



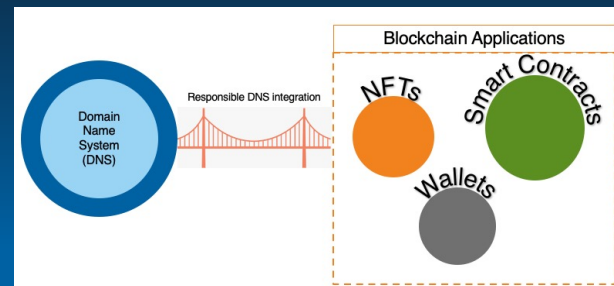
VERISIGN®

Diversifying Beyond the Traditional DNS Ecosystem: Responsible Integration into Blockchain Namespaces

Swapneel Sheth, Verisign

5th ICANN DNS Symposium (IDS 2022)

15-16 November 2022



Agenda

Global DNS diversification via integrations

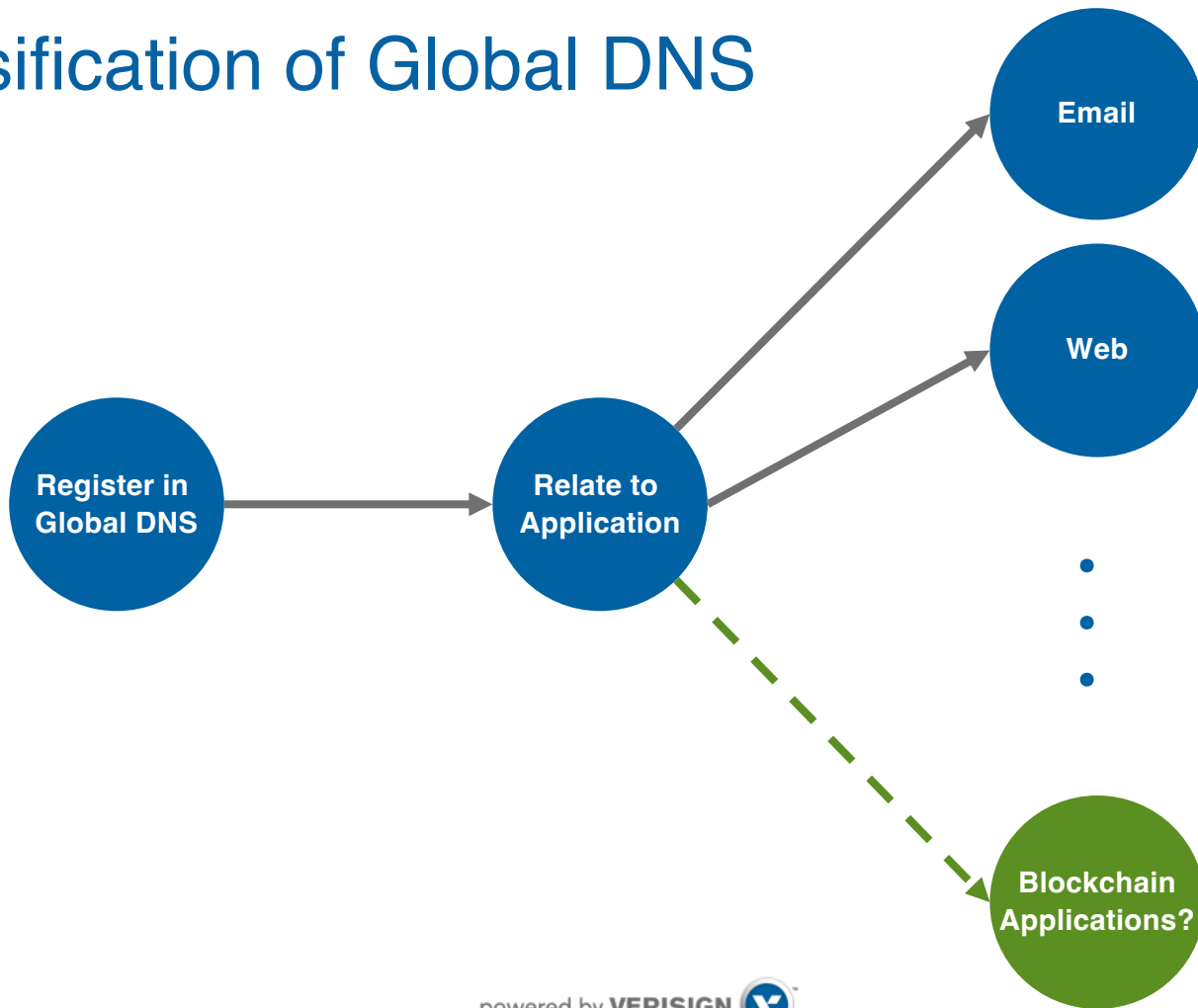
Blockchain applications - a new use case

Alignment with the global DNS

Challenges of managing namespace integrations

Responsible integration

Diversification of Global DNS



Need for Blockchain Identifiers

Easy to Remember

Hard to Remember

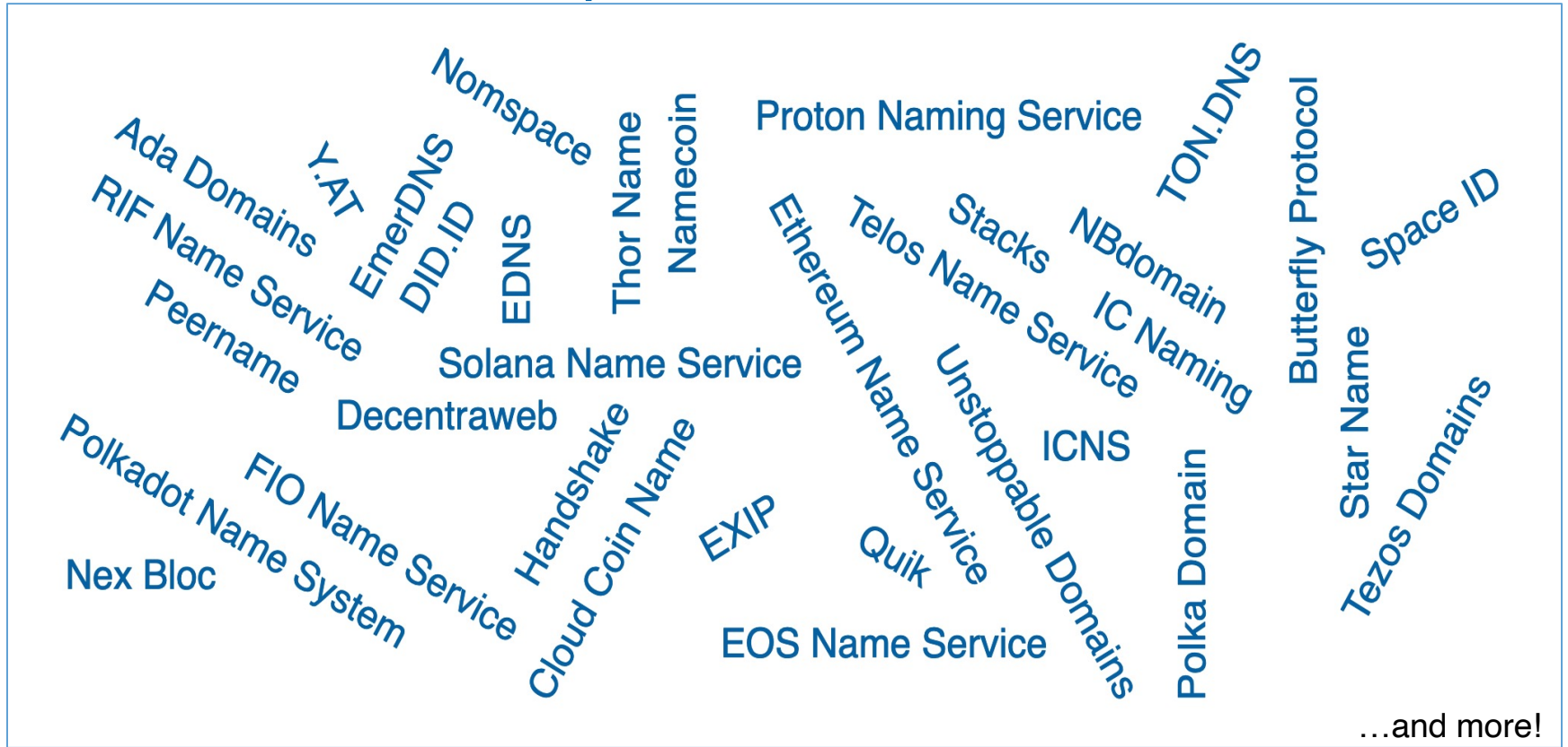
example.com

93.184.216.34

example.eth

0x51aba267a6e8e1e76b44183a
73e881d73a102f26

Blockchain Namespaces



Why So Many Namespaces?

- Universal need to improve user experience
- Interoperability between blockchains
- DNS support lacking for blockchain use cases

• Four examples mentioned in [OCTO-034](#) have different emphases



policy to not add new TLDs to their namespace unless anchored to the DNS namespace



traditional alt-root approach offering extensions such as .crypto, .wallet and .nft



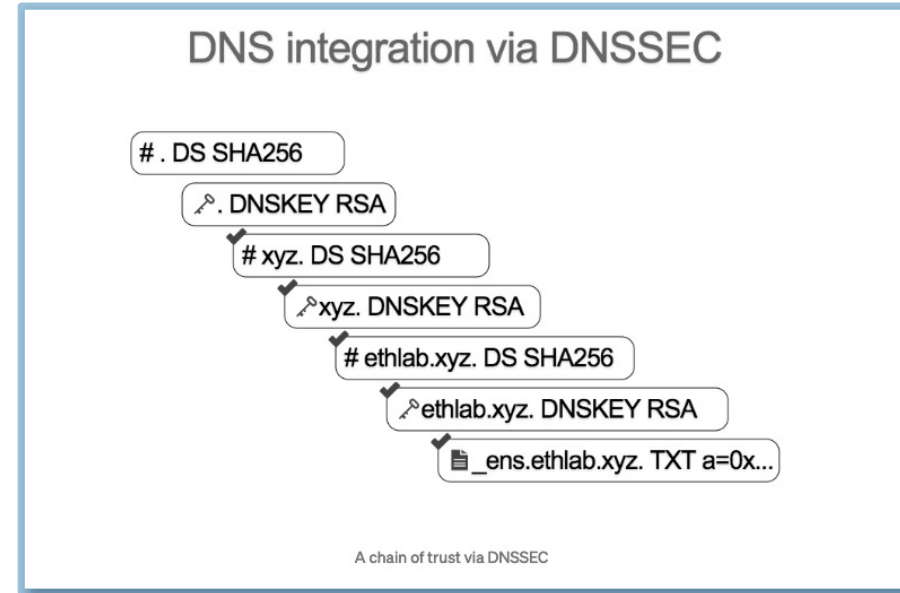
“goal is to maintain our own root zone file”



early experimental fork of Bitcoin

DNS Integration Approaches

- [DNSSEC-based \(introduced by ENS in 2018\)](#)
- [nic.tld \(proposed by ENS in 2019\)](#)
 - Verisign [notified ENS about issues](#) with this approach

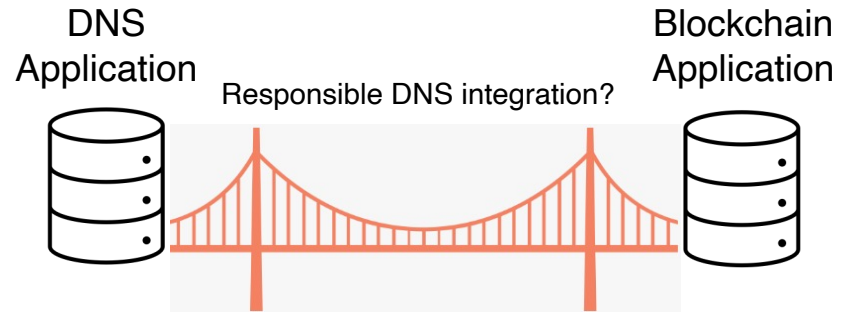


Source: <https://bit.ly/3M99bek>

- Attestation-based (introduced by Tezos Domains in 2022)

Concerns with Current Approaches

- Synchronization between global DNS and blockchain namespace
- Interoperability
- Cost of blockchain transactions
- Blockchain and DNS have different policy emphases
- Commitment to a particular integration is unclear



Analogy with Web PKI: Key Questions



How can a **certification authority** ensure that **only the registrant** of a global DNS domain name **can claim a certificate** that includes the domain name?

How can a **blockchain namespace** ensure that **only the registrant** of a global DNS domain name **can claim a blockchain identifier** that matches the domain name?

Importance of Alignment with Global DNS

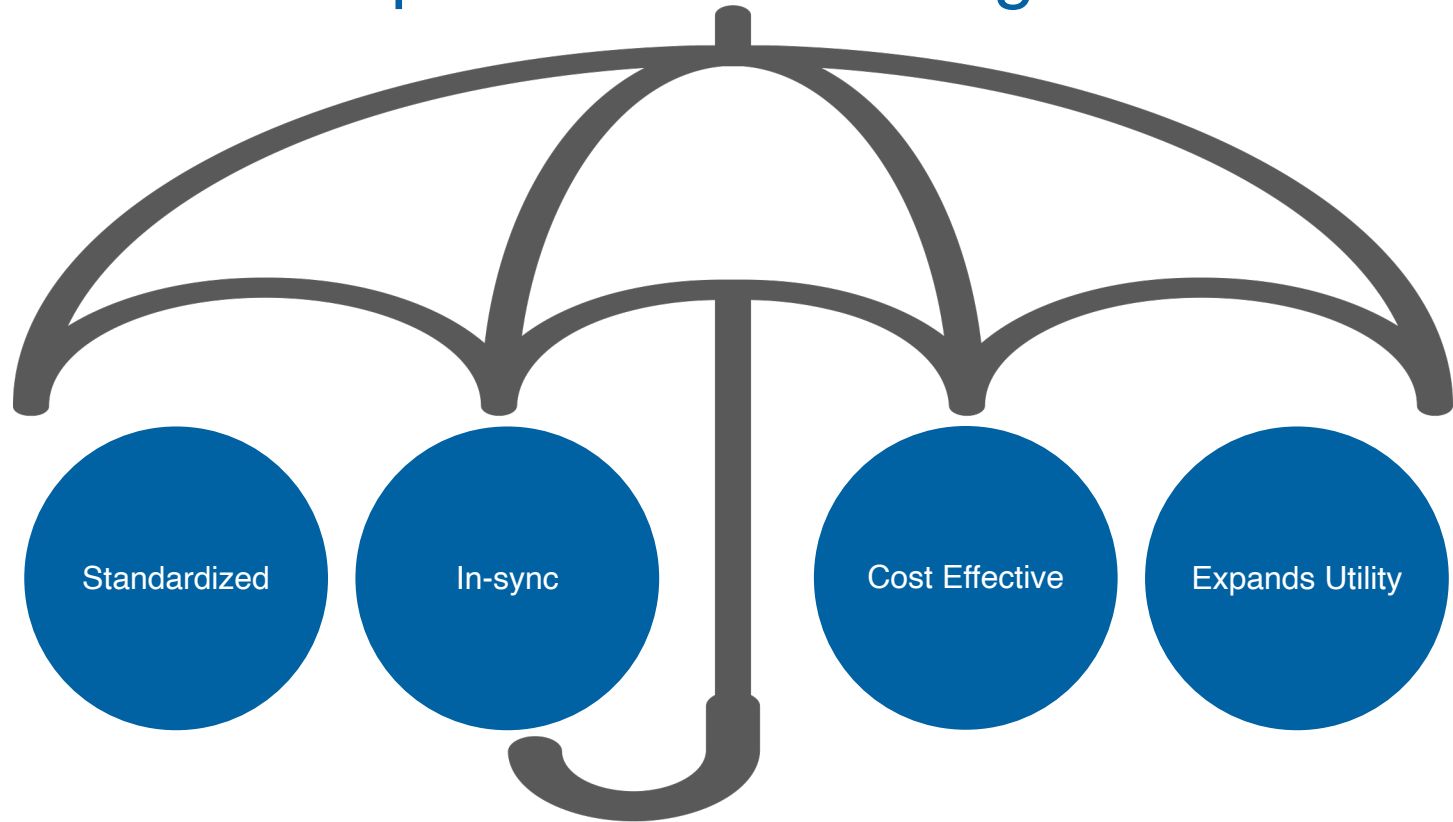
- *A Unique, Authoritative Root for the DNS*
(ICANN ICP-3, 2001)

“Responsible experimentation is essential to the vitality of the Internet.”

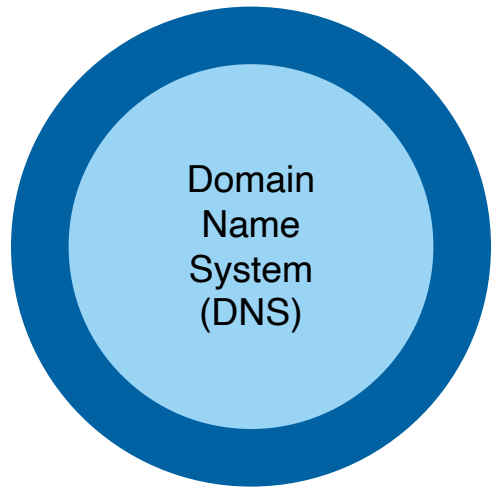
- *Challenges with Alternative Name Systems*
(ICANN OCTO-034, 2022)

“The lack of name space coordination, ..., will result in unworkable name collisions.”

Criteria for Responsible DNS Integration



Standardizing Responsible DNS Integration?

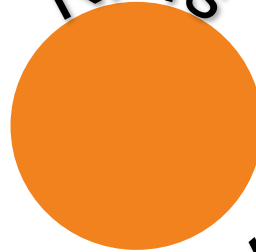


Responsible DNS integration



Blockchain Applications

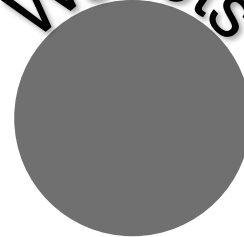
NFTs



Smart Contracts



Wallets



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