# topDNS Best Practice Series Part 9: **Navigating Web3 Domains**

On 2 April 2025, **Freename & eco's topDNS Initiative** hosted the ninth in a series of [topDNS Best Practice webinars](#). In the [Navigating Web3 Domains](#) webinar, Paolo Domenighetti, CTO of Freename, gave an introduction to the emerging landscape of Web3 domains, highlighting their differences from legacy domains, their potential use cases, and the challenges they present.

Introduction to Web3 Domains

Web3 domains are built on blockchain technology, representing a decentralised, transparent alternative to the legacy domain name system (DNS). Domenighetti explained that, unlike classical domains, which are centrally managed and controlled, Web3 domains are owned directly by users and stored as NFTs (Non-Fungible Tokens) in digital wallets. The concept of decentralisation offers greater autonomy and censorship resistance, but also introduces new challenges, particularly around security and interoperability.

"Web3 domains allow users to directly own the domains as NFTs, offering complete control over them without the need for legacy registrars"
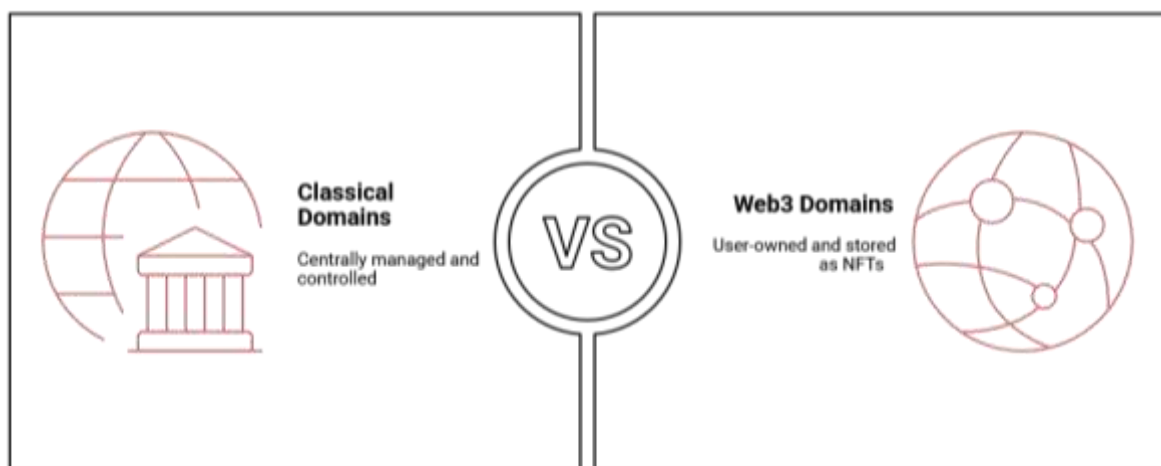
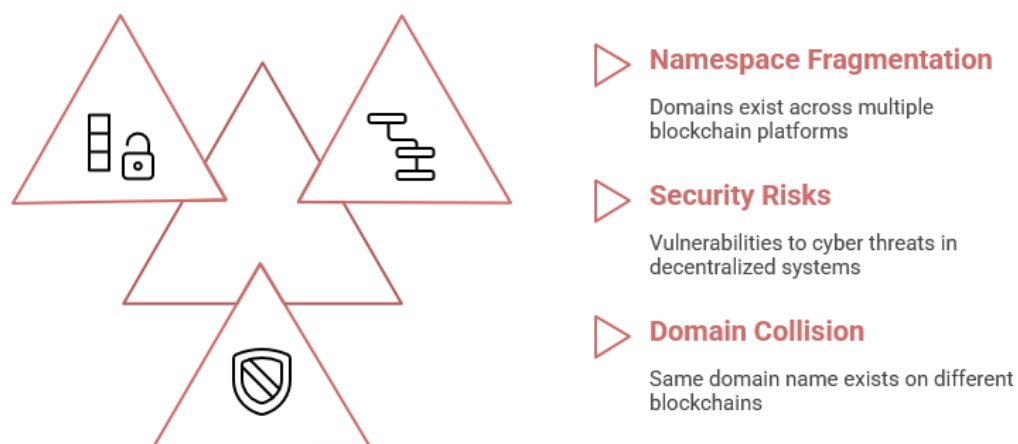
Figure 1: Classical vs. Web3 domains

Paolo Domenighetti explained that the key difference between Web3 domains and legacy domains is the ownership model. Web3 domains are stored on blockchain networks, allowing users to own their domain directly without relying on third-party intermediaries. This decentralised ownership structure creates a unique set of challenges, as blockchain technology itself is transparent but also anonymous, making it difficult to track bad actors.

Key Challenges of Web3 Domains

Domenighetti addressed several key challenges surrounding Web3 domains:

- **Namespace fragmentation**: Unlike legacy domain systems, which are managed by a centralised authority (ICANN), Web3 domains exist across multiple blockchain platforms, each with its own namespace. This fragmentation can lead to confusion and issues with domain consistency.

- **Security risks**: Like traditional legacy domains, Web3 domains are vulnerable to various cyber threats, such as phishing, spoofing, and domain hijacking. Their decentralised nature makes them harder to secure and regulate, increasing the risk of malicious activity.

- **Domain collision**: Because there is no centralised authority overseeing Web3 domains, the same domain name can exist across different blockchain platforms, leading to issues of collision. For example, a user may own a domain on the Ethereum blockchain, while someone else might have registered the same domain on a different blockchain, leading to confusion and potential security concerns.

"Web3 namespaces face the same challenges as legacy DNS but also require new security protocols to ensure safe and reliable use"

Namespace Fragmentation
Domains exist across multiple blockchain platforms

Security Risks
Vulnerabilities to cyber threats in decentralized systems

Domain Collision
Same domain name exists on different blockchains

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Figure 2: Key challenges of Web3 domains

The Noto Protocol: A Solution to Address Challenges

A solution for these challenges is the Noto protocol, which aims to create a scoring and rule-based system for resolving Web3 domains. This protocol ensures that domain resolution is prioritised based on the reliability and consistency of the data associated with the domain. The

Noto protocol is designed to avoid collisions and enhance security by formalising the resolution process.

"With the Noto protocol, we aim to create a system where the oldest and most reliable domain records take precedence, thus enhancing security and trust"

The protocol assigns a score to each domain based on factors such as the domain's age, the number of records associated with it, and whether it has been previously registered on other blockchains. This scoring system helps ensure that the most reliable and trusted domains are prioritised in resolution requests, reducing the potential for abuse or confusion.

Practical Use Cases of Web3 Domains

Domenighetti also provided practical examples of how Web3 domains work during the webinar. He demonstrated how Web3 domains can be used for cryptocurrency transactions. Instead of using a wallet address, which can be long and difficult to remember, users can send cryptocurrency by simply using a Web3 domain. For instance, users could send funds to a domain like "Paulo.eth" instead of copying and pasting a complex wallet address.
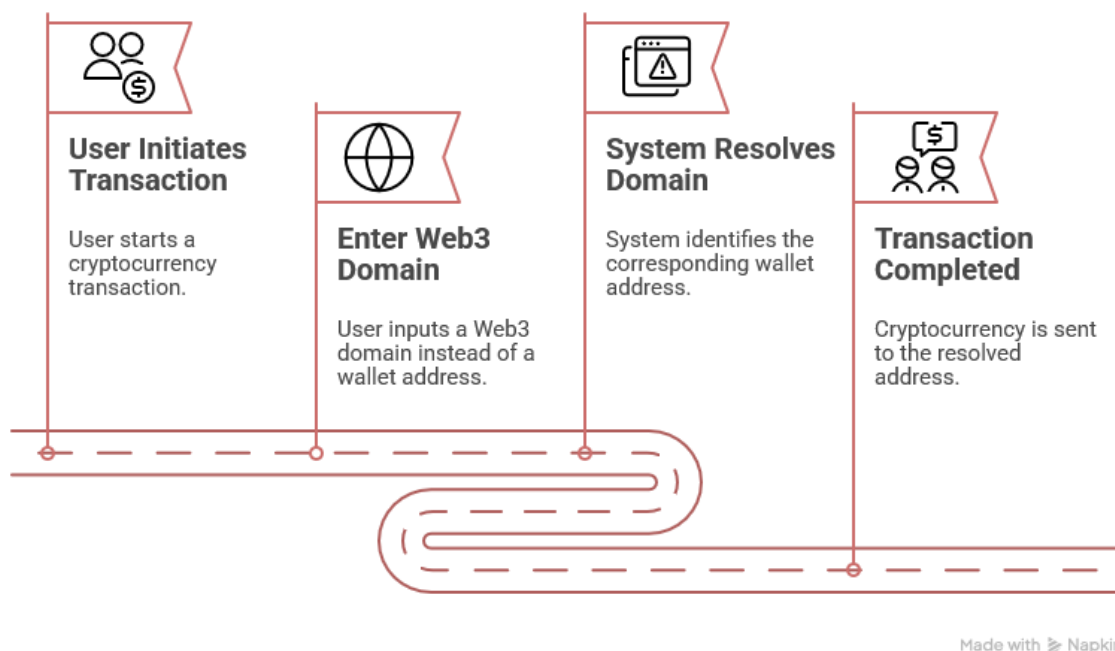
User Initiates Transaction

User starts a cryptocurrency transaction.

Enter Web3 Domain

User inputs a Web3 domain instead of a wallet address.

System Resolves Domain

System identifies the corresponding wallet address.

Transaction Completed

Cryptocurrency is sent to the resolved address.

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Figure 3: Web3 Domain Cryptocurrency Transaction Process

This feature is particularly useful for improving the user experience in the blockchain space, where long alphanumeric wallet addresses can be prone to errors and confusion. By allowing users to send cryptocurrencies to easily recognisable domain names, Web3 domains help enhance the usability of blockchain-based transactions.

The Future of Web3 Domains

Looking ahead, Domenighetti emphasised the importance of creating global standards and protocols to address the issues surrounding Web3 domains. As the Web3 ecosystem continues to grow, it will be crucial to develop solutions that ensure consistency, security, and interoperability across blockchain platforms. The creation of a unified approach will also help in preventing malicious activity, such as domain spoofing or phishing.

> *"The future of Web3 domains depends on creating global frameworks that ensure the secure and fair use of these domains across multiple blockchain platforms"*

In addition, the development of automated systems to resolve Web3 domains will be essential for improving the efficiency and accuracy of the domain resolution process. This would reduce the burden on users and increase the scalability of Web3 domains, making them more widely adopted.

Charting the Future of Web3 Domains

Paolo Domenighetti provided valuable insights into the world of Web3 domains, showcasing both their potential and the challenges they present. As the domain name system evolves, Web3 domains offer an opportunity for decentralisation and user autonomy. However, to fully realise their potential, it is essential to address issues like fragmentation, security risks, and domain collisions through protocols such as the Noto protocol.

For businesses, the adoption of Web3 domains offers opportunities to innovate in the digital space, but it also requires careful consideration of security and consistency. Policymakers will need to collaborate with industry stakeholders to develop standards and regulations that ensure the safe use of Web3 domains.

By fostering collaboration and creating robust frameworks for Web3 domains, the industry can pave the way for a more secure and decentralised future.

Webinar recording:
Navigating Web3 Domains with Freename's CTO Paolo Domenighetti

topDNS Best Practice webinars:
Previous webinars in the series are available on the topDNS website:
https://topdns.eco.de/.