

Identity Federation

Revolutionizing Digital Identity Seamless Single Sign-On Across Industries



Mahesh Vankayala

Problem Statement

Challenges in Digital Identity Management

- Users manage an average of 100 passwords across online accounts.
- **Key Issues:**
 - **Password Fatigue:**
 - 66% of individuals reuse passwords, increasing vulnerability to breaches.
 - **Security Risks:**
 - 61% of data breaches involve compromised credentials.
 - Human error, including phishing attacks, is a significant contributor to breaches.
 - **Poor User Experience:**
 - 55% of consumers have abandoned online purchases due to forgotten passwords.
 - **Inefficient Onboarding:**
 - Financial institutions could save up to \$1 billion annually through streamlined identity verification processes.

Introducing Identity Federation

What is Identity Federation?

- **Definition:** A shared identity model enabling a single identity to be used across multiple institutions, such as banks or healthcare providers.
- **Benefits:**
 - **Seamless Single Sign-On (SSO):** Access multiple services with one login, improving convenience.
 - **Enhanced Security:** Reduces password fatigue and associated risks, strengthening cybersecurity.
 - **Improved User Experience:** Streamlines access, leading to higher user satisfaction and engagement.



Key Components of Identity Federation

Core Components

1. Single Sign-On (SSO):

- Users authenticate once and gain access to multiple services, reducing friction.

2. Standardized Identity Attributes:

- Defines essential attributes for different industries (e.g., banking: name, financial history; healthcare: medical history).

3. Consent Management:

- Empowers users with control over data sharing, ensuring compliance and fostering trust.

4. Industry-Specific Trust Framework:

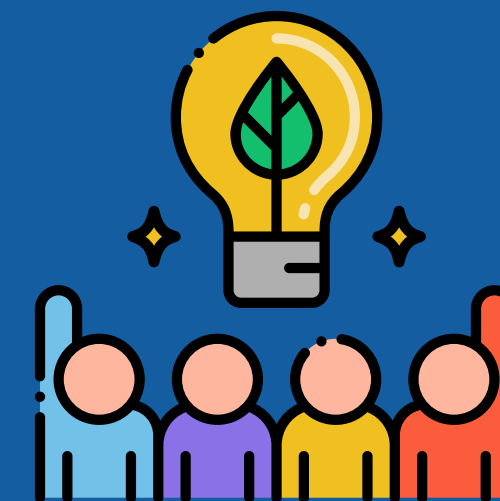
- Establishes rules and standards for participation, ensuring security and privacy across entities.



Economic Impact

Unlocking Economic Value

- **Potential GDP Growth:** Up to 3–13% by 2030 in countries implementing the Identity Federation.
- **Cost Reductions:**
 - **Password-related Support Incidents:** Organizations report a 50% reduction in these incidents.
 - **Onboarding Time in Banking:** 80% reduction, saving significant resources.
 - **Healthcare Savings:** Interoperable systems could yield \$30 billion in annual savings, improving overall efficiency.



Technical Implementation

How to Implement Identity Federation

- **Standards Utilized:** Extend OAuth 2.0 and OpenID Connect to create a robust framework.
- **Components:**
 - **Extended OAuth 2.0 Scopes:** Allow for specific access permissions relevant to each industry, enhancing security.
 - **Federated Identity Providers:** Each institution acts as both an Identity Provider (IdP) and Service Provider (SP), enabling seamless user experiences.
 - **Attribute Exchange Protocol:** Enables secure sharing of user attributes with encryption and digital signatures.
 - **Federation Registry:** A central repository for participating institutions, ensuring transparency and security.

Industry Applications

01

Banking:

- **Onboarding Efficiency:** 80% reduction in onboarding time, saving banks significant resources.
- **Service Integration:** Enhances customer retention by providing seamless access to various services.
- **Fraud Reduction:** Shared identity verification could lead to a 90% decrease in identity fraud, saving the industry \$7 billion.

02

Healthcare:

- **Interoperability Savings:** Up to \$30 billion in annual savings from streamlined patient record access.
- **Care Coordination:** Improved care for patients with complex histories, reducing hospital readmissions by 20%.

03

Education:

- **Credential Portability:** A federated system could reduce transcript verification time by 90%, easing student transitions.
- **Enrollment Growth:** Simplified processes could increase adult learner enrollment by 25%.

Challenges to Adoption

Overcoming Barriers

- **Regulatory Compliance:** Must adhere to industry regulations (GDPR, HIPAA), as non-compliance can lead to severe penalties.
- **Security Risks:** Centralized systems may attract cyber threats; robust security measures are essential to mitigate risks.
- **Privacy Concerns:** Protecting user data and ensuring transparency in how data is shared is crucial for trust.
- **Adoption and Interoperability:** Collaboration among industry players is necessary to create interoperable standards and drive widespread adoption.



Statistics

Strategic Approaches

- **Regulatory Alignment:** Design Identity Federation frameworks that inherently align with key regulations to streamline compliance.
- **Enhanced Security Measures:** Use advanced security protocols (e.g., biometric authentication) to protect user data.
- **Privacy by Design:** Incorporate technologies that enhance privacy and give users control over their data.
- **Industry Collaboration:** Foster partnerships to develop and promote interoperable standards across sectors.
- **Education and Awareness:** Initiatives to inform organizations and users about Identity Federation benefits and best practices.

Conclusion

In conclusion, Identity Federation represents a transformative approach to digital identity management that addresses the critical challenges faced by users and organizations alike. By enabling a seamless Single Sign-On experience across multiple service providers, Identity Federation enhances user convenience and security while significantly improving the overall user experience. As industries increasingly digitize and integrate, the ability to manage identities efficiently and securely will be paramount.

The economic impact of adopting Identity Federation is substantial, with potential GDP growth of 3-13% by 2030 for countries that implement these systems. Additionally, sectors such as banking, healthcare, and education stand to save billions in operational costs and improve service delivery. By establishing standardized identity attributes and a robust consent management framework, organizations can foster greater trust and interoperability among users.

THANK YOU

