Present and Future Trend of Digital Identity Technology in Korea

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Problems in the past

- Inconvenience in Internet User and Identity Theft
  - Registration of personal information and ID in many sites and required to authenticate every time
  - Sharp increase in the damage caused by Identity Theft due to the disclosure of ID such as National ID

- Damage in unauthorized access to personal information and its distribution
  - Absence in secure and convenient distribution framework for personal information
  - The lack of control of personal information for collection and distribution

- Federating multiple trust domains problem
  - Too many trust domains
  - One-to-One Federation is too complex
Research Objectives

Objective

- Develop the Internet ID Management Service System that provides the secure and convenient ID service in various electronic transactions such as e-Government and e-Commerce

Secure Electronic Transaction in the Internet

Universal Security Service Platform Technology for Protecting e-Identity

Internet ID Management
- ID Management
- Internet SSO
- ID Federation

ID Web Services & Privacy Control
- ID Web Services
- Privacy Control

ID Federation Bridge
- ID Federation Bridge
- Mobile ID Service
- Delegation Service
Internet ID Management System

System Architecture

- Privacy Controller
- Service Provider
- Discovery Server
- Internet ID Server
- Attribute Sharing Service
- Discovery service
- ID Federation Bridge service
- Internet SSO service
- ID management service
- Delegation service
- Delegation Authority
- Authentication Server
- Mobile Authentication service
- Principal
- ID Roaming
Online Identification Service: i-PIN (Internet Personal Identification Number)

Case Study [1/2]

Outline

- A new cyberspace identification tool that replaces resident registration numbers
- Consists of five kinds of government-issued measures
  - Virtual resident registration number, Individual authentication key, Individual ID authentication, Green button, Certificate

Architecture

Identification Means

- Certificate
- Credit Card Number
- Cell Phone Number
- Face-to-Face

User (33 million)

Internet Site (1 million)

Identification Agency (5)

1. Registration Request
2. Alternative measure submission Request
3. Alternative measure issue Request
4. Alternative measure issue after identification
5. Identification information forwarding

ITU-T Workshop on "Digital Identity for NGN"
Geneva, 5 December 2006
Case Study [2/2]

Integrated ID Management System for Public Organization

Outline

- Inter-connection of the 21 sites including 5 district office in Daejeon metropolitan
- Adapting the ‘Internet ID Management Service System’ developed by ETRI

Architecture

Services and Technologies

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Problems in the present

- **Fundamental problems**
  - Ownership of Identity lies with a user
  - Flow of identity information does not go through the user

- **Problems in Federated Identity**
  - Building and deploying a FID system is ineffective because Every domain has different policies
  - Increase in domains cause to increase complexity

- **Absence of User Control in Identity Sharing**
  - Service Providers collects more identity information than they need
  - Consent to a policy means loss of control
Research Objectives

Digital Identity Wallet System for enhancing authentication and user-controlled privacy

**Authentication & Credential Management**
- Multi-factor Selectable Authentication and Integrated Credential Management Technology

**Multi-domain Identity Sharing**
- Bidirectional Seamless Identity Sharing and Synchronization Technology

**User-Controlled Identity Control**
- Real-time User Identity Control based on Link Contract Technology
Vision for the Future Identity Management

The Concept of User-Centric Digital Identity Wallet

Domain A
Identity S & P Server
Identity Web Server

Domain B

Domain C

Service Provider A

Service Provider B

Link Contract

Digital ID Wallet
Conclusion

- So far we have done domain-centric approach
  - Federated Identity, Single-Sign-On
  - ID-WSF for Attribute Sharing
  - Interaction Service for Privacy Protection
  - Federation Bridge for Multi-domain
- In the future, we will focus on users
  - User-Centric Digital Identity Wallet
  - Bidirectional and Synchronized Identity Sharing
  - User-Configurable Privacy Protection Mechanism