ITU

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Federation for the Masses (Impact of Blockchain and FIDO)

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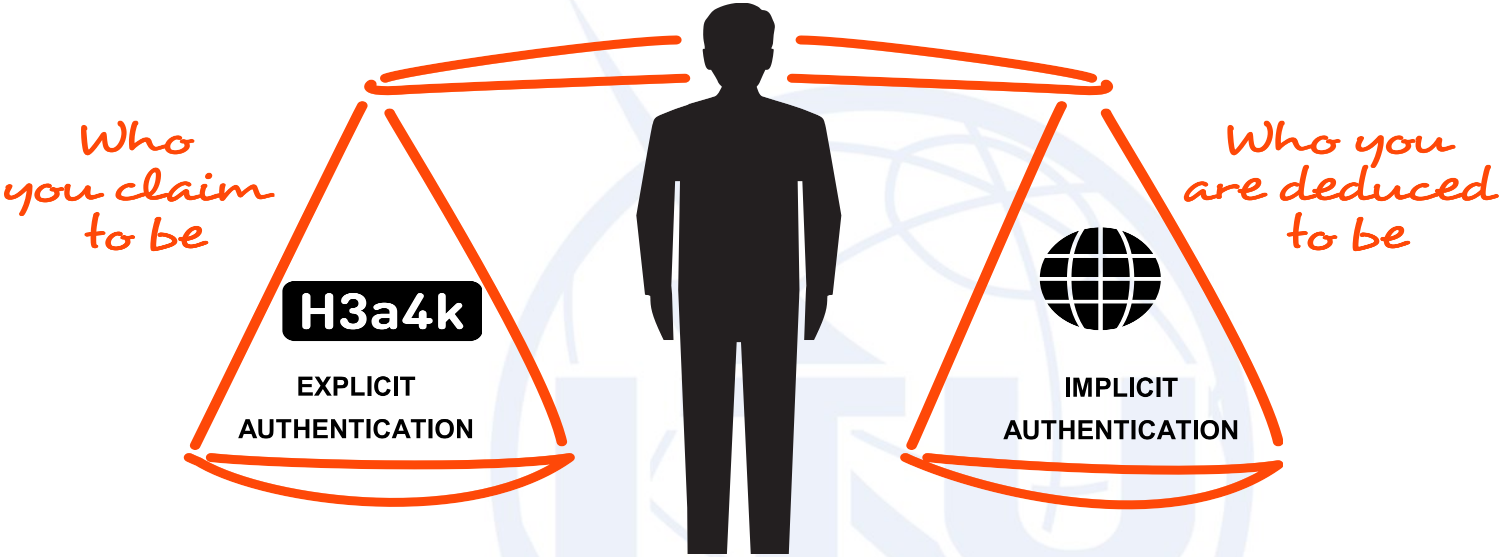
FIDO modern authentication



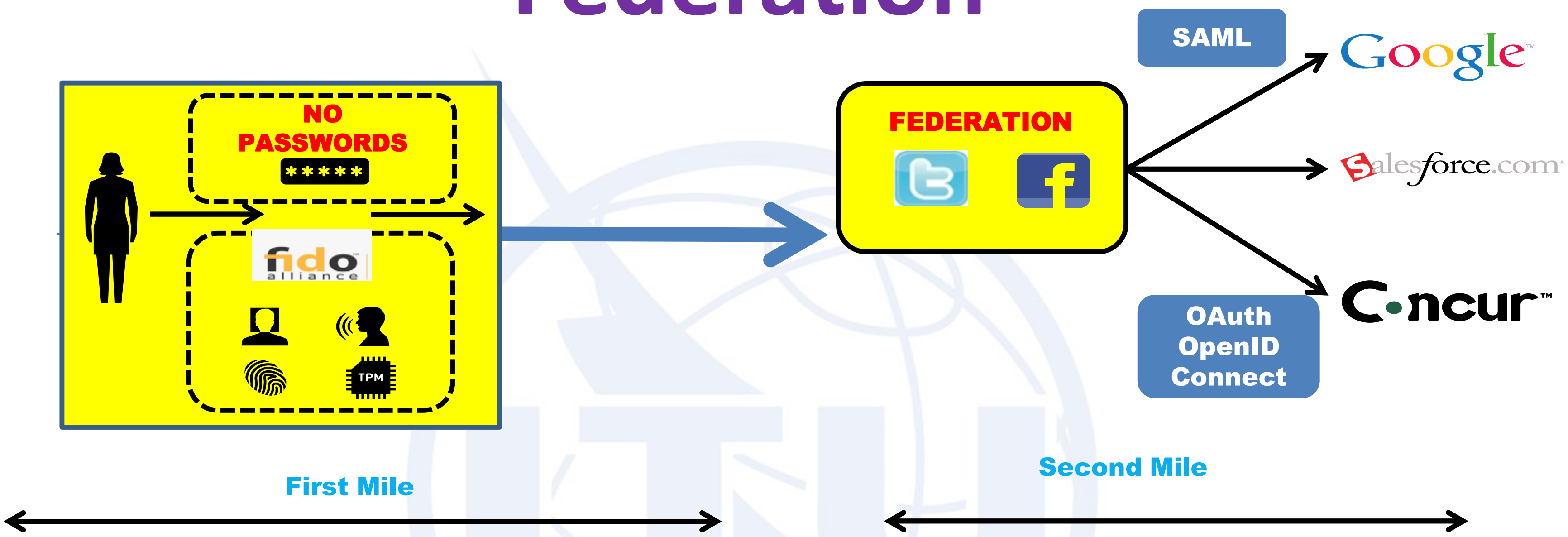
- MUST eliminate symmetric shared secrets
- Address poor user experiences and friction
- **FIDO is a building block**
  - complements federation solutions

Impact

- Identity binding is essential
- Strong identity proofing a must

Source FIDO

Federation



NO PASSWORDS

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FEDERATION

SAML

OAuth OpenID Connect

First Mile

Second Mile

- Standards are catching up on mile one
- Mile two is getting more mature
  - Federation need improvement
  - No prior relationship
    - SAML: Dynamic AuthN/Z
    - OAuth, OIC dynamic end point
    - Blockchain Opportunity

- How about identity assurance?
  - Poorly deploying strong authentication is the same as weak authentication
- **FIDO solves the PW problem but mandates better identity binding at the relaying part**
- **Proper Identity vetting/proofing becomes essential**

Identity proofing and account recovery

Account Login Current Pain Points

- I forgot my password
- I cannot find/lost my phone
- I am locked out of my account

Account Recovery Options

- KBA (static and/or dynamic)
- Email account (compromised)
  - Password reset link
  - Or a new password
  - Enrolling back in FIDO

Identity Proofing

- Binding a FIDO authenticator to a user account on relying party requires performing an Identity vetting step
  - Trust anchor (aka Bootstrapping problem)
- Currently pre-established Authenticators are used as anchors of Trust (such as passwords)

Online identity proofing is challenging and still relies on something “you know”

Blockchain technology

- Blockchain – distributed data store
- Public Key Cryptography (PKI)
- Peer to peer connected nodes

- Consensus mechanism (PoS, PoW, etc)
- Smart contracts

Permisionless

- Proof of work (PoW)
- Open node participation
- Weak(er) governance
  - Role of determined entities
- Performance
  - Mileage may vary

Permissioned

- Controlled participation
  - Authorized entities
- Improved Governance
- Entities are vetted
- Potentially faster consensus

Blockchain for identity v

- Client acquire policy
- Client goes to Application Website to enrol

step requires
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FIDO a binding
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identity can be
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- Blockchain does not hold individual identity
- Trusted Nodes (act like a Federation)
- Individual identity data is stored off chain
  - Avoid storing private attributes on a public ledger (even when encrypted)
  - Stores references to data
- Originators retain control of their data
- Permission based system
  - Nodes on the network are known
  - Can be double permissioned based on mining protocols
  - Limited to a Consortium (affiliation [illegible] model)

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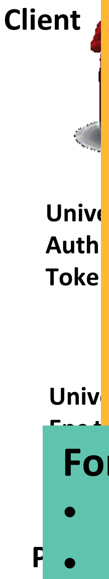
For the client

- No data about me without me
- No blanket permission (finer grained control)
- Will know who can attest for their data
  - What data is being shared and for what purpose
- Control for binding and unbinding an identity to a device
- Unconsent support



Going Forward

- Investigate a core consortium of trusted entities
- Share individual identity data attributes that all parties agree on exchange mechanisms, data structure, semantics and the context under which it is shared based on relationship and purpose
- Enable large scale trust and federation without the need of one to one relationship
- Global Federation capabilities
  - Dynamic SAML and OAuth
  - Improved Security and No need for prior negotiation
- Enable interoperable system of data exchange of healthcare records

Thank you

Questions