

Email is bound to become a core application of Web 3.0

Although email is not widely used in China, it is only used in the daily work of large companies. In the West countries, although social media is also very popular, email is still an indispensable Internet service that people rely on for their daily life and work. This article will discuss the past, present, and future of email, and provide a different outlook for readers, which is well worth reading.

1. The development of the Internet Web

The Internet was born in 1969, its first important application is email, the second important application is the Web, the three stages of Web development are:

(1) Web 1.0: 1990-2004, Read-only

In 1989, the European Organization for Nuclear Research (CERN) developed the World Wide Web protocol HTTP, which can be called "Web 1.0", which took place between 1990 and 2004. The Web 1.0 phase is dominated by static websites with almost zero interaction between users and little content produced by individuals, which can also be referred to as the "Read-only Web".

(2) Web 2.0: 2004-Now, Read-Write

The Web 2.0 period began in 2004 with the emergence of social media platforms, the Web was no longer read-only but read-write. Instead of just providing content to users, the Internet is beginning to provide platforms to share user-generated content and participate in user-to-user interactions. As more and more people go online, a handful of Internet giants are beginning to control the disproportionate amount of traffic and value generated on the Web. Web 2.0 has also given rise to an ad-driven revenue model. While users can create content, they don't own it or benefit from its monetization.

(3) Web 3.0: The Coming, Read-Write-Own-Trust

Web 3.0 was proposed by Ethereum co-founder Gavin Wood after Ethereum was launched in 2014. Web 3.0 will be a decentralized Internet where users will not only be able to read and write content but

will truly own the content they create, and the identity of the creator is trusted (digitally signed) and their content can benefit from its monetization, which will be an era of read-write-own-trust, although there is no full-fledged killer application yet, but it is worth looking forward to.

2. Email must become one of the core applications of Web 3.0

Let's go back to the original purpose of the Web, which is to create an open, decentralized protocol that allows people to access and share information from anywhere, on any device. The HTTP protocol is like this, and the same is true for email, but the traffic and value in the Web 2.0 have been monopolized by the platforms of Internet giants and turned into a highly centralized service that is highly dependent on the platform's services.

Email is different, anyone and organization can set up their own email address as long as they have a domain name, and this email address can send and share information to all email addresses around the world, this is not like all social media services that are based on a closed system, but it is an open communication and social service that is not subject to the constraints and control of any platform, it is a truly decentralized Internet service, in line with the core characteristics of Web 3.0, and does not need to rely on a highly centralized platform to achieve decentralization, coupled with the use of cryptographic technology to implement email digital signatures, encryption and timestamps, so that every email is trusted and real owned, which has all the characteristics of Web 3.0: read-write-own-trust. Therefore, the author boldly predicts that email will definitely become one of the core applications in the Web 3.0.

3. Prospects for the Web-based Encrypted Email

For email to become one of the core applications in the Web 3.0, of course, there are still many application obstacles to be solved, the biggest obstacle is that the problem of email content encryption has not been completely solved, and there are security problems such as spam and attack emails. The only solution to these application barriers is email encryption automation, which uses cryptography to digitally sign and encrypt emails, only digital signatures can prove the content creator's legal ownership and trusted identity, and only encryption can enable the licensed use of the content that the content has

ownership to benefit the content creator.

Let's imagine what the future of email will look like:

- (1) All emails are digitally signed, and each email has a trusted identity to prove its owner.
- (2) All emails are time-stamped, as called electronic postmark, and each email not only proves who owns it, but also proves when the content was produced.
- (3) All emails are encrypted, and users can use the public key of the digital certificate of the person who has the right to read to encrypt it, and only the person who has the right to read can decrypt the content and viewing, which solves the problem of paid reading the content of the creator, and also solves the problem of the distribution of interests of the content creator.

Readers who are familiar with the blockchain may have thought that these characteristics of email are the same as the digital signature and timestamp data of the blockchain being encrypted and written into a database, but the implementation mechanism of the blockchain requires the construction of a highly centralized blockchain system, although it can build multiple nodes, but this seems to go against the original intention of decentralization. The email system is a truly decentralized system, and there is no need to build a new system, and the existing very complete email service system covering the world is directly used to achieve Web 3.0.

It can be seen that encrypted email has the 4 core characteristics of Web 3.0, and has the advantages compared with the infrastructure construction based on blockchain technology, but there is still a lot of work to be done to truly become a killer application of Web 3.0, the core work is to realize the automation of email encryption, only the automation of email digital signature, timestamp and encryption, in order to achieve popular application, the core of research and development is Web email encryption, This is one of the important reasons why ZoTrus' email encryption solution no longer develops a standalone email client software, but integrates the email client into ZT Browser.

ZT Browser is not only a Web browser with excellent performance, but also a Web-based PDF reader that can verify the digital signature of documents and display the trusted identity of the signer, and it is also a Web-based encrypted email client that will be released soon, so it will be a Web 3.0 application client software and a decentralized individual information production and management tool. We can

look forward to its Web 3.0 featured services, including but not limited to:

- (1) Users only need to use ZT Browser to automatically realize email digital signature, encryption and time stamping.
- (2) The content produced by the user is published by encrypted email, with a digital signature and a time stamp, which can prove its legal ownership and trusted identity, and is stored in the user's mailbox (mail server) in an encrypted manner.
- (3) Other users can subscribe to the content produced by the user, of course, by encrypted email, and the user only needs to receive the email, no need to log into the centralized platform.
- (4) The content produced by the user is completely owned by the user because it is encrypted, which is very much in line with the characteristics of Web 3.0 - Read, Write and Own, and the user decides who can use the content and whether to charge for it, and fully owns the ownership and income of this content.

Web 3.0 has become a catch-all term now, representing a new and better vision of the Internet, and the application of cryptography technology will be a key point, because this technology solves the problem that users can not only read and write content, but also reliably own the content and prove the trusted identity of the content creator, and only by automating the three cryptographic applications - digital signature, encryption and timestamp, can Web 3.0 be truly realized, so that cryptography technology can serve all mankind in Web 3.0.

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October 16, 2024
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The author has published 73 articles in English (more than 91K words) and 181 articles in Chinese (more than 526K characters in total).

