PayToView

Requirements

In addition to building their own digital space, users can also share some of their data with friends or others for a fee in some way. The user selects the data to be shared, such as an article, a picture, a short video, etc., and then packages it through the tool to get a link or QR code. Send the link or QR code to other people, and the other people can preview the content by visiting this link and, if interested, pay a fee to gain access, decrypt the content and watch it in its entirety.

Forwarding content is also a very important means of communication, and forwarding needs to be incentivized. Forwarding mainly considers the following needs: the control and profit rights of the source content publisher, and the profit rights of the forwarder. These rights are set by the publisher.

Tool packaging is to generate a customized smart contract (this is also an NFT), which encrypts user data to a certain extent. Unauthorized people cannot decrypt it. Authorized people decrypt the data through the data security sharing agreement and view the data content.

Share ratio

If the content is chargeable, a fee-sharing ratio can be established. The parties involved in content charging are: network (community), application developers, publishers, and forwarders. You can set the ratio like this:

0.5:1:7:1.5

Here,

1. Network + application developers are a fixed ratio, 1.5
2. The minimum ratio of forwarders is 1.5, and the maximum ratio can be 8.5, which means that the author completely gives up the profit to the forwarders.

For example, if a user pays 10 points, if there is no forwarder, the publisher will get 8.5 points; if there is a forwarder, the intermediate forwarder will have no income, and the final forwarder will get 1.5 points. Regardless, both the network and the application side get a fixed ratio. Many times, web and app developers are one and the same.

Users can also reduce their income to encourage more forwards, such as adjusting the forward share from 1.5 to 3, but the forward share ratio cannot be reduced.

Content

There are currently three types of content: text, picture, and video. The corresponding format defaults to pdf, jpg, mp4 and other network standard formats. More types can be supported in the future.

Content supports preview, and each type of preview has different preview methods. For example, text and video support viewing the beginning part, and picture supports a blurred image.

Publish

A content sharing contract will be generated when content is published.

Content publishers can set conditions for access to content.

Access conditions include the following (not limited to): (operated at the discretion of the contract)

1. pay a certain fee
2. own an nft

Users can increase the sharing ratio of forwarding from 1.5-8.5

Users can set the preview method: see the first x% of the content, or blur the display

Forward

A new forwarding contract will be generated when forwarding.

Forwarding content will result in rewards, and the reward ratio is at least 15%. Rewards are only awarded to the final forwarder, and intermediate forwarders cannot receive benefits.

When forwarding content, it is necessary to maintain control of the publisher but not save the forwarding chain.

For example, forwarding chain: S->a->b->c->d->e->F

S is the initiator, F is the final payer, and abcde is the forwarder.

In the end, e gets at least 15% of the share, and a/b/c/d does not get any share (of course, a/b/c/d will have its own direct paying users, and they will enjoy the payment share of direct paying users, and it is very likely that e is a paying user of d).

Each forwarder needs to re-publish the forwarding contract of the content in the original content contract.

If the forwarder deletes his or her forwarding contract, people who subscribe to the forwarding contract will not be able to see the content, and other people will not be affected.

If a publisher deletes a content contract, all subscribers will lose access to the content.

Buy

If the content you are interested in is paid, you can unlock the content with tx after paying the fee.

To unlock the content, the corresponding decryption key needs to be given by the proxy service to unlock the content on the user side.

Expired

The content sharing contract has a time limit. After expiration, the contract will automatically be invalidated and can no longer be purchased. But those who have already purchased can continue to view the content. (Can also be permanent if publisher pays sufficient storage fees)

Business Process

Publisher

Publish commission contract (negotiate fees only)

1. Enter the entrustment contract management page, and you can see the entrustment contracts that have been released. You can click in to view the contract content, delete the entrustment contract, or create a new entrustment contract.
2. Create a new delegation contract, select an agent (an official trusted agent machine), and determine the cost of each execution (for simplicity, it is determined by the agent. This fee is paid to the agent every time the agent executes the contract and re-encrypts k , the fee is paid by the subscriber)
3. Deploy the contract, get the contract address, and record it in the contract manager

Create sharing links and QR codes:

1. Select the content to be shared, set the preview content, generate a random key k, use k to encrypt the content to be shared, publish it to ipfs, and get the cid
2. Select the corresponding delegation contract (if there is no delegation contract yet, you need to create a new one), encrypt k with the agent's public key, and record it in dkvs (key: /payreading/publisher public key/cid, value is encrypted k, for the agent to read)
3. Set the conditions for access. Currently, two types are supported, one is payment (default), and the other is having a certain token.
    a. If it is paid, how many tvs are needed to set up. This is the total amount paid by subscribers.
    b. If qualified, indicate the name of the token and the number of possessions (do not distinguish between ft and nft)
4. Set the dividing ratio (save it after setting it once, and use the same value in the future)
5. Publish the contract, get the contract address, generate a sharing link and a sharing QR

code (the link points to an h5 page)

Cancel sharing:

After canceling sharing, original paid subscribers can continue to watch the content.

Subscriber

Subscribers can open a webview wherever they click on a link to a content sharing contract, load related resources, and perform the following operations:

1. Check whether the subscriber has permission to read the content (whether a certain tx exists or has a specified token)
    a. If it is a paid content sharing contract, look for the corresponding tx (read the dkvs record directly, which is written by the agent).
    b. If it is a permission requirement, check whether there are a sufficient number of specified tokens.
2. If there is no permission, download the preview content for users to preview.
    a. After viewing the preview, the payment page will pop up to the subscriber. If the subscriber is interested in continuing, click Pay to complete the payment. For the payment process, please refer to Technical Solution 2.
    b. If payment is not made, the process ends.
3. If you have permission, download the encrypted content, read the encrypted k from dkvs, decrypt k, use k to decrypt the corresponding cid file, and delete it from the memory after reading it.

Agent

Agents are empowered by the community.

The agent executes the functions specified in the entrustment contract and collects the corresponding fees.

The agent listens for messages on a dedicated message channel. When it detects a message sent to itself, the agent executes the corresponding contract function based on the content of the message:

1. After receiving the message that the agent is itself, decrypt the message content. The message content includes the following:
    a. Contract address
    b. Requester’ s public key
    c. Corresponding content cid
    d. The requester pays the completed tx
2. The agent checks whether the tx complies with the stipulations of the contract (two contracts need to be checked, one is the content sharing contract, which is included in the tx, and the other is the entrustment contract to see whether the fee paid to the

agent complies with the stipulations of the entrustment contract)

3. The agent reads the value set by the publisher from dkvs based on cid (key:/payreading/publisher’ s public key/cid), decrypts k from it, encrypts k with the subscriber’ s public key, and writes it into dkvs (key:/payreading/subscriber public key/cid)
4. Notify the subscriber to read the encrypted k from dkvs

If the publisher wants to cancel sharing, he needs to send a message to the agent to cancel. After receiving the message, the agent will leave the value corresponding to (key:/payreading/publisher public key/cid) blank, and will not be able to receive new subscriptions. However, users who have already paid can continue to watch the content.

Forwarder

The contract content published by the forwarder points to the content sharing contract published by the publisher, and the forwarder cannot change any content of the contract. The forwarder selects a link to a content sharing contract and selects forwarding. A page for creating a sharing link will pop up. The content is the same as when the publisher creates a sharing link, except that there is an additional content about who the forwarder is.