate from the Ethereum wallet to the Polkadot wallet, and all users who use it in the early stages will be rewarded. When users hit a certain threshold, the attenuation model and invitation mechanism are enabled to prevent non-target user groups from joining the Polkacast podcast ecosystem.

5.3 Empowering Individual IP

When Dac podcast creators hit a certain level of user volume

and community size, they will be able to issue their own tokens and Ep NFT in the form of proposals, allowing them to further extend their brand and IP value. Polkacast will allocate a certain amount of Cast tokens based on the current Dac podcast creator weight from 10% of the Dac IP plan to subsidize this podcast creator's personal IP growth. At the same time, each user who holds Cast will receive a corresponding amount of newly issued tokens by airdrop, and thus the liquidity and usage of the newly issued tokens..

After creating new tokens with personal podcasts and empowering Ep NFT, personal Ip attributes create more possibilities. Non-Fungible Token (NFT) is a unique and indivisible token. Each token is one-of-a-kind, indestructible, and interchangeable. Personal wealth in the Generation Z period is determined not by the sum of money owned, but rather by the assets under one's name and one's own creative capacity. Properties, vehicles, stocks, shares, copyrights, and other products with a market value are examples of these assets, although they are not limited to them.

Podcasters who create EPs have their own IP attributes, making it extremely difficult to verify and distribute the content. One solution is to use the blockchain to secure uniquely valuable Ids based on mature IP-based assets on the NFT to reduce the possibility of bad actors gaining access to them. Second, the non-homogeneous nature of IP properties can be used to capitalize on IP's multi-layered value. Podcast creators have an opportunity to make more money by

voicing potential expectations and creating a virtuous loop of constant asset supply.

6. Polkacast Governance Model

In the WEB 3.0 era, every user should enjoy independent governance, voting, and freedom. The blockchain protocol should be upgradable, unforkable, and permissionless in the age of fully decentralized blockchain protocols. It should also have an open source governance model, and any individual who enters this protocol has the freedom to make proposals. As a result, a full blockchain protocol should be like the Declaration of Independence, with various types of legislative, administrative, and judicial governance and controls, allowing the Polkacast Protocol to be regulated more robustly and openly.

6.1 What is dual Dao governance?

Dao is composed of: Dau + Dac

The acronym Dao stands for Decentralized Autonomous Organization. Dao in the Polkacast protocol is made up of both Dac and Dau. Every new podcast creator is a member of the Dao, which is known here as a Decentralized Autonomous Creator (Dac). The Dac is determined by Decentralized Autonomous Creator (Dau), which is the number of active users who have entered this Dac. If the current Dac adheres to the smart contract model, it is designated as one of the nominee Dacs. At this time, the Dac will apply to become one of the nodes and stake a certain amount of Cast. Following the analysis, the staked Cast will be linearly released and

returned to the Dac node, and throughout the loop, all nominee Dac nodes will be polled and picked.

The dual Dao governance model has the advantage of not forming a single monopoly of rights. Each of the Dao's Dacs and Daus holds Cast tokens, which means that each Polkacast user has the right and duty to question, refuse, and substitute the proposal.

6.2 Polkacast Governance

6.2.1 Dac Node

Polkacast employs a "fluid democracy" system that allows free Dau users to enter the Dac. Dac is an organization made up of individuals or groups that have common beliefs and are reliable. The primary rights and responsibilities are to propose and control the implementation and governance of the Polkacast protocol, as well as other proposals. For example, Dac may initiate a proposal for equal token distribution. The Technical Committee creates a smart contract and submits it to the proposal management center for approval. Other Dacs and Daus will vote as well. It succeeds if more than half of the votes are cast in favor of it; otherwise, it fails.

6.2.2 Technical Committee

The technical committee is similar to the government and is solely responsible for bringing the voting results into effect. The technical committee is limited by the Supervision

Committee and is made up of the official technical team of Cast and freelance developers. The technical committee is the last technical committee to deploy the code and the last line of protection to avoid errors in the Polkacast Protocol. The technical committee cannot initiate a proposal, but it does have the power to expedite implementation following the referendum results. Once the technical committee's recommendations are approved and enforced, all nodes will be upgraded.

6.2.3 Supervision Committee

The Supervision Committee nodes will be elected based on all Dac nodes; the initial number of Supervision Committee nodes will be 5-10, and it will increase in accordance with the creation of the Polkacast protocol, the size of the community, and the developed Dac, and it will decrease in accordance with the growth of users entering the Dac nodes; the number will not be more than 30, and it will not be less than 5. The Supervision Committee's key privileges and responsibilities are as follows: "The Supervisory Committee acts like the US House of Representatives, responsible for drafting and formulating legislation, as well as vetoing any harmful or pointless proposals." The Supervision Committee is not the only organization that initiates proposals. Proposals may also be submitted by Cast holders. After reviewing them, the Supervision Committee may either expedite the proposal's entry into the referendum stage or screen out risky proposals.

6.2.4 Freelancer

Freelancer are users or third-party developers who own a certain amount of Cast tokens but have not entered the Dac. In its early stages, it is made up of three groups. According to the development of the community, there are no more than 8 Freelancer. The primary role is to prevent the other three parties from entering into illicit transactions under the control of interests, thus undermining the free creation of the Polkacast Protocol.

Any Polkacast Protocol ecosystem Cast token holder can use their Cast tokens to do the following in the Polkacast ecosystem:

- Make a referendum proposal.
- Vote in all current referendums.
- Dac node selection and rejection

7. Roadmap

Diagram 11. Roadmap

8. Conclusion

The Polkacast protocol is divided into three parts. Blockchain technology is used to develop an open source, scalable and decentralized version of the Polkacast protocol. The BaaS provided by the platform is used for podcast creators to quickly build their own podcast platform on top of the Polkacast protocol. The protocol layer passes The runtime component Pallet of Substrate Frame is combined to complete different contract models. In terms of storage, IPFS is used to store and accelerate the transmission of data. The application layer uses the PoS+PoC dual protocol model to constrain and distribute Token to reward developers, creators and users who continue to contribute to the ecosystem. Polkacast protocol governance is governed by a dual Dao model, which is governed by developers, Podcast creators and users jointly maintain the protocol ecology. Dao members develop the Polkacast protocol under the constraints of contracts and proposals, so as to jointly maintain a scalable, governable, and upgradeable podcasts protocol.

9. Disclaimer

9.1 Disclaimer

In light of developments in government regulation of blockchain technology, cryptocurrency, or intangible property around the world, the Polkacast Dao group reserves the right to alter the document's content in compliance with local laws. You affirm that you will make your own decisions on the project team's and project services' material, and that you accept all risks associated with the use of the content of this document, including risks associated with dependence on the correctness, completeness, or practicability of the content of this document. Polkacast Dao cannot and will not be held responsible for any loss or harm caused by your own conduct.

9.2 Copyright Notice

In case of conflicts between different versions, the latest version published on the official website (https://polkacast.network) shall prevail.

9.3 Right of Interpretation

The polkacast dao community reserves the right to alter, erase, add, repeal, justify, and take other actions in this text.

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