



**International Telecommunication Union**

# **Present and Future Trend of Digital Identity Technology in Korea**

**Sangrae Cho**

**ETRI**

ITU-T Workshop on "Digital Identity for NGN"  
Geneva, 5 December 2006



ITU-T

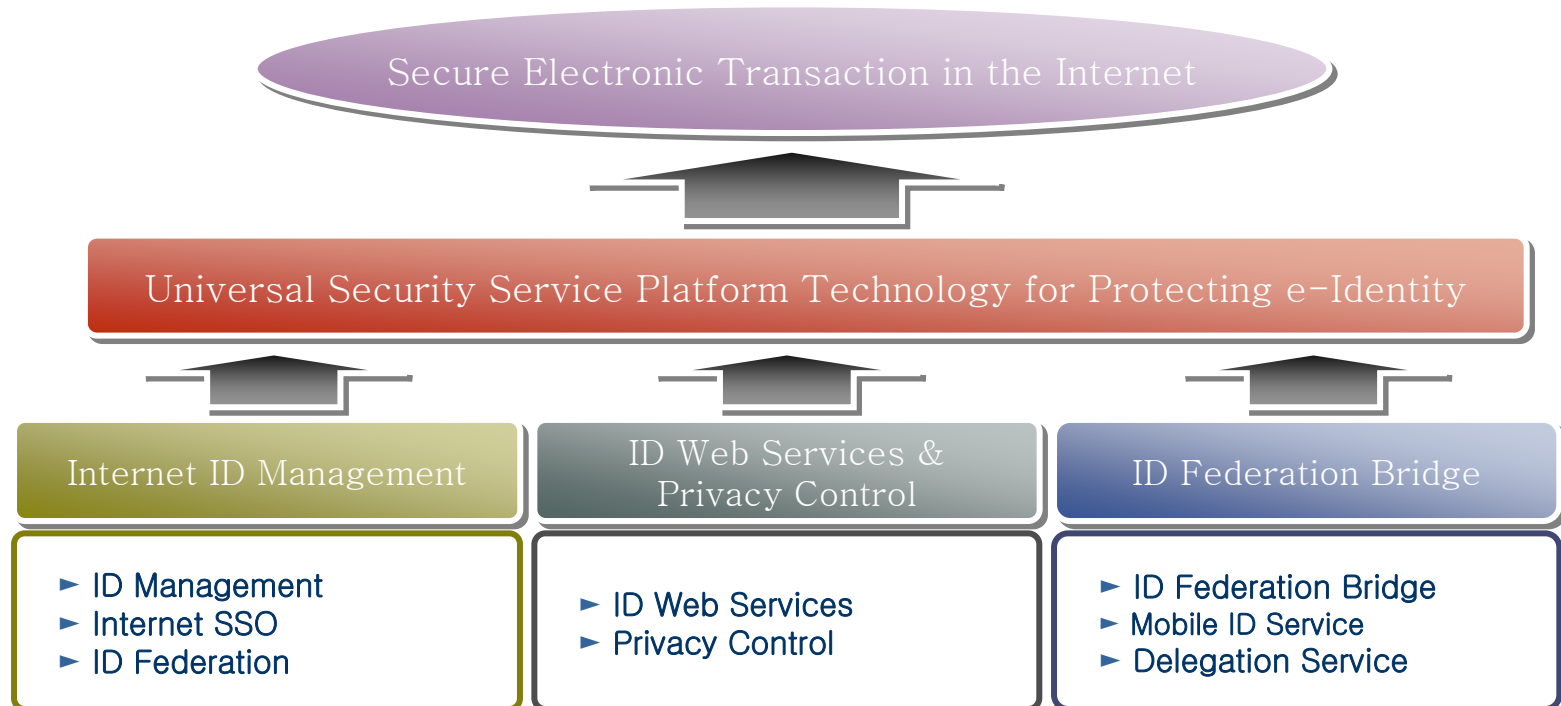
## Problems in the past

- 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

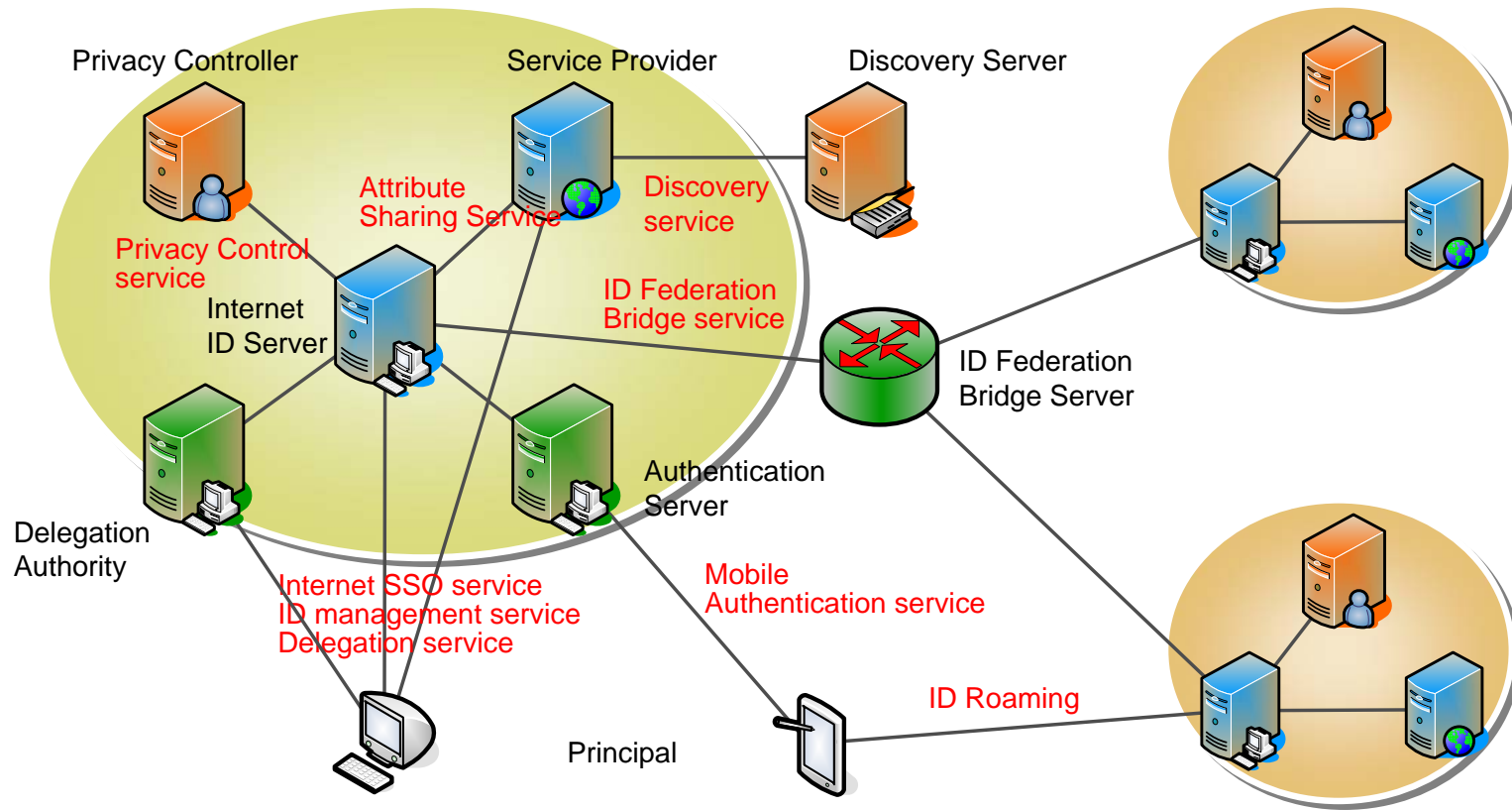




ITU-T

# Internet ID Management System

## System Architecture



ITU-T Workshop on "Digital Identity for NGN"  
Geneva, 5 December 2006



# Case Study [1/2]

## Online Identification Service : i-PIN (Internet Personal Identification Number)

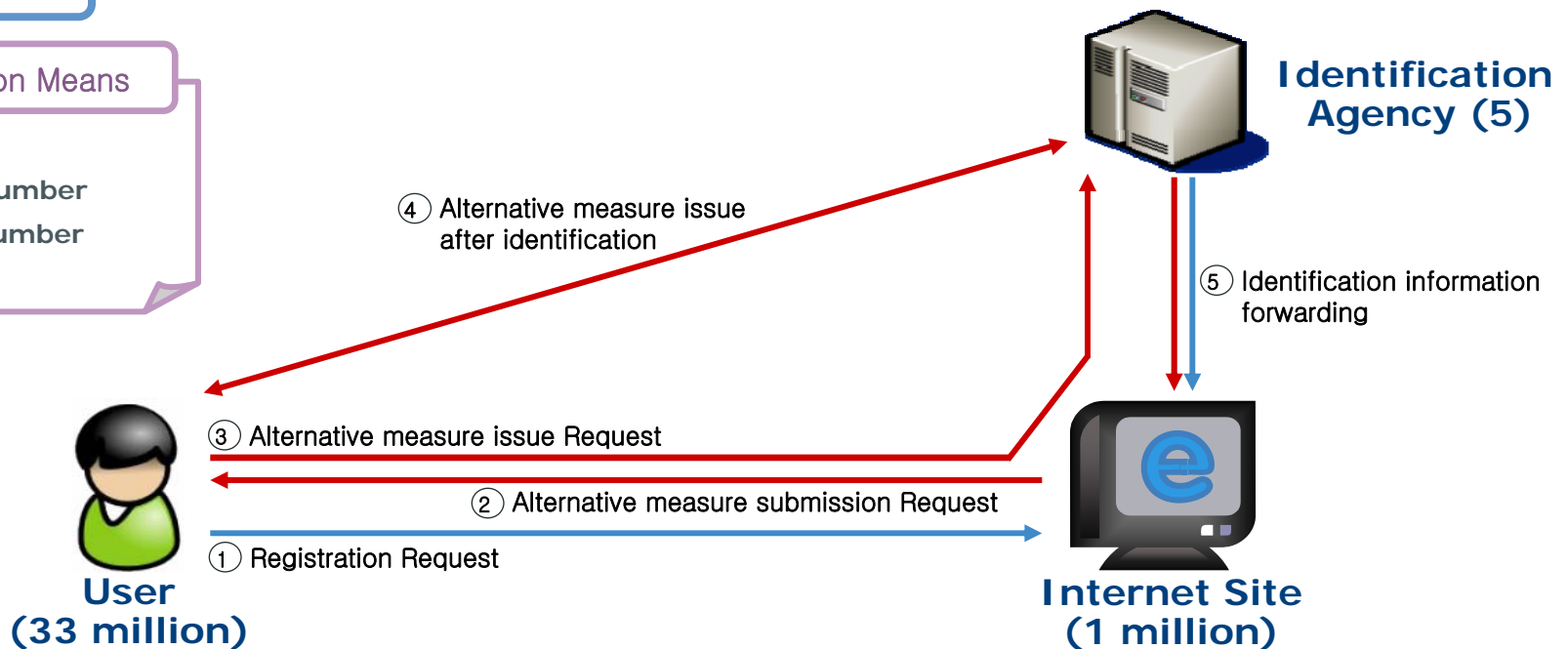
### Outline

- 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





# Case Study [2/2]

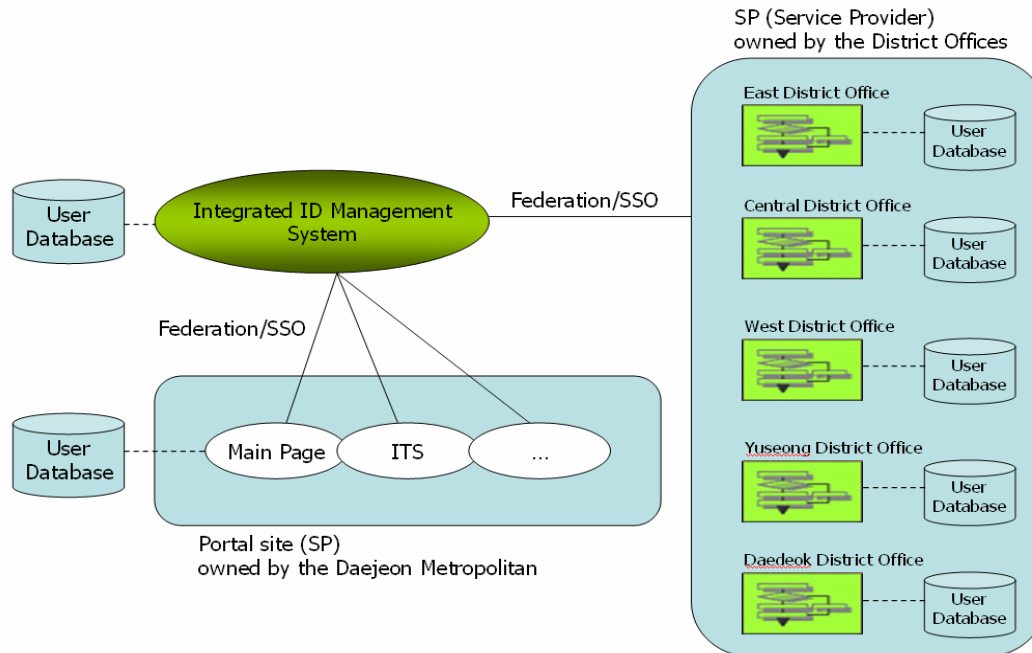
ITU-T

## 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



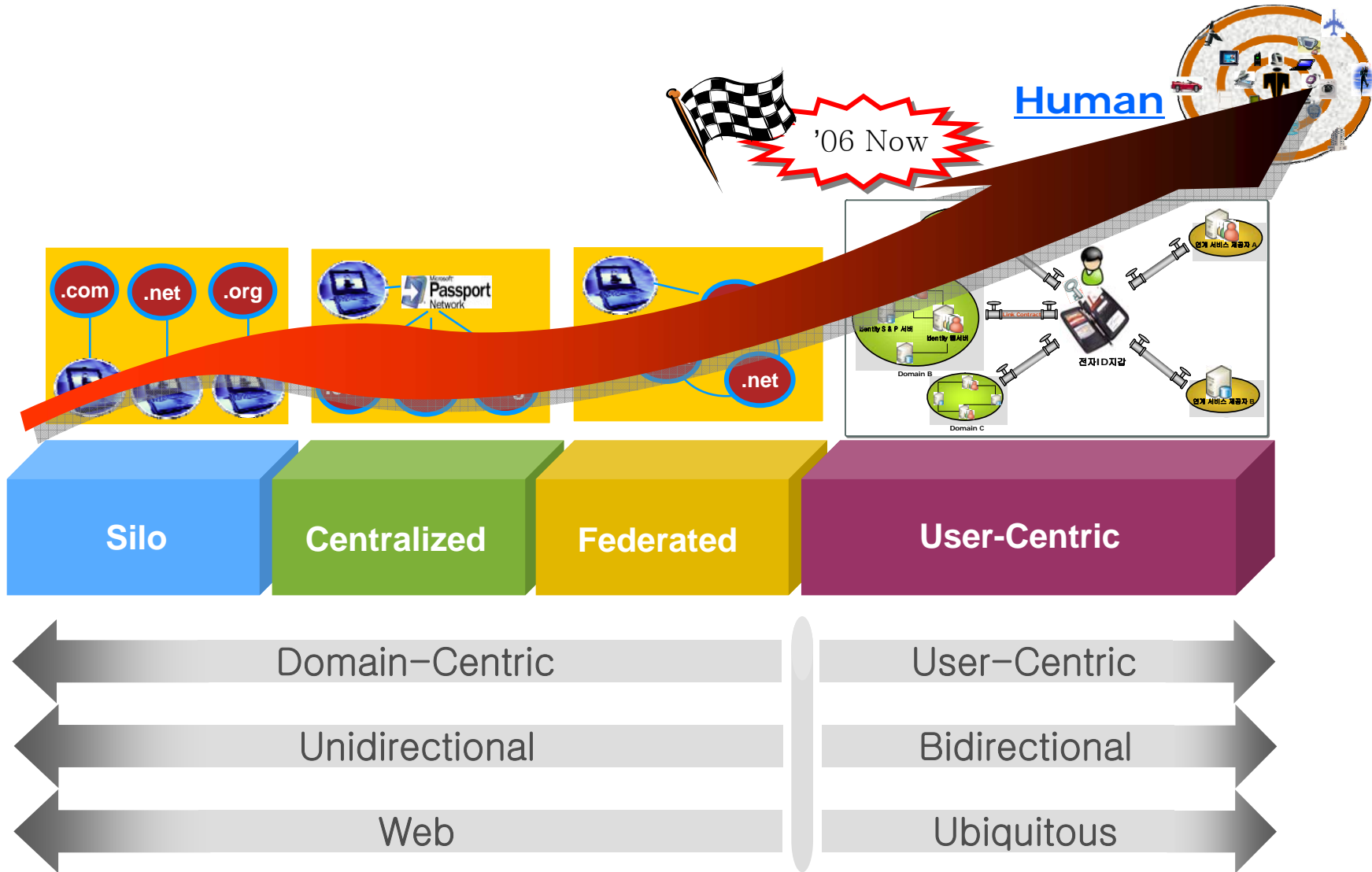
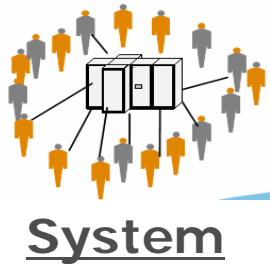
### Services and Technologies

| Services                                     | Technologies            |
|--|-------------------------|
| ID Federation and Web SSO                    | SAML v2.0               |
| Providing and notification of ID information | SAML v2.0, ID-WSF v2.0  |
| Protection of privacy information            | ID-WSF v2.0, XACML v1.1 |
| Alternation of Korean Registration Number    | SAML v2.0, ID-WSF v2.0  |



ITU-T

# Trend in Identity Management Technology



ITU-T Workshop on "Digital Identity for NGN"  
Geneva, 5 December 2006

- o Fundamental problems
  - Ownership of Identity lies with a user
  - Flow of identity information does not go through the user
- o 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
- o Absence of User Control in Identity Sharing
  - Service Providers collect 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

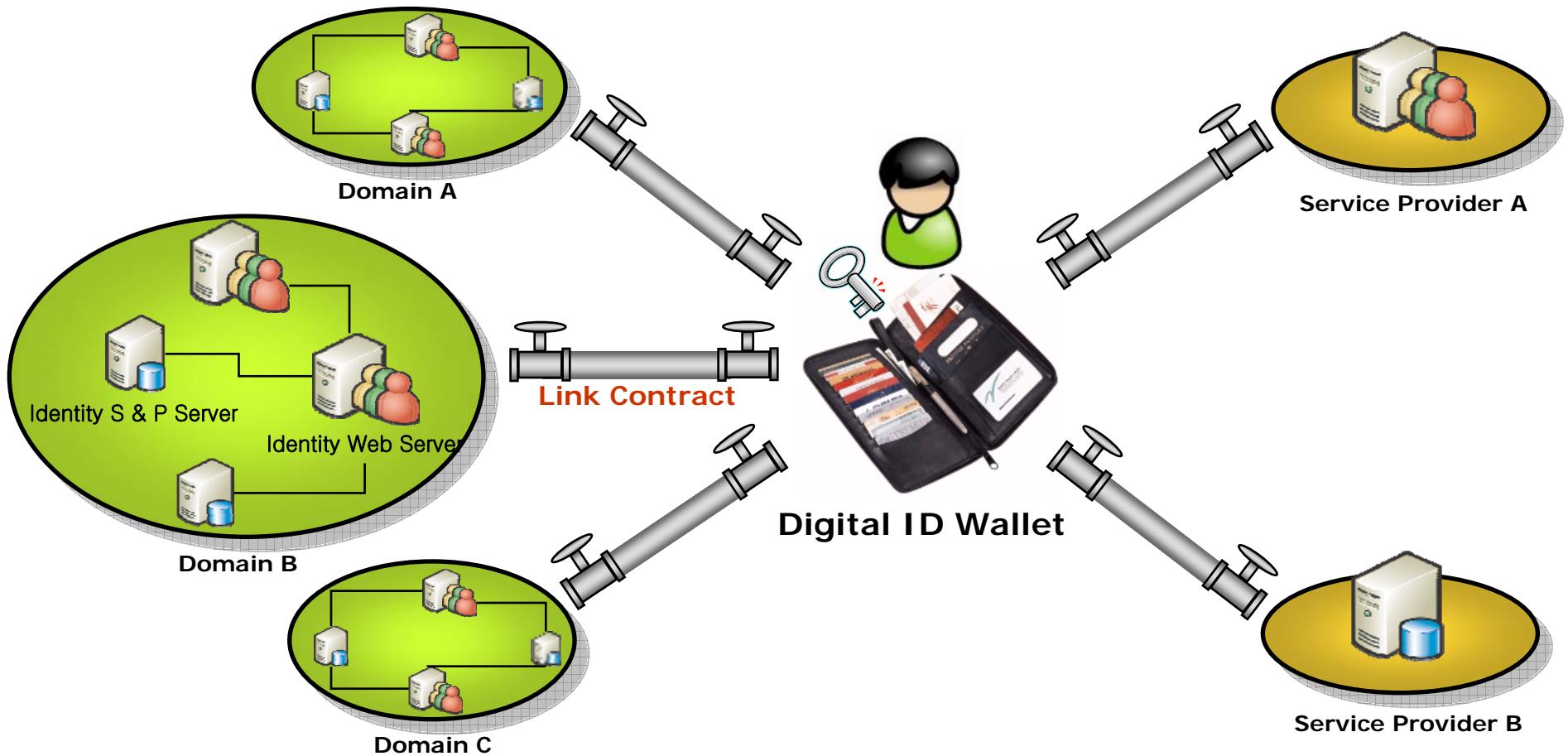
Bidirectional Seamless  
Identity Sharing and  
Synchronization  
Technology

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



## Conclusion

- o 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
- o In the future, we will focus on users
  - User-Centric Digital Identity Wallet
  - Bidirectional and Synchronized Identity Sharing
  - User-Configurable Privacy Protection Mechanism