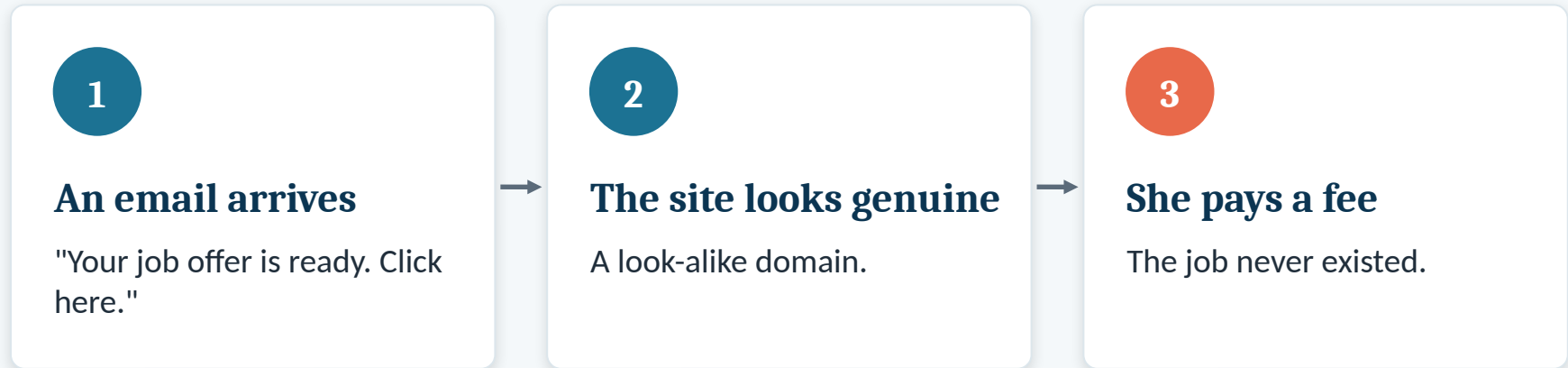


Building a Secure and Trusted DNS

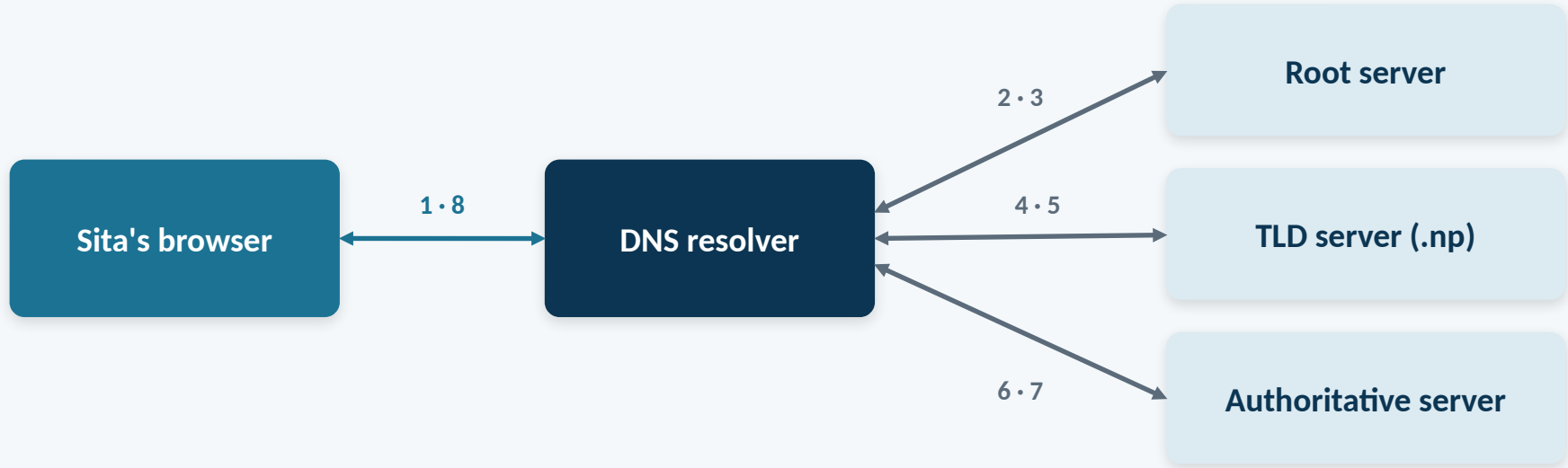
Addressing DNS Abuse and Advancing DNSSEC

Meet Sita: a job offer that was never real



How did the Internet let this happen?

How DNS finds a site, and where trust can break



A plain DNS answer carries no signature. The resolver cannot tell genuine from forged.

Break #1: the domain itself is the weapon

DNS ABUSE

Impersonation

fabrikam.com

real

fabrikarn.com

fake

Phishing

Scanner sees: harmless page

Victim sees: fake job form

Break #2: DNS answers cannot prove they are genuine

DNSSEC adds digital signatures. A validating resolver checks the whole chain.



Break the chain anywhere, and the answer cannot be verified.

ICANN acts, but its contract rules cover gTLDs.

Break #2

Root zone signed

DNSSEC-signed since 2010. Every chain starts here.

Break #1

Contracts since Apr 2024

gTLD registrars and registries must act on well-evidenced abuse.

Break #1

Enforcement, first 6 months

2,700+ domains suspended, 350+ phishing sites taken down.

Break #1

Domain Metrica

Abuse data platform. Open to ccTLD operators since Sep 2025.

ccTLDs sit outside ICANN's contract rules, and .np is one of them

gTLD

ICANN contract

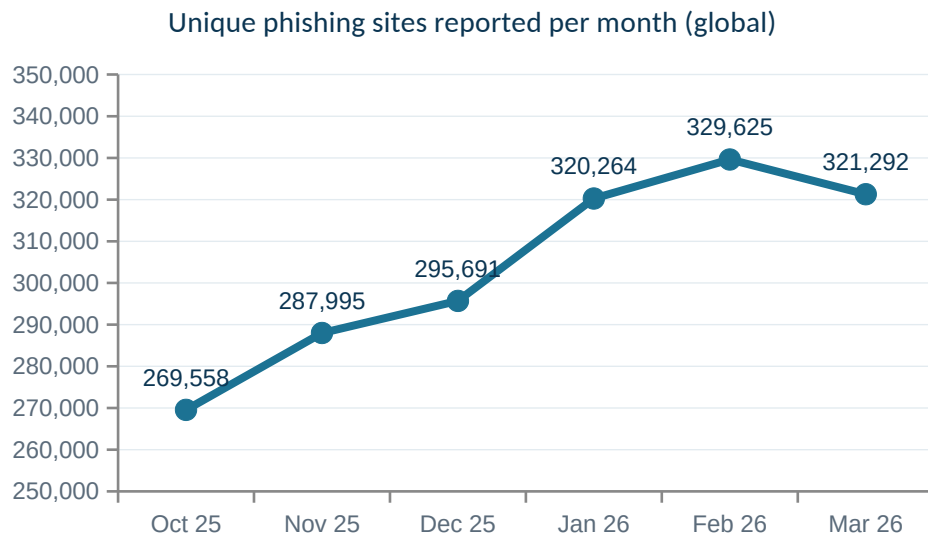
Registries and registrars must act on well-evidenced abuse. Enforceable.

ccTLD

National law and local policy

No contractual duty to act on abuse. Speed and rules differ by country.

Nepal: phishing keeps climbing, and .np has one gatekeeper



Source: APWG. Axis starts at 250K.

+19%

monthly phishing sites, Oct 2025 to Mar 2026
(global)

.np manager (IANA)

Mercantile Communications

Can .np be verifiable and accountable?

Four steps: two fix the source, two protect users now

FIX AT THE SOURCE

Make .np DNSSEC-signed

Use ICANN's ccTLD guidance.

Addresses Break #2

Registrar accountability

Takedown duties, CERT and Cyber Bureau coordination.

Addresses Break #1

PROTECT USERS NOW

DNS filtering

Block known-bad domains in schools (e.g. Quad9).

Addresses Break #1

Youth digital literacy

Spot look-alike domains and fake offers.

Addresses Break #1

A name people can trust needs two things

Verifiable answers

DNSSEC on .np

Accountable domains

Actionable abuse reports

My ask Connect me with people working on ccTLD DNSSEC deployment.

Thank You

Connect With Me in Linkedin



Gmail :

anujagyawali000@gmail.com

079bct020.anuja@pcampus.edu.np



Anuja Gyawali

Undergrad Computer Engineering Student
IOE Pulchowk Engineering Campus, Tribhuvan University