



Alternative Naming System Overview



APIGA
ASIA PACIFIC INTERNET
GOVERNANCE ACADEMY



.eth

.neo

.bit

.coin



Agenda

1

Alternative Naming System Overview

- What is it?
- Technical and commercial overview

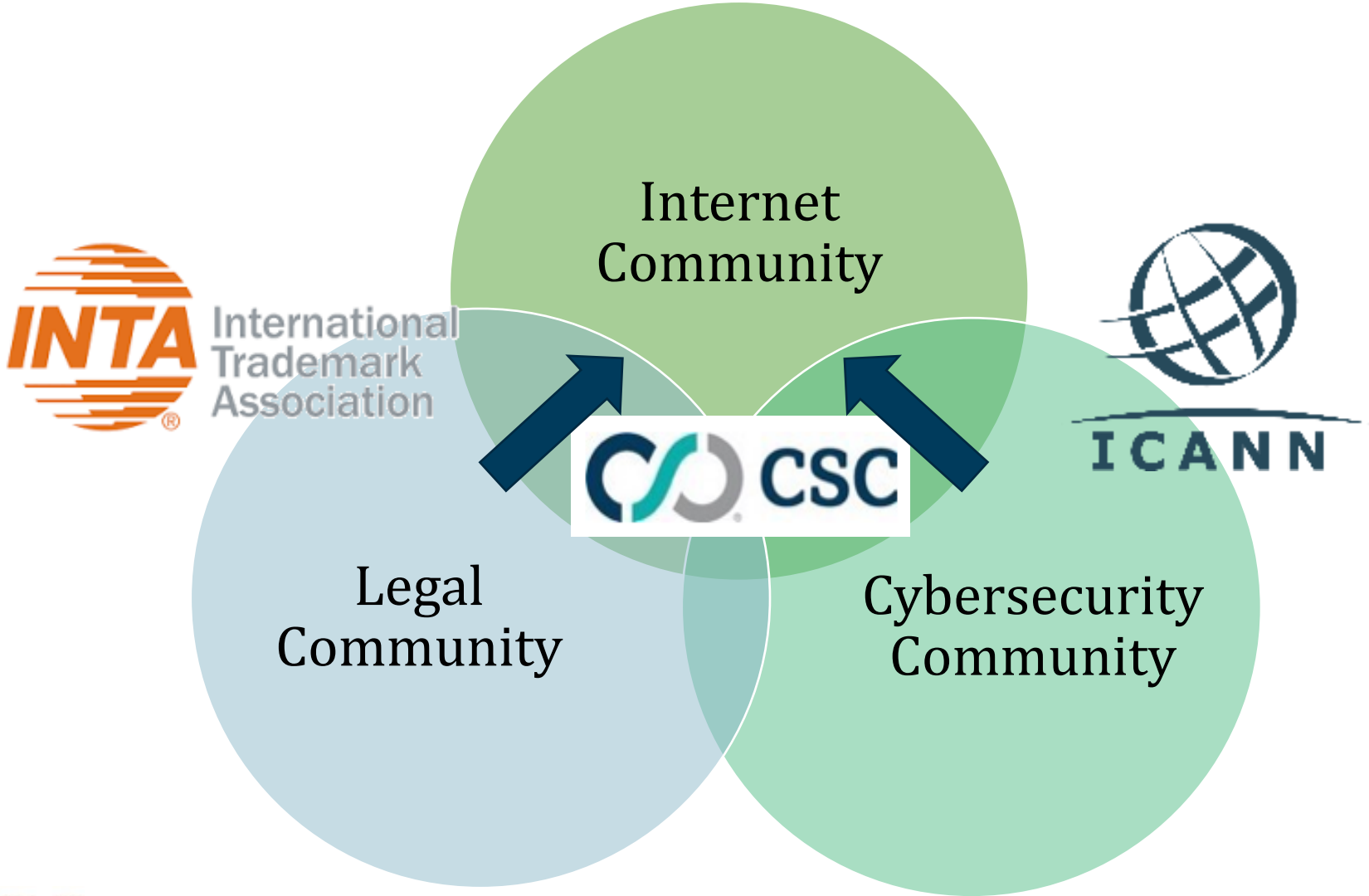
2

How should we understand this from an Internet Policy perspective?

- Impact of general Internet users
- Impact on core concept of Internet
- Impact on cybersecurity and abuses
- Impact on compliance



Who we are?



What is Alternative Naming System?

- Anything that sit outside the ICANN-administered DNS system

Alternative DNS root 🌐 8 languages ▾

[Article](#) [Talk](#) [Read](#) [Edit](#) [View history](#) [Tools](#) ▾

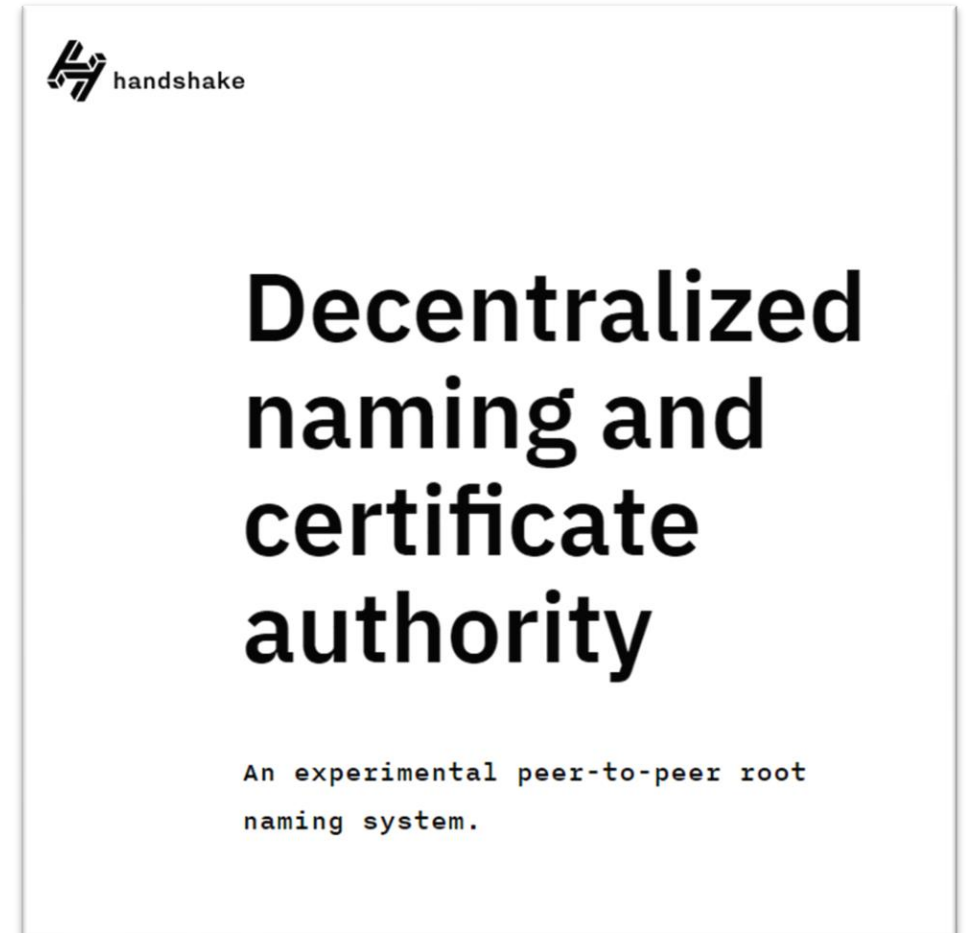
From Wikipedia, the free encyclopedia

The [Internet](#) uses the [Domain Name System](#) (DNS) to associate numeric computer [IP addresses](#) with human-readable names. The top level of the domain name hierarchy, the [DNS root](#), contains the [top-level domains](#) that appear as the suffixes of all Internet [domain names](#). The most widely used (and first) DNS root is administered by the [Internet Corporation for Assigned Names and Numbers](#) (ICANN). In addition, several organizations operate **alternative DNS roots**, often referred to as **alt roots**. These alternative domain name systems operate their own root [name servers](#) and commonly administer their own specific name spaces consisting of custom top-level domains.

The [Internet Architecture Board](#) (IAB) has spoken out strongly against alternative roots in [RFC 2826](#) ^[1]

What are examples of Alternative Root?

- Handshake or other blockchain-based domain names
- Russian National Domain Name System
 - Protect Russia Internet sovereignty
- Yeti DNS Project
 - testbed of everything runs on IPv6
- IPv9 / .chn - 「The 2nd Global Internet」



Most impactful Alternative Naming System

Web3 Domains / NFT Domain / Blockchain Domain / Crypto-domain

~6.5M

Top-level Domains

- Handshake: 12,269,119
- Decentrweb: 111,120

Second-level Domains:

- .eth: 2,978,049
- .888: 135,521
- .bitcoin: 139,335
- .blockchain: 245,698
- .crypto: 1,006,625
- .dao: 145,177
- .nft: 751,979
- .wallet: 558,842
- .x: 286,771
- .zil: 299,557

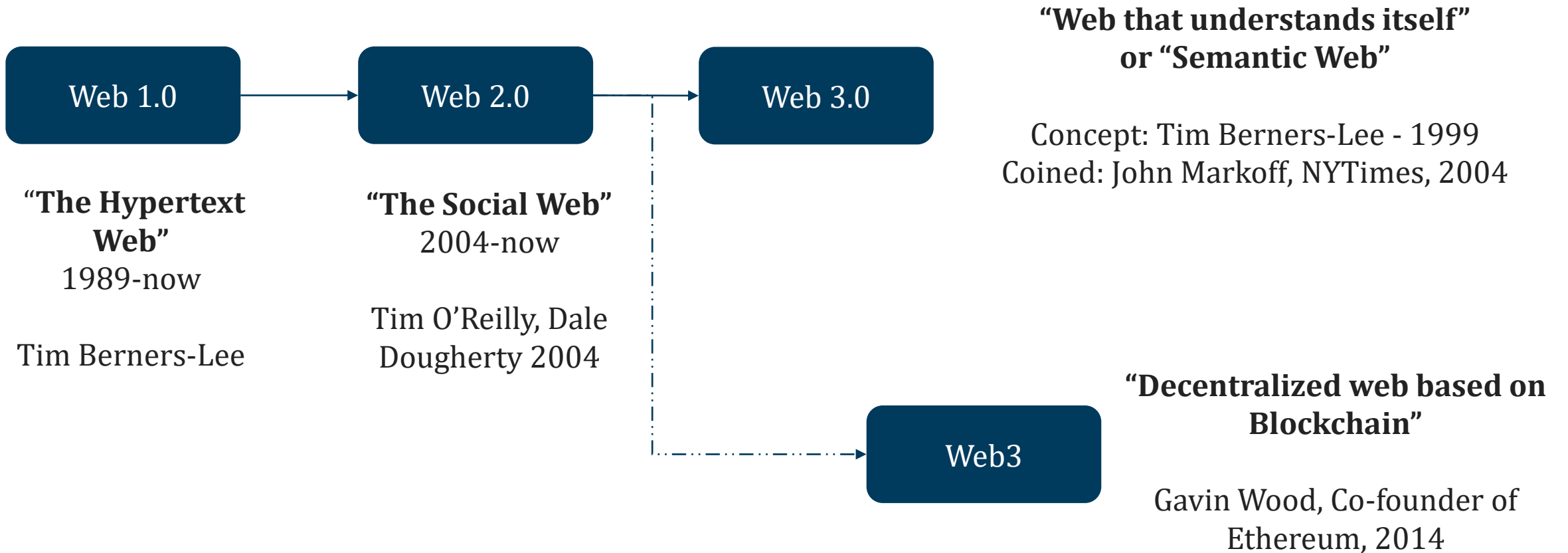
How are blockchain domains different from regular domains?

Blockchain domains differ from regular, traditional domains in several important ways. As mentioned above, blockchain domains are more open and secure due to the transparent and decentralized nature of blockchain technology.

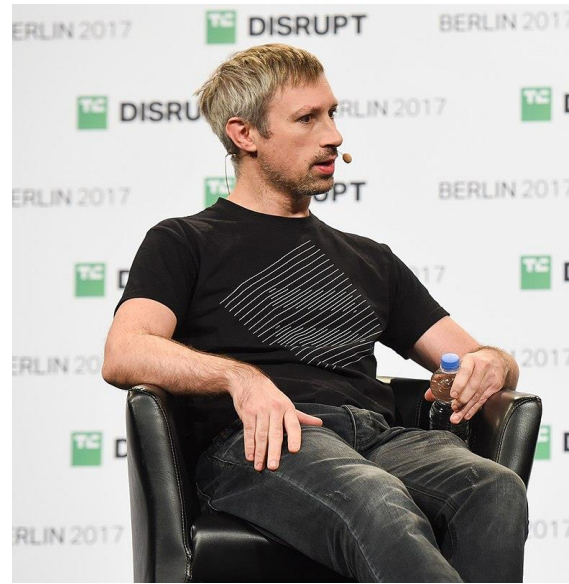
On top of that, they offer more functionality for end users. It's possible to build programs on top of your domain and run them like apps, inspect the records of existing domains, and build software to interact with them.

Whereas traditional domains are typically fairly one dimensional and serve a few narrow purposes, blockchain domains come with much more scope for interaction and tinkering.

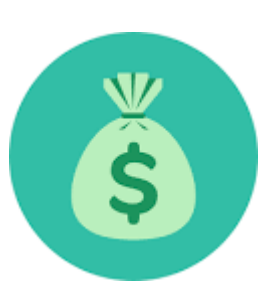
Evolution of the Web



Source: “World Wide Web and Its Journey from Web 1.0 to Web 4.0”, (IJCSIT) International Journal of Computer Science and Information Technologies



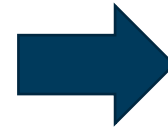
Coined by Ethereum co-founder Gavin Wood in 2014 - to fight the centralized power and dominance of a handful of Web2 giants like Facebook, Amazon, or Google by creating a **decentralized version** of the internet.



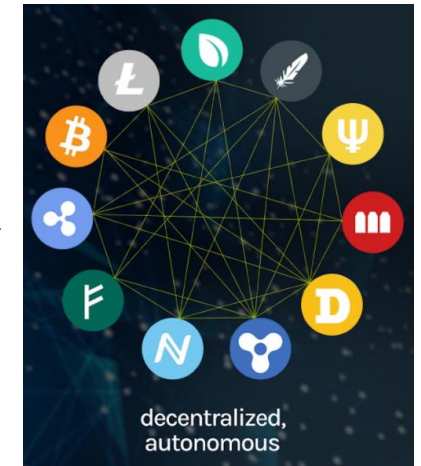
Ethereum



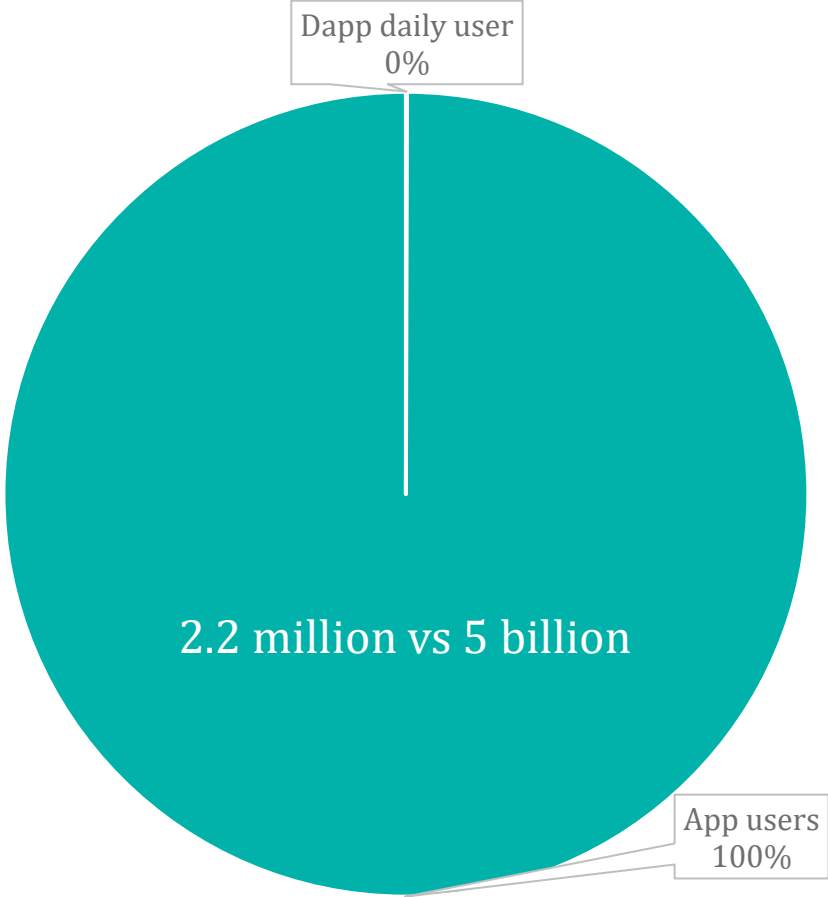
Wallet



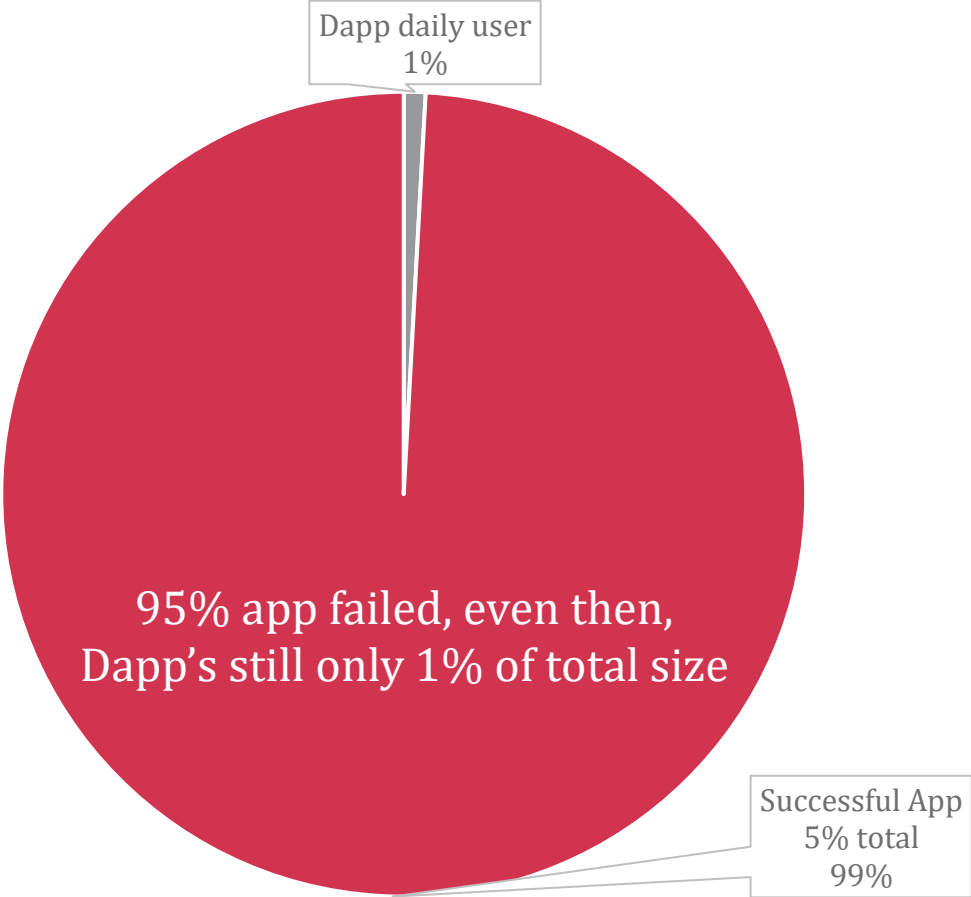
Data and Money



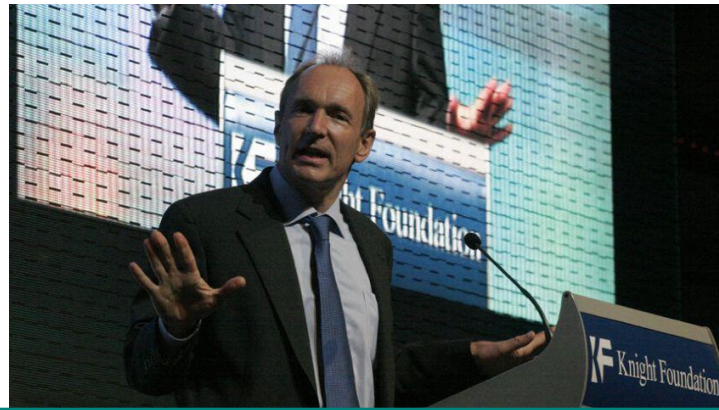
Has Web3 Overtaken the Internet?



■ Dapp daily user ■ App users



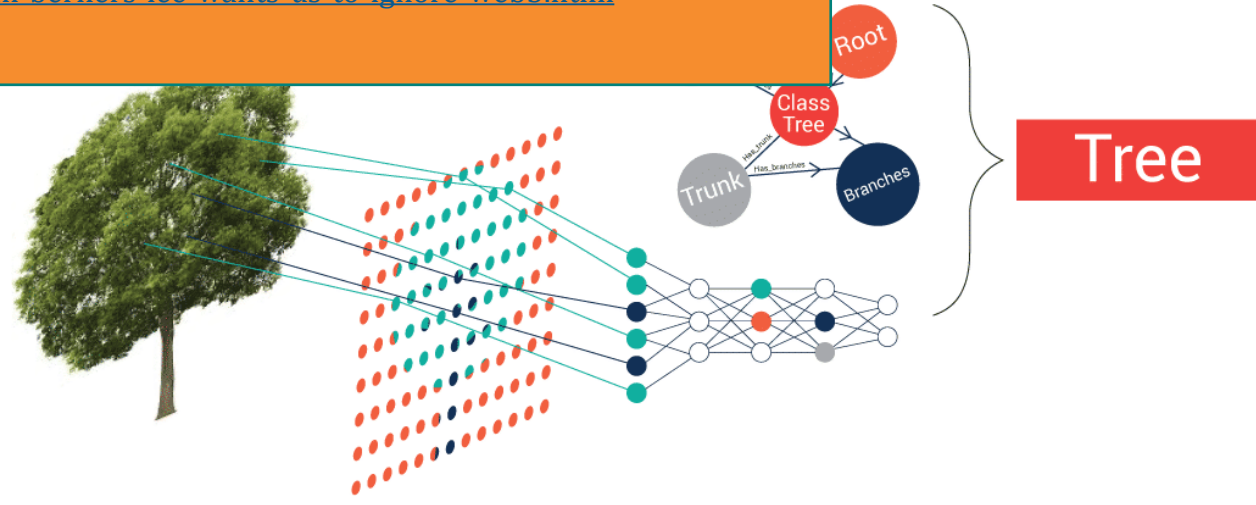
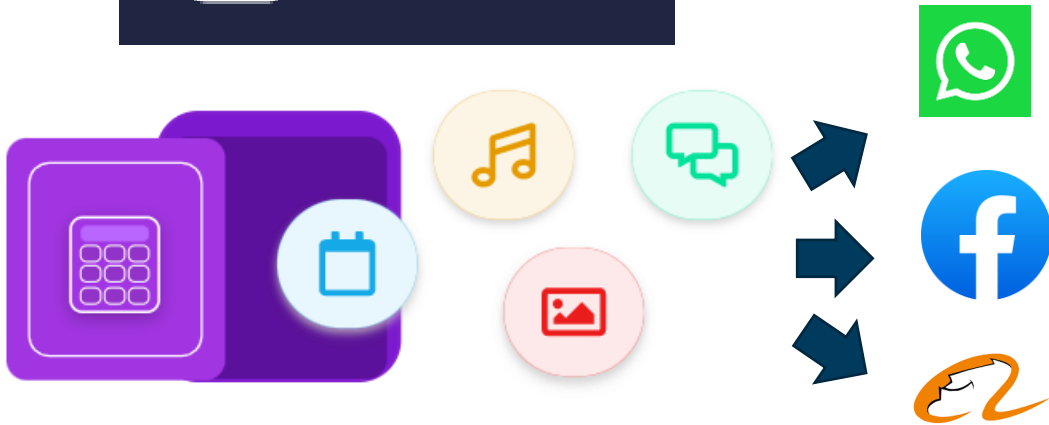
■ Dapp daily user ■ App users



Sir Tim Berners-Lee
Father of the Internet
Inventor of WorldWideWeb

Won't use Blockchain ! !
“They're too slow too expensive and too public”
<https://www.cnn.com/2022/11/04/web-inventor-tim-berners-lee-wants-us-to-ignore-web3.html>

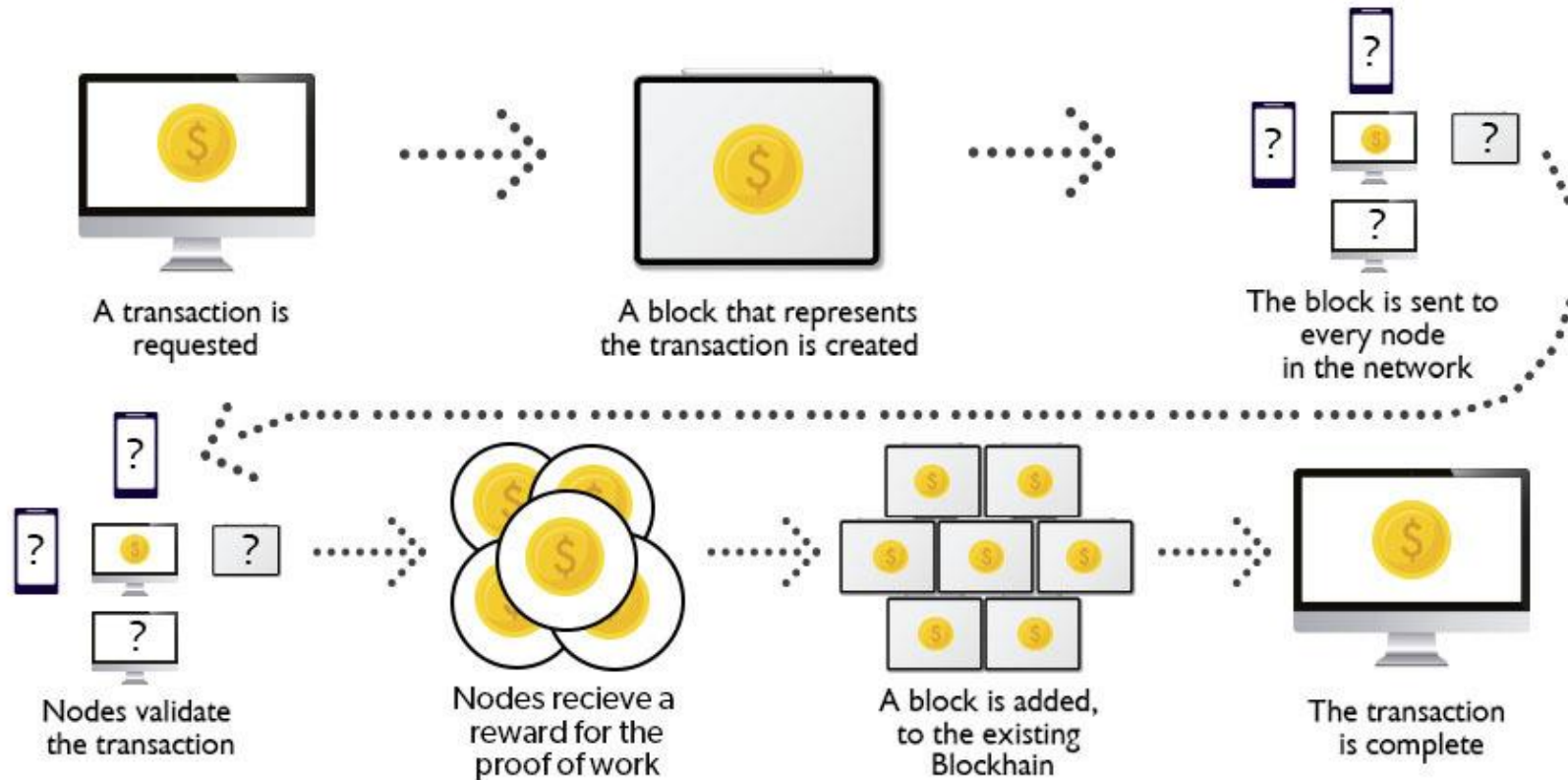
Things are
the web at the



machine-processable navigable space

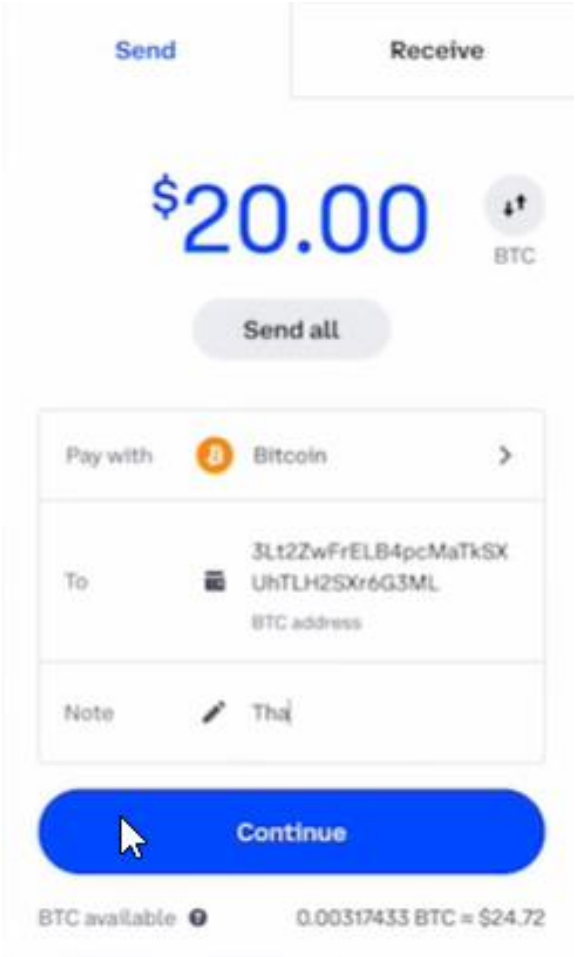
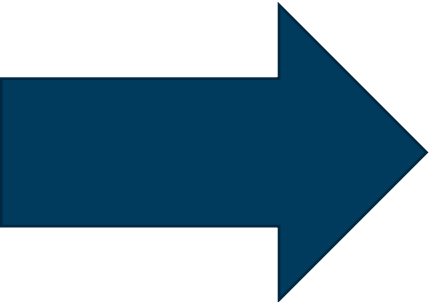
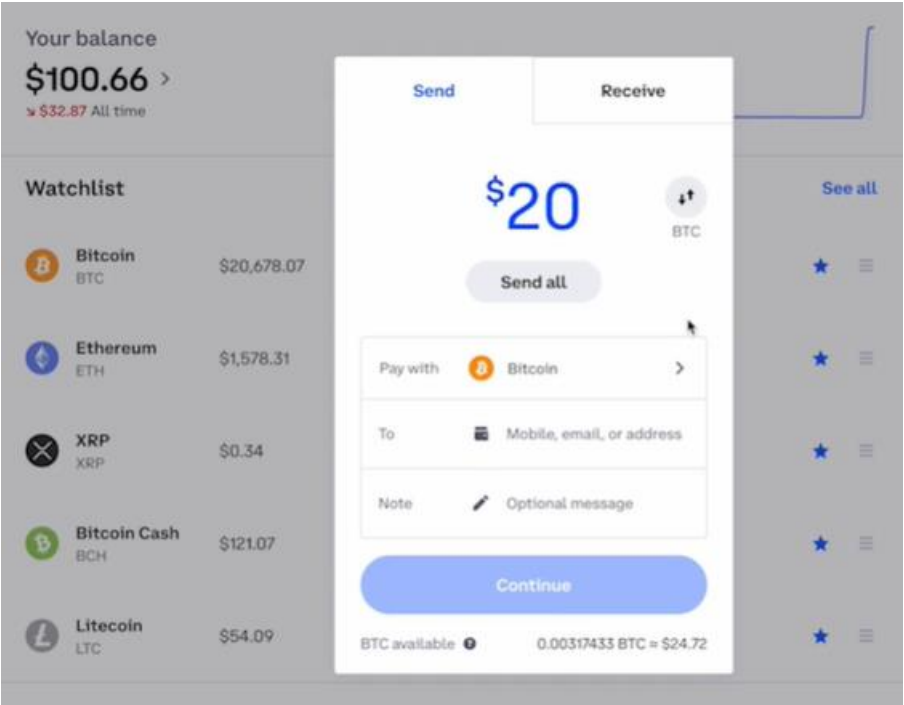
How blockchain works?

How Blockchain Works?



Source: <https://www.geeksforgeeks.org/how-does-the-blockchain-work/>

Blockchain/web3/NFT Domain — Why does it exist?

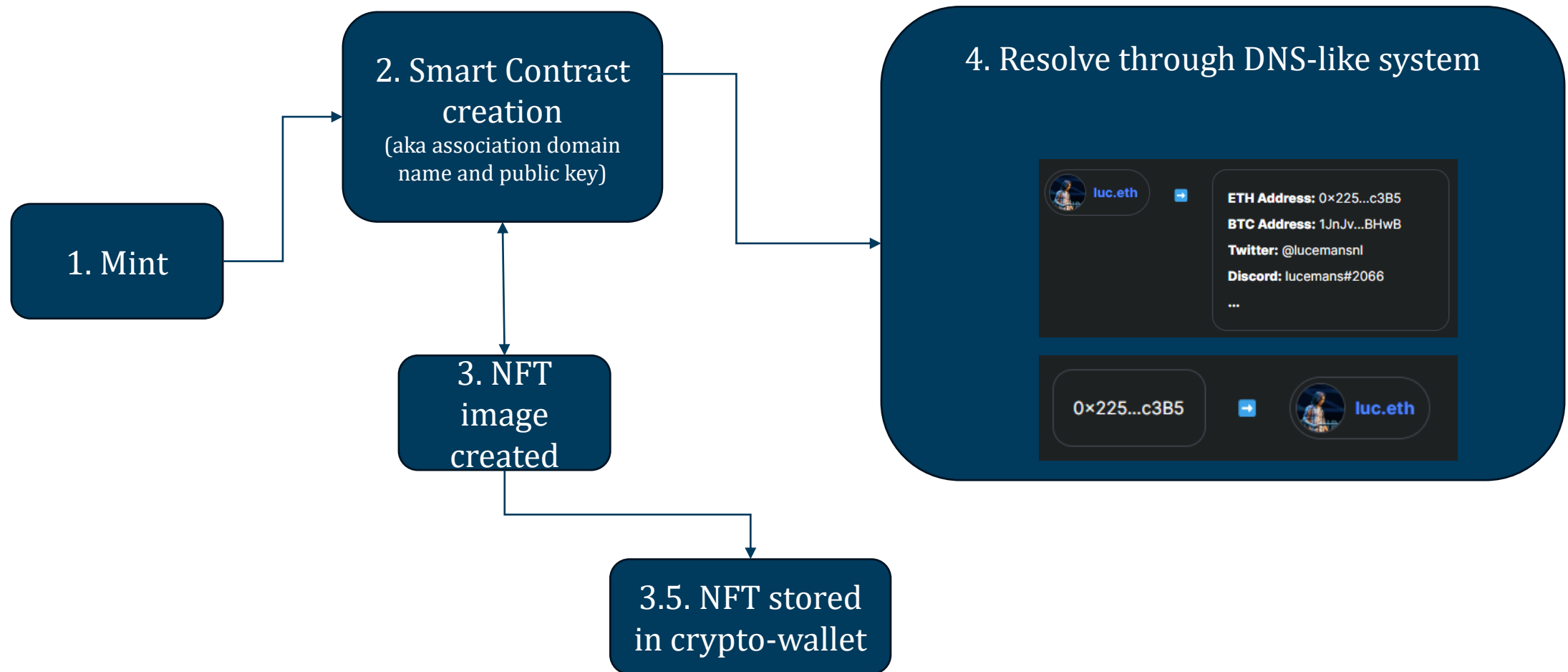


3HLgeYTuBkznzJ5d9oveLTxqJxpbpL420h

Public Key



How blockchain “domain” works?



What is NFT (Non-Fungible Token)?

Non-Fungible = not replaceable by another identical item; not mutually interchangeable.

A diagram illustrating the concept of an NFT. It shows several Bitcoin symbols (₿) and a banknote, with dotted lines connecting them to several NFT tokens. The NFT tokens are depicted as coins with 'NFT' written on them. The background is light blue.

Non-Fungible Token (NFT)
[en-(.)ef-'tē]

A cryptographic asset on a blockchain with unique identification codes and metadata that distinguish them from each other.

Investopedia

NFT Domain



- .wallet
- .coin
- .zil
- .crypto
- .x
- .bitcoin
- .888
- .nft
- .dao
- .blockchain

.ETH



“Real” internet vs Web3

Internet	Web3
Works anywhere, any device	Work only if you have plugin, or through a “linking” service in normal domain name
Decentralised technology, but with a concentrating trend	Decentralised in fundamental technology, but actually very concentrated in many aspects
Decentralised in policy – ICANN is not one central authority, but multi-stakeholder model	Centralised in policy (DAO – but what about ownership concentration?)

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NFT Domain – impact of general Internet users



Tech

Web3 Domain Name Service Could Lose Its Web Address Because Programmer Who Can Renew It Sits in Jail

Eth.link expired on July 26 and will be up for grabs on Sept. 5, according to GoDaddy.

By Elizabeth Napolitano, Margaux Nijkerk  Aug 27, 2022 at 6:30 a.m. Updated Aug 30, 2022 at 1:32 a.m.

That's because the only person with the authority to renew the domain, [Virgil Griffith](#), is serving a 63-month prison sentence for helping North Koreans use cryptocurrencies to circumvent sanctions and has been unable to renew the domain from prison. According to a [notice](#) domain registrar GoDaddy published on its website late Friday, [eth.link](#)

The DAO relied on the [eth.link](#) site to provide access to information about all ENS names

Consumer protection

+ socialplatforms/	9,001.00 HNS	Review & Purchase
+ attorneyfind/	16,299.00 HNS	Review & Purchase
+ xn--g1aic9ec/ (зямля)	99,999.00 HNS	Review & Purchase
+ johncoltrane/	69,420.00 HNS	Review & Purchase
+ dominosugar/	40,000,000.00 HNS	Review & Purchase
+ opeso/	3,500.00 HNS	Review & Purchase
+ ecojet/	25,000.00 HNS	Review & Purchase
+ liquidationsale/	1,000,000.00 HNS	Review & Purchase

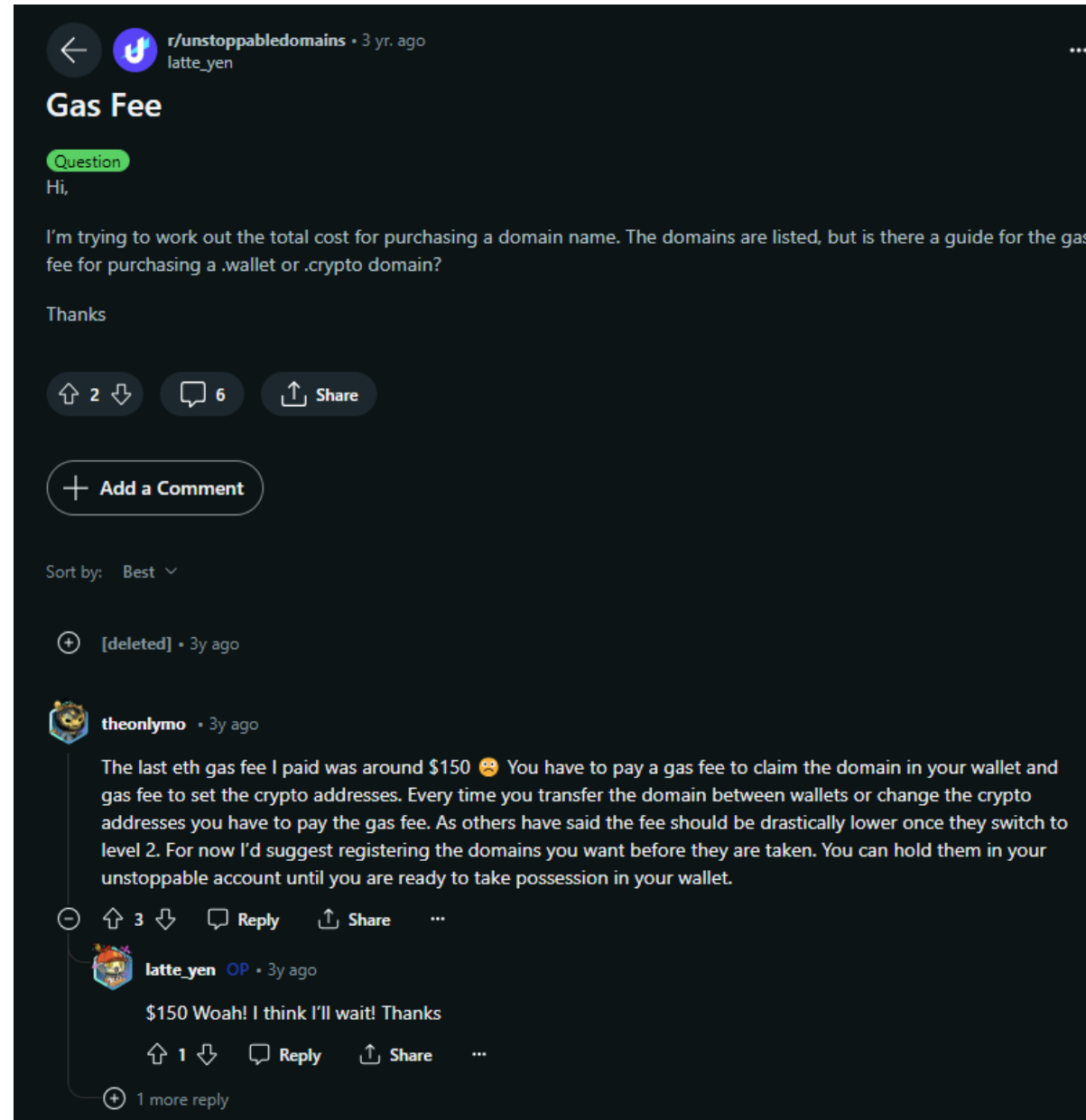
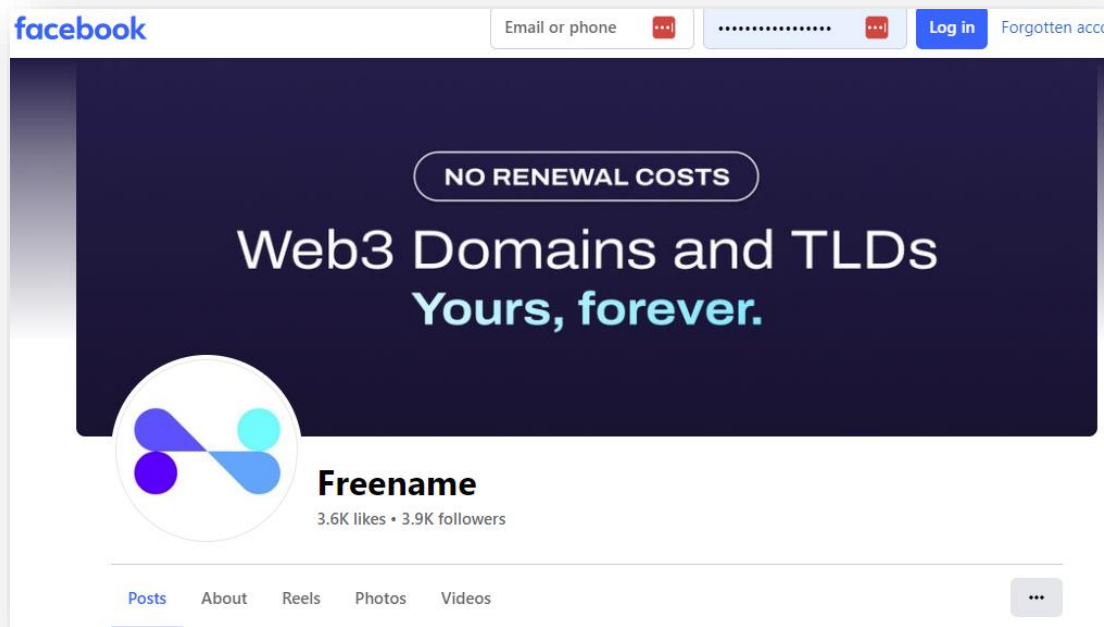
1 HNS = 0.36 USD

1 HNS = 0.022 USD



14,400,000 USD
To
880,000 USD

Gas fee – the hidden cost



What if we remove Gas-fee?

- Unstoppable used to be using Ethereum, which has really high gas fee
- Move to Polygon – a low-cost layer-2 chain based on Ethereum
- Can it be free forever?
- Would the consumer lose the domain if it doesn't survive?
 - What's the ICANN policy in comparison?



Polygon (MATIC) Gas Fee Spikes 13,250% to 4,005 gwei as Daily Txns Hit Yearly Peak Above 6M

DATE: NOVEMBER 16, 2023 WRITTEN BY: SAM WISDOM RAPHAEL



Crypto

Polygon Labs lays off 60 employees, about 19% of its staff, CEO says

Jacquelyn Melinek @jacqmelinek / 4:41 AM GMT+11 • February 2, 2024

Comment



NFT Domain – impact on core concept of Internet



One World, Crashing Internet



@ News · Technology

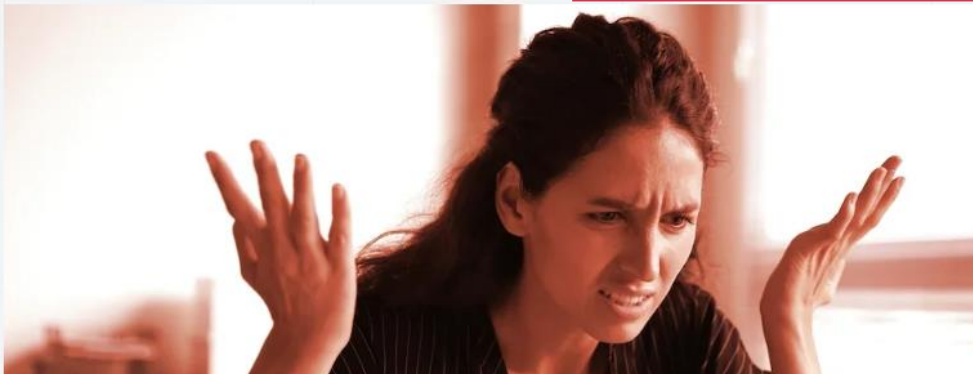
Unstoppable Domains Stops Selling .Coin Domains After Realizing They've Existed for Years

Emercoin has been offering .coin domains since 2014, so Unstoppable Domains is cutting services to these NFTs and issuing refunds.

By [Andrew Hayward](#)

- “Emercoin” created “.Coin” earlier than Unstoppable
- Built on different blockchain
- Unstoppable terminated .COIN based on principle of first come first serve

No evil ICANN, no one can delete it?



“Naming collisions are dangerous for the Unstoppable community and for [Web3](#) as a whole,” the firm wrote. “Multiple versions of a [top-level domain] could cause chaos.”



Battle of the .wallet

- Gateway.io – created .wallet in July 31, 2020 under Handshake
- Unstoppable – create .wallet in Summer (US) 2021 under their own chain
- Unstoppable filed a lawsuit suing Gateway to “engaged in a campaign of chaos”

“ By being the first to make commercial use of the .WALLET mark, Unstoppable Domains has acquired the right to exclude others from using the .WALLET mark, or any similar mark that is likely to cause confusion in the marketplace.



ARTICLES ▾

PODCAST

ABOUT

ADVERTISE



FEATURED DOMAIN ADS

.RICH
THE WORLD'S MOST EXCLUSIVE ADDRESS

.link

.STORE

dynadot

[Home](#) > [Policy & Law](#)

Unstoppable Domains and .wallet Handshake owner file dueling lawsuits



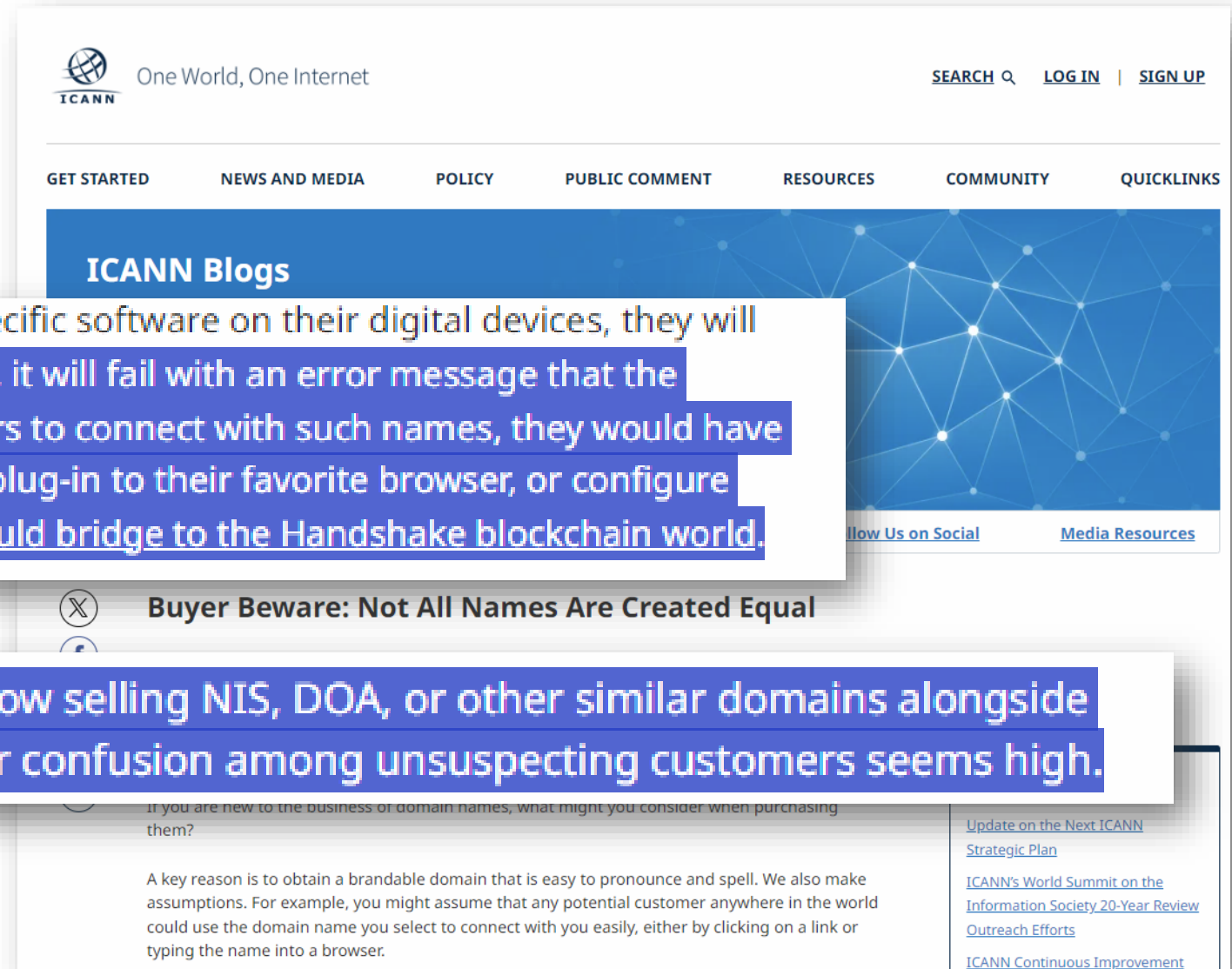
[Andrew Allemann](#)

[8 Comments](#)

September 23, 2022

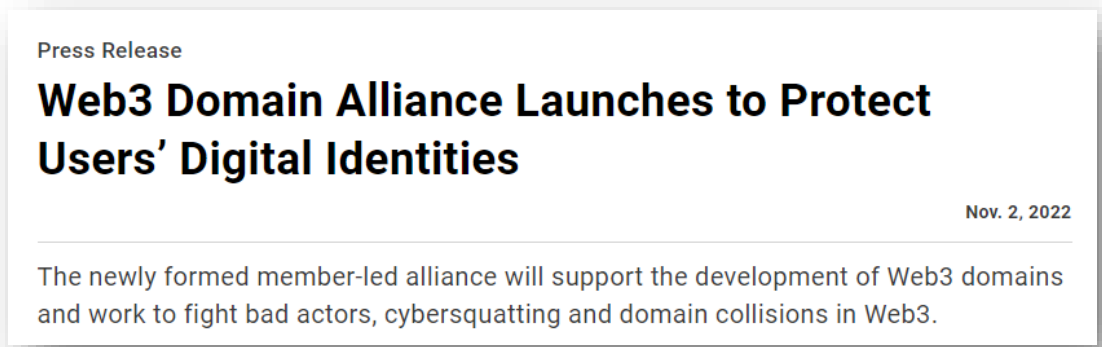
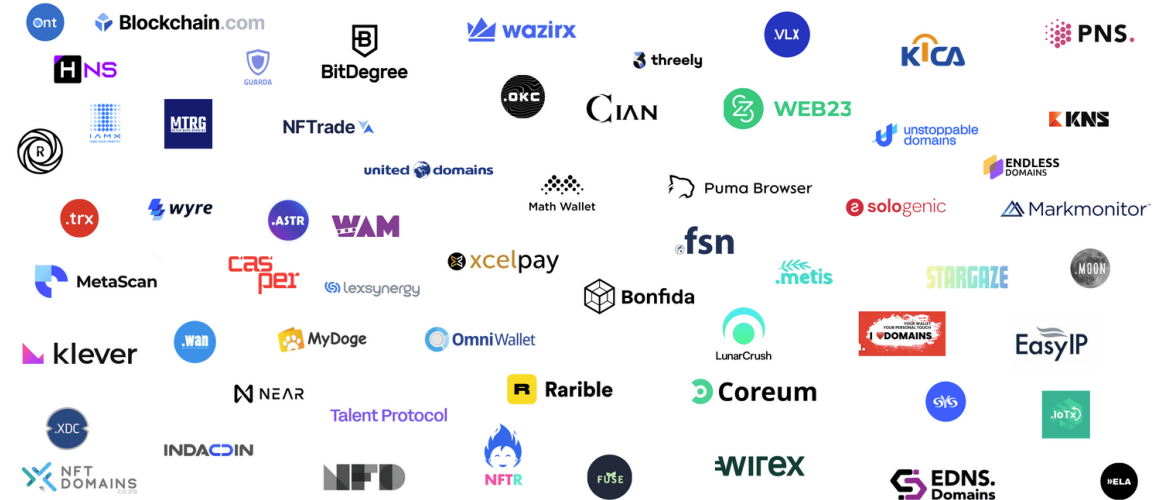
Fight escalates between Unstoppable Domains and Handshake.

Warning from ICANN



Web3 “New” initiative to re-create ICANN – Nov 2022

- “Advance interoperability of Web3 domain registries and better secure digital identities by preventing, for example, cybersquatting.”
- Sandy Carter, senior vice president and channel chief of Unstoppable Domains:
- coalition is “dedicated to creating the equivalent to how Web2 domain names are organized by the Internet Corporation for Assigned Names and Numbers (ICANN)”
- “Today, there is no such governing body for Web3 domains”, she noted.



Blockchain/NFT Domain going into ICANN world

- More and more “Web3 Domain” companies planned to apply for New gTLD
- Some have even “applied” Before next round opened

Freename tries to bridge DNS and blockchain

Kevin Murphy, February 26, 2024, 15:25:13 (UTC), Domain Tech

Swiss blockchain naming startup Freename has released a service it says it hopes will help make blockchain-based naming

GoDaddy's GlobalBlock supports blockchain names

Kevin Murphy, February 29, 2024, Domain Services

GoDaddy's Brand Safety Alliance has finally released the list of TLDs supported by its new GlobalBlock brand protection service, and it's notable for including a couple dozen domain extensions

WebUnited inks deal to “mirror” country's TLD in the blockchain

Kevin Murphy, February 12, 2024, Domain Registries

Blockchain domains startup WebUnited says it has signed up its first registry client to a service that allows domain names to be “mirrored”

Another crypto firm to apply for a new gTLD

Kevin Murphy, February 1, 2024, Domain Services

D3 Global, the new gTLD consultancy specializing in cryptocurrency and blockchain clients, has signed up its third public client.

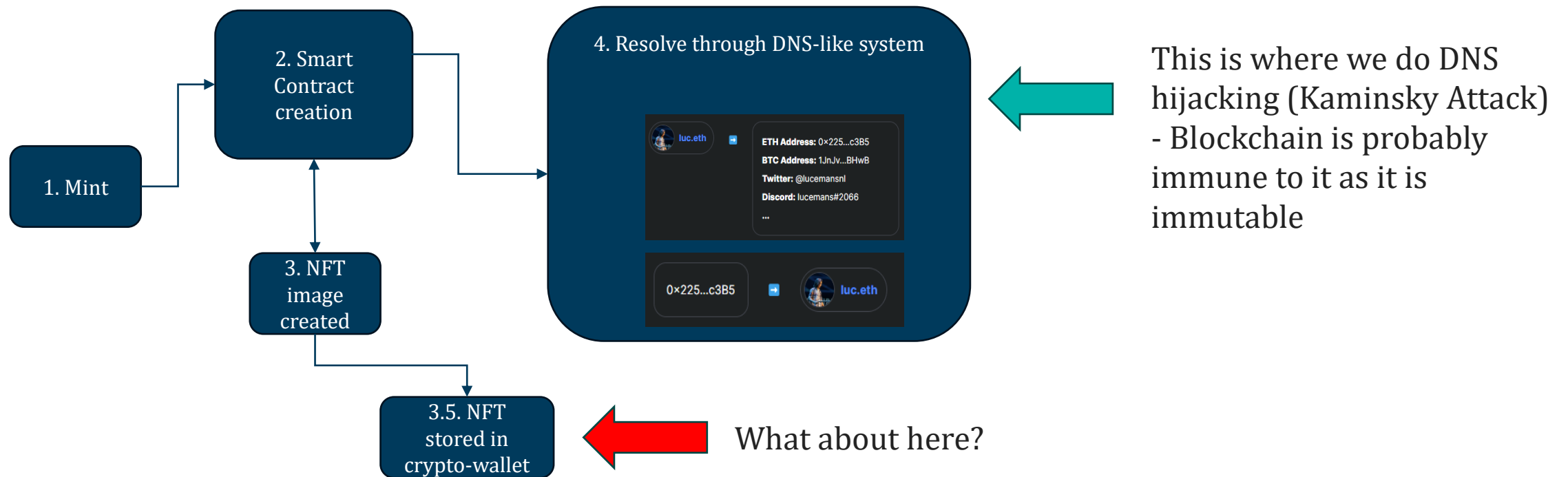


NFT Domain – impact on Cybersecurity and DNS abuses



Cyber-security – is blockchain really safe?

Yes!



Cyber-security – is blockchain really safe?

- Huge cybersecurity concern over blockchain technology
1. Digital asset can still be stolen by hijacking where you store the private key
 2. Once it is done, it cannot be reversed

CRYPTO / NFTS / TECH

\$1.7 million in NFTs stolen in apparent phishing attack on OpenSea users



Illustration by Alex Castro / The Verge

/ Two hundred and fifty-four tokens were stolen over roughly three hours

By Russell Brandom

Feb 21, 2022, 1:37 AM GMT+11

[Link](#) [Facebook](#) [Twitter](#) | [Comments \(0 New\)](#)

Web3 is good for phishing?

Phishing Campaigns Abusing Web3 Platforms Increases 482% in 2022

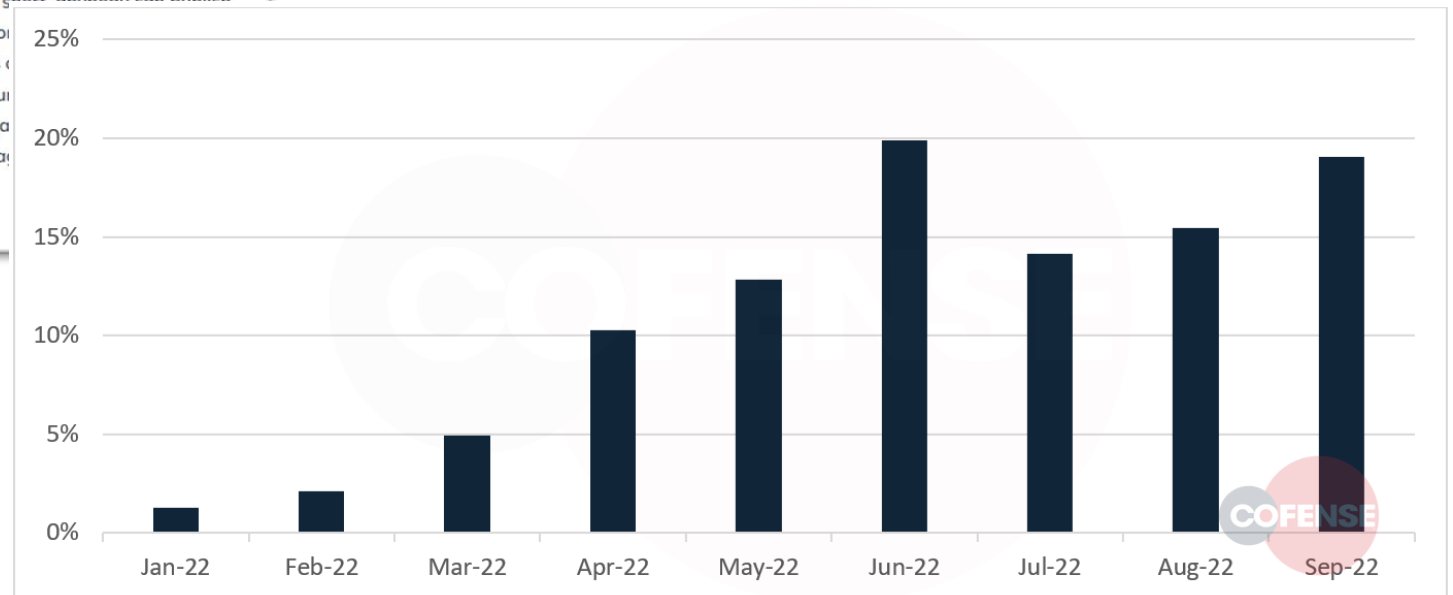
November 8, 2022

Home » Blog » Phishing Campaigns Abusing Web3 Platforms Increases 482% in 2022

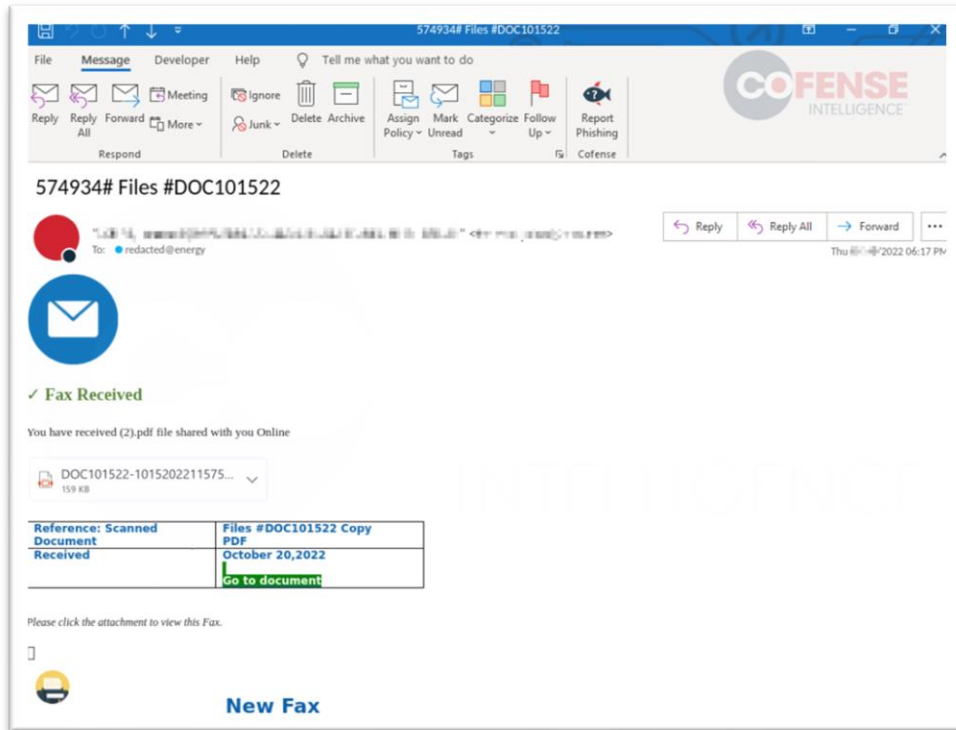
The term "Web3" refers to a set of technologies intended to decentralize common Internet and computing activity. Proponents of decentralization tout the ability to host content without the need for large technology companies. In short, anybody can publish any content, avoiding technical problems like server management as well as legal problems or censorship. Features like easy, robust hosting for malicious content make the technologies attractive to threat actors seeking easy, robust hosting for malicious content. In this report, we analyze the abuse of Web3 platforms for phishing during the first three quarters of 2022. In this report, we explain why Web3 platforms are good for phishing threat actors and analyze the growth and other trends in malicious Web3 usage.

Why Web3 Is Good for Phishing Threat Actors

- Link to cryptocurrency for payment
- A lot of hype but no one really understands it
- Easy to hide identity
- Cannot reverse the money once you stole it
- IPFS hosting is hard to takedown – might be even permanent

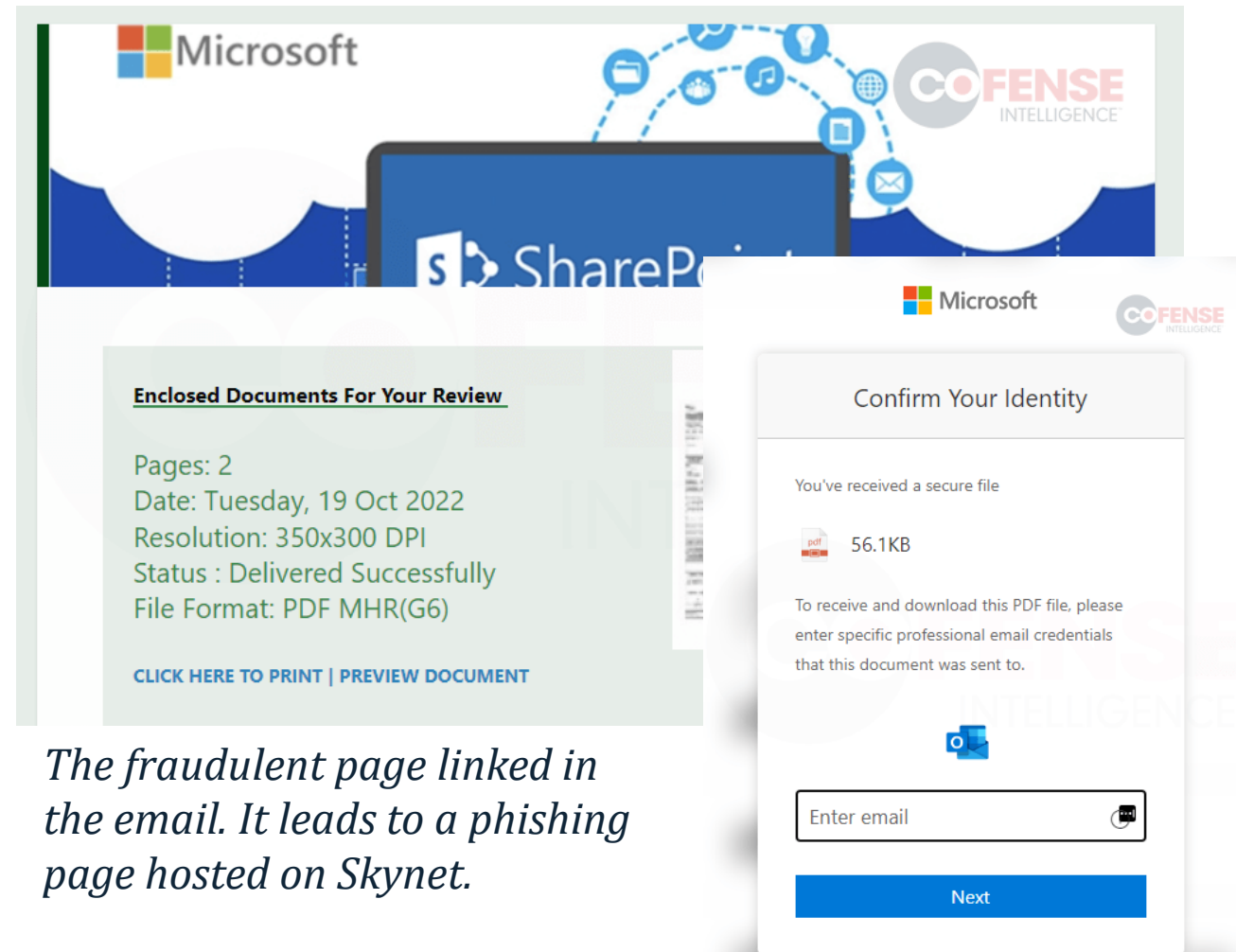


Web3 phishing example



A fax-themed email linking to a fraudulent page hosted on the Microsoft Customer Voice service.

Source: <https://cofense.com/blog/phishing-campaigns-abusing-web3-platforms-increases-482-in-2022/>

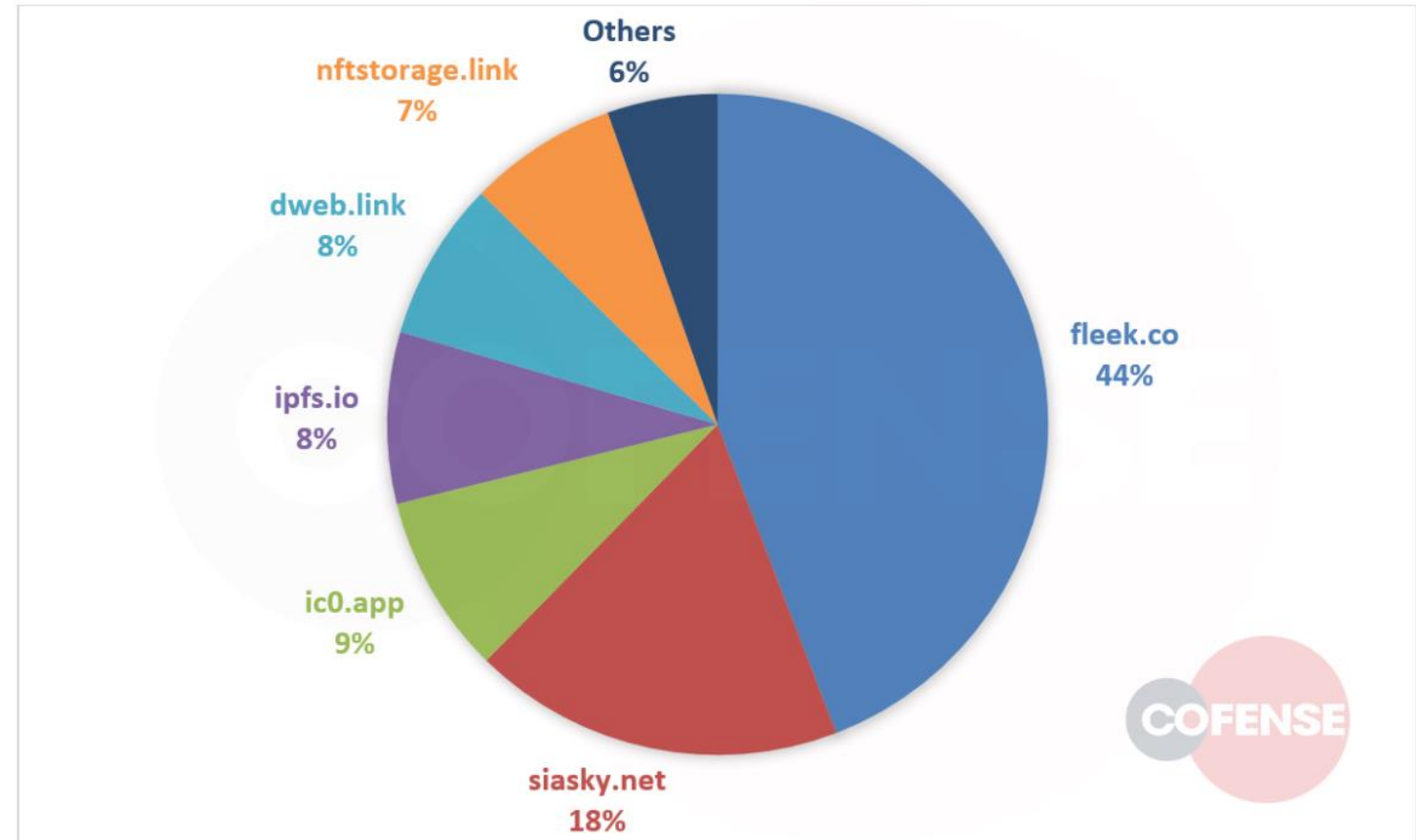


The fraudulent page linked in the email. It leads to a phishing page hosted on Skynet.

The Skynet-hosted phishing page linked by the campaign

Web3 phishing is also non-existence

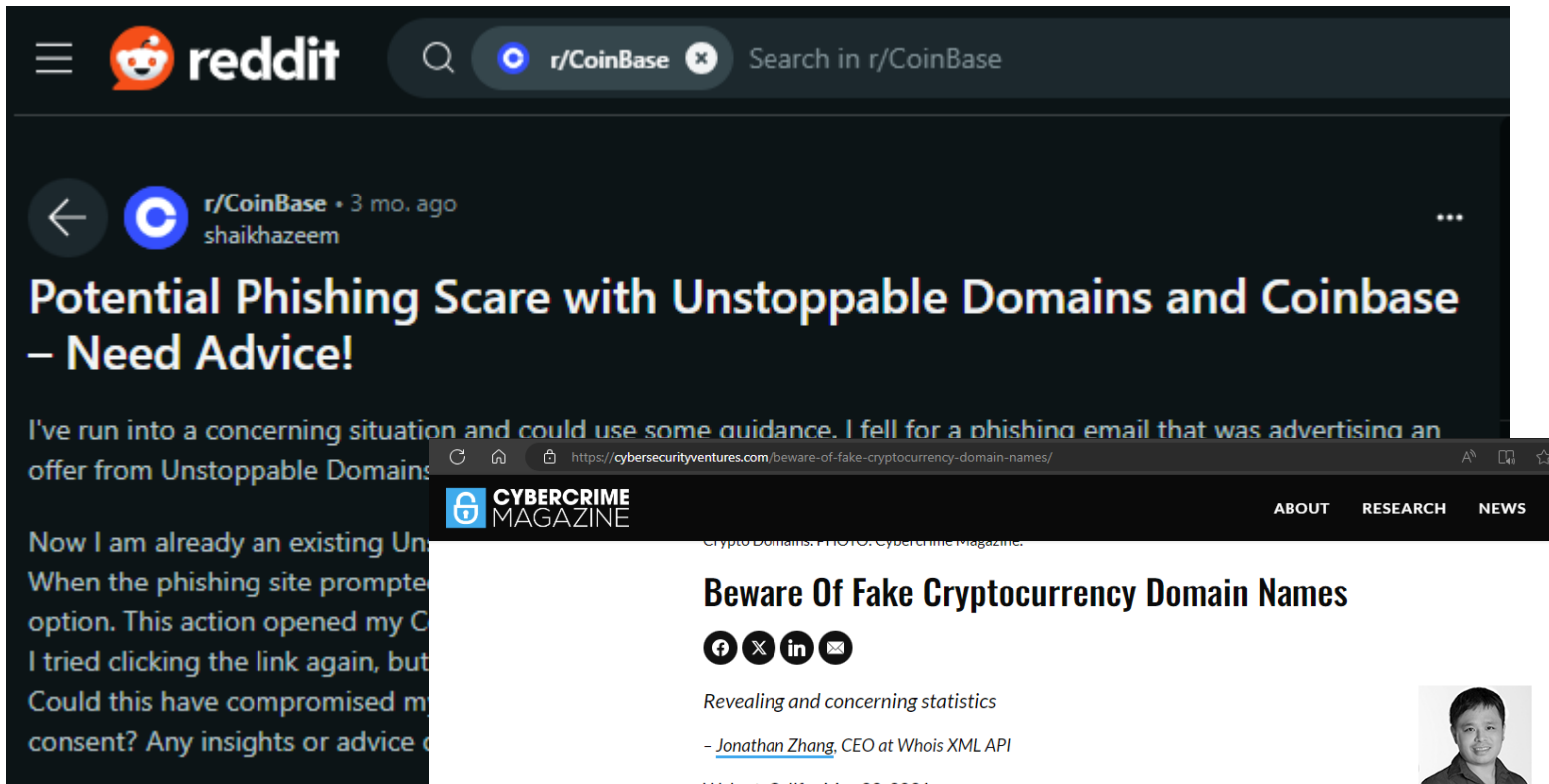
- Everything requires a REAL URL as no one can really access Web3 content
- Done via “Gateway URL” provider
- What does Web3 add-value to internet security in practice?



Most popular services used to create “gateway” URL for the phishing attack.

Source: <https://cofense.com/blog/phishing-campaigns-abusing-web3-platforms-increases-482-in-2022/>

Crypto-related domain in traditional domain system



- More than 30,000 crypto-related domains and subdomains were identified as suspicious or at least worth investigating.
- 94 percent of the sampled domains either had privacy-protected, undisclosed, or redacted registrant email addresses, making it hard to attribute ownership.

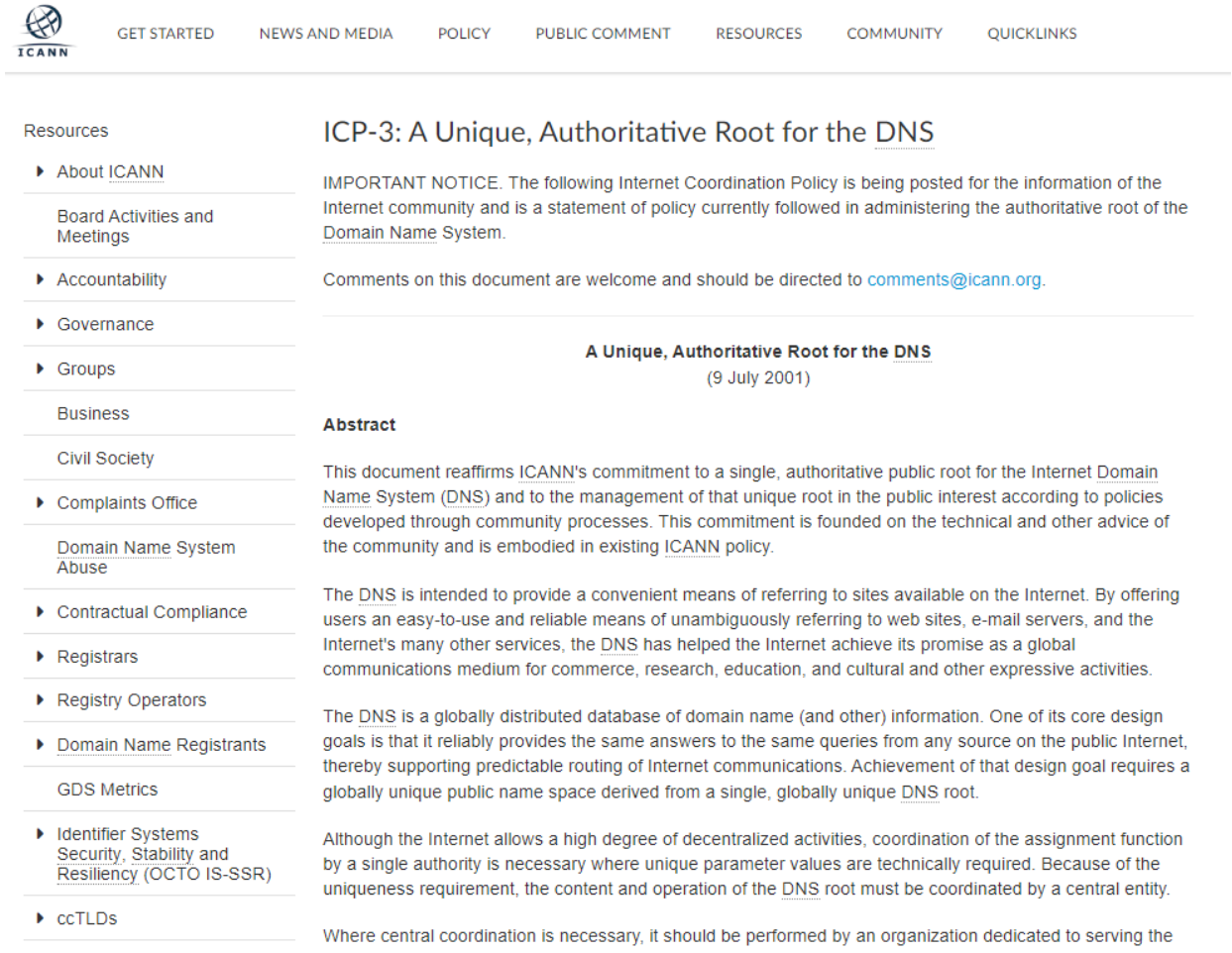


NFT Domain – impact on Intellectual Property and Compliance



ICANN Principle to uphold One World One Internet

- Very important text that sets out the commonly accepted policy of the Internet
- ICP-1 – set out the responsibility of IANA
- ICP-2 – set out the criteria of new Regional Internet Registries (RIR)



The screenshot shows the ICANN website's 'Resources' page. The navigation bar includes 'GET STARTED', 'NEWS AND MEDIA', 'POLICY', 'PUBLIC COMMENT', 'RESOURCES', 'COMMUNITY', and 'QUICKLINKS'. The 'Resources' sidebar lists various categories such as 'About ICANN', 'Board Activities and Meetings', 'Accountability', 'Governance', 'Groups', 'Business', 'Civil Society', 'Complaints Office', 'Domain Name System Abuse', 'Contractual Compliance', 'Registrars', 'Registry Operators', 'Domain Name Registrants', 'GDS Metrics', 'Identifier Systems Security, Stability and Resiliency (OCTO IS-SSR)', and 'ccTLDs'. The main content area displays the document 'ICP-3: A Unique, Authoritative Root for the DNS'. It includes an 'IMPORTANT NOTICE' about the policy, a comment link to comments@icann.org, the document title 'A Unique, Authoritative Root for the DNS' dated 9 July 2001, an 'Abstract' section, and introductory text about the DNS's role in the Internet.

ICP-3



In fact, some of the operators of these alternate roots state that stability is not an important attribute for the DNS. This thesis, for reasons already stated, is at fundamental variance with ICANN policy as embodied in its founding documents. Some of these operators and their supporters assert that their very presence in the marketplace gives them preferential right to TLDs to be authorized in the future by ICANN. They work under the philosophy that if they get there first with something that looks like a TLD and invite many registrants to participate, then ICANN will be required by their very presence and force of numbers to recognize in perpetuity these pseudo TLDs, inhibiting new TLDs with the same top-level name from being launched through the community's processes.



No current policy would allow ICANN to grant such preferential rights. To do so would effectively yield ICANN's mandate to introduce new TLDs in an orderly manner in the public interest to those who would simply grab all the TLD names that seem to have any marketplace value, thus circumventing the community-based processes that ICANN is required to follow. For ICANN to yield its mandate would be a violation of the public trust under which ICANN was created and under which it must operate. Were it to grant such preferential rights, ICANN would abandon this public trust, rooted in the community, to those who only act for their own



Alternate roots inherently endanger DNS stability –

Cybersquatting and IP Abuse



Your Cart 8


Bulk Unstoppable Vault  
\$99 per year. Store an unlimited number of domains in a custodial vault with Unstoppable Vault


AI Art BETA  
\$14.99. Generate 200 mind-blowing avatars for your domain. Includes 1 free NFT mint.

Sponsored Badge  
\$9.99 per year. Attract fans, boost visibility, and showcase your NFT communities.

Unstoppable Vault for all domains in the cart


 **tsmc.x** \$400 

Own forever \$0, no renewals 

Unstoppable Vault +\$10/year 


\$410

Order summary























Discounts 
[Add a discount code](#)

Do you live in the USA?
We need your ZIP code due to the USA tax policy.
 Yes No

Subtotal \$1,520.00
Unstoppable Vault \$74.00
Total due \$1,594.00

[Go to Checkout](#) 

unstoppable domains Search Explore ...

<input checked="" type="checkbox"/>	 tsmc.x	\$400		<input type="text" value="()"/>
<input checked="" type="checkbox"/>	 tsmc.nft	\$200		<input type="text" value="()"/>
<input checked="" type="checkbox"/>	 tsmc.polygon	\$200		<input type="text" value="()"/>
<input checked="" type="checkbox"/>	 tsmc.pudgy	\$100		<input type="text" value="()"/>
	 tsmc.com Taken			Add to Cart
<input checked="" type="checkbox"/>	 tsmc.unstoppable	\$20		<input type="text" value="()"/>
	 tsmc.eth Taken			Profile
<input checked="" type="checkbox"/>	 tsmc.dao	\$200		<input type="text" value="()"/>
<input checked="" type="checkbox"/>	 tsmc.888	\$200		<input type="text" value="()"/>
<input checked="" type="checkbox"/>	 tsmc.bitcoin	\$200		<input type="text" value="()"/>

- \$1,520 once off with no renewal fee, BUT
- \$74 USD per year recurring fee for “Vault”

Intellectual Property Infringement

- Immutability

```
amazon🛒📦.eth  
apple📱.eth  
https://www.coca-cola.com/.eth  
google📄.eth  
🔴🟡mastercard.eth  
🍔mcdonalds®.eth  
microsoft📄pro.eth  
•tencent.eth  
@visa.eth  
louisvuitton❤️.eth
```

- Not actually, most Web3 contents are saved in traditional hosting infrastructure. But still, it is very hard to know

ICANN compliance – DNS Abuse



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Public Comment

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Closed: Amendments to the Base gTLD RA and f to Modify DNS Abuse Contract Obligations

Category: Other

Requesters: ICANN org

Outcome

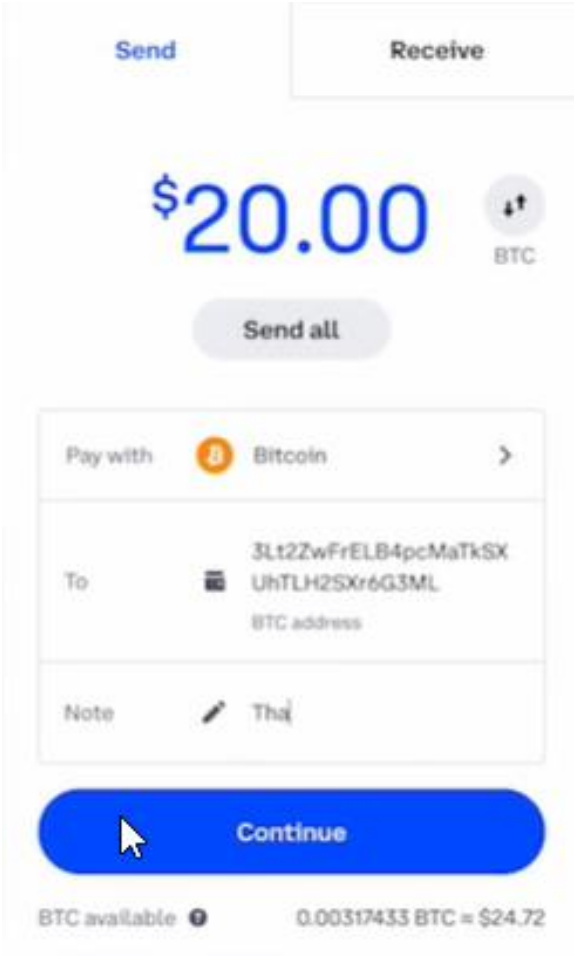
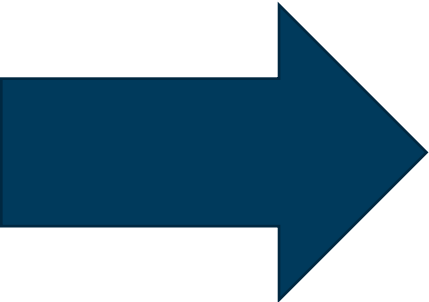
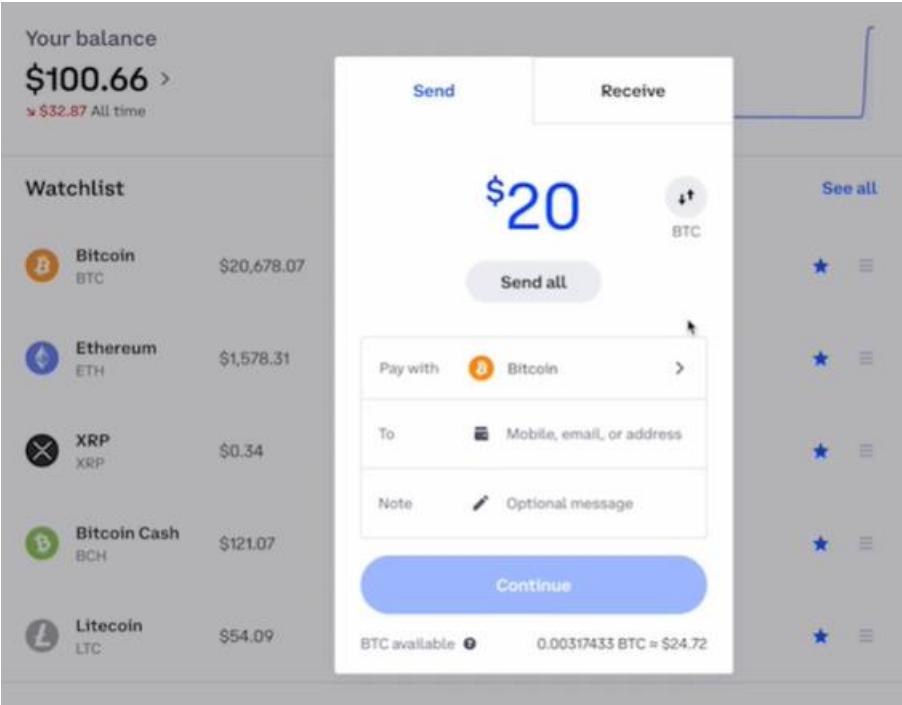
This Public Comment proceeding was initially scheduled to remain open from 29 May 20: through 13 July 2023. The Public Comment proceeding was extended by one week in res; requests for additional time to submit input. ICANN org received thirty-six (36) comment proposed amendments to the base generic top-level domain (gTLD) Registry Agreement and the 2013 Registrar Accreditation Agreement (RAA) from groups, organizations, and individuals.

- A specific requirement to **promptly take appropriate mitigation actions**

4.2. DNS Abuse Mitigation. Where a Registry Operator reasonably determines, based on actionable evidence, that a registered domain name in the TLD is being used for DNS Abuse, Registry Operator must promptly take the appropriate mitigation action(s) that are reasonably necessary to contribute to stopping, or otherwise disrupting, the domain name from being used for DNS Abuse. Such action(s) shall, at a minimum, include: (i) the referral of the domains being used for the DNS Abuse, along with relevant evidence, to the sponsoring registrar; or (ii) the taking of direct action, by the Registry Operator, where the Registry Operator deems appropriate. Action(s) may vary depending on the circumstances of each case, taking into account the severity of the harm from the DNS Abuse and the possibility of associated collateral damage.



Blockchain/web3/NFT Domain — Why does it exist?

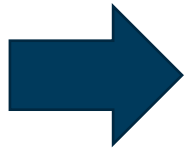
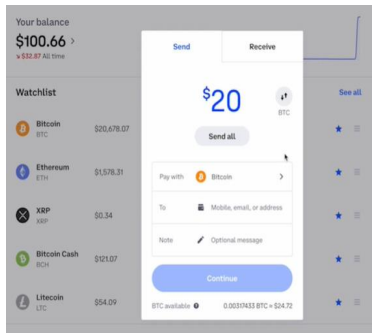


3HLgeYTuBkznzJ5d9oveLTxqJxpbpL420h

Public Key

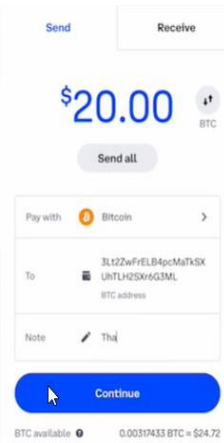


Nature of Blockchain and complication on compliance



3HLgeYTuBkznzJ5d9oveLTxqJxpbpL420h

Public Key



- Blockchain domains are mainly used to facilitate easier identification and access to blockchain wallet
- Web3 domain is similar to the username/account name of a wallet
- Wallet is “kind of” a financial tools – not regulated as yet in most countries
- Crypto assets **can** be hijacked
- Web3 domain could expand the role of domain into banking/investment/finance
- Is ICANN ready for this? Does it matter?

Internet Fragmentation

- IPv9?
- Official blockchain DNS for China or Russia?

China wants to patent a decentralized blockchain DNS



[Andrew Allemann](#)

[9 Comments](#)

May 10, 2021

Chinese government entity files U.S. patent application for blockchain-based DNS.



The Chinese government wants a U.S. patent for a decentralized, blockchain-based DNS that could compete with the existing domain name system overseen by ICANN.

The China Internet Network Information Center (CNNIC), the internet division under China's Ministry of Industry and Information Technology, filed a U.S. [patent application](#) (pdf) for *Blockchain multi-party shared-governance-based system for maintaining domain name*



Questions?

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