

# Identity Management

Rolf Blom  
Ericsson Research

# Identity Management

## Agenda

- What is a Digital Identity
- Why Identity Management
- Identity Management Roles and technology
- User attitudes
- User Requirements
- Standardization

# Digital Identity

What is it?

## Identity

- A set of claims someone makes about a principal(/person)
- (All) attributes related to a principal

## Digital Identity

- Linking real world attributes with cyber world identities



- Public identities
- Private identities

# Digital Identity

## Types of attributes

**Identifiers** – allow us to refer to the identity

**Authenticators** – are issued by a relevant authority and allow us to determine the legitimacy of someone's claim to the identity

**Authorization**– used to establish the permission for the identity to do something.

**Preferences**– used to personalize service delivery

**Location, etc**

## Example attributes

- Name
- Credit card numbers
- Social security number
- ...
- Bank ID
- Employee Card
- Smart Card / \*SIM
- Passwords
- ...
- Bank services
- Employee authorization
- Drivers license
- Web access rights
- ...
- Notification preferences
- Entertainment preferences
- ...
- Location
- Business calendar
- ...

# Identity Management

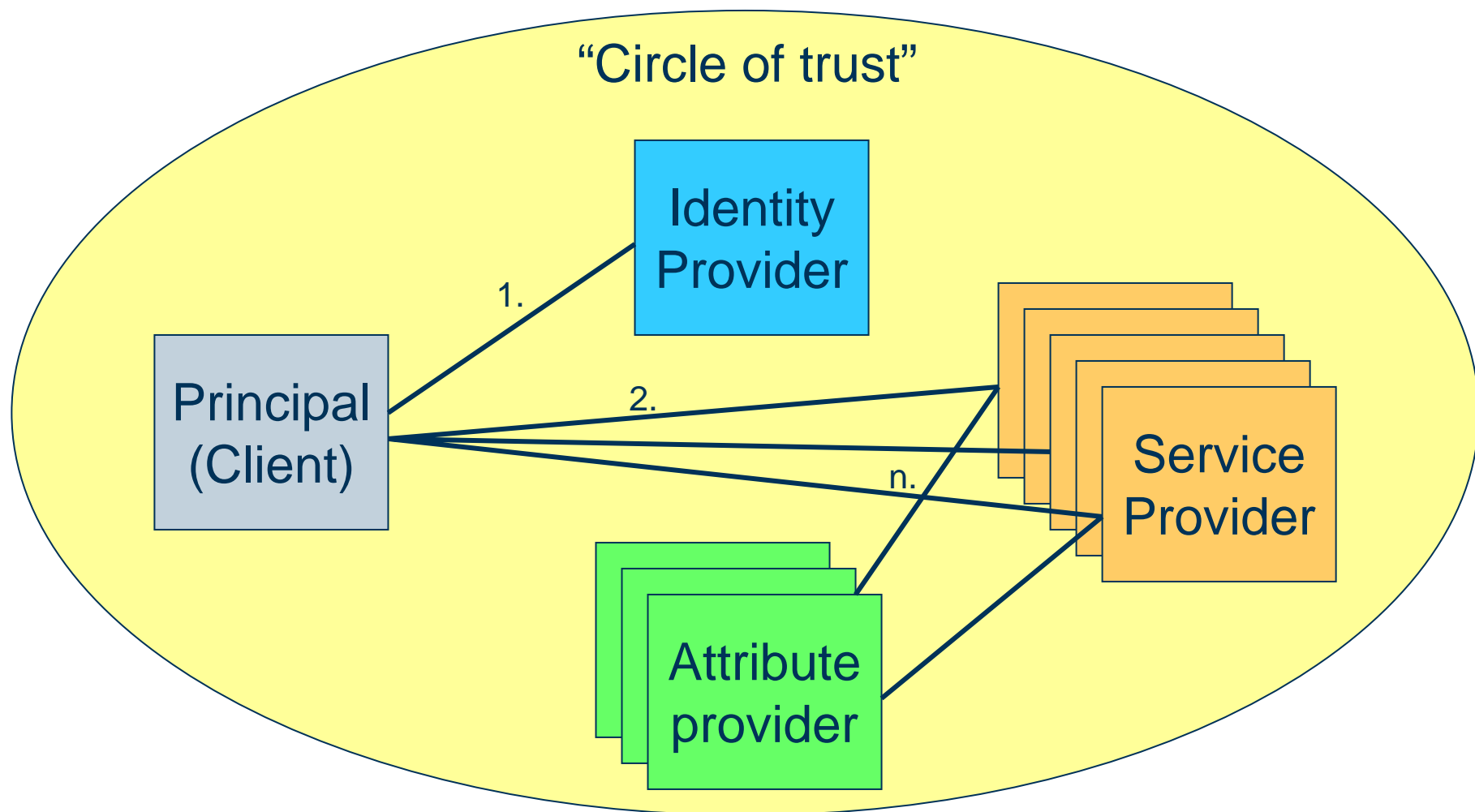
## Why

- User Convenience & Control
  - Single Sign On -- **Password fatigue**  
Single Sign On
  - Personalized services (Attributes)
  - Limited data entry capabilities (small screens, small keypads)
  - Privacy
- e-Business
  - Simple interfaces for service access and use.
  - Controlled access to user data.
  - Standardized business interfaces
- Government Trends
  - e-Government
  - Privacy regulations
- Identity Theft

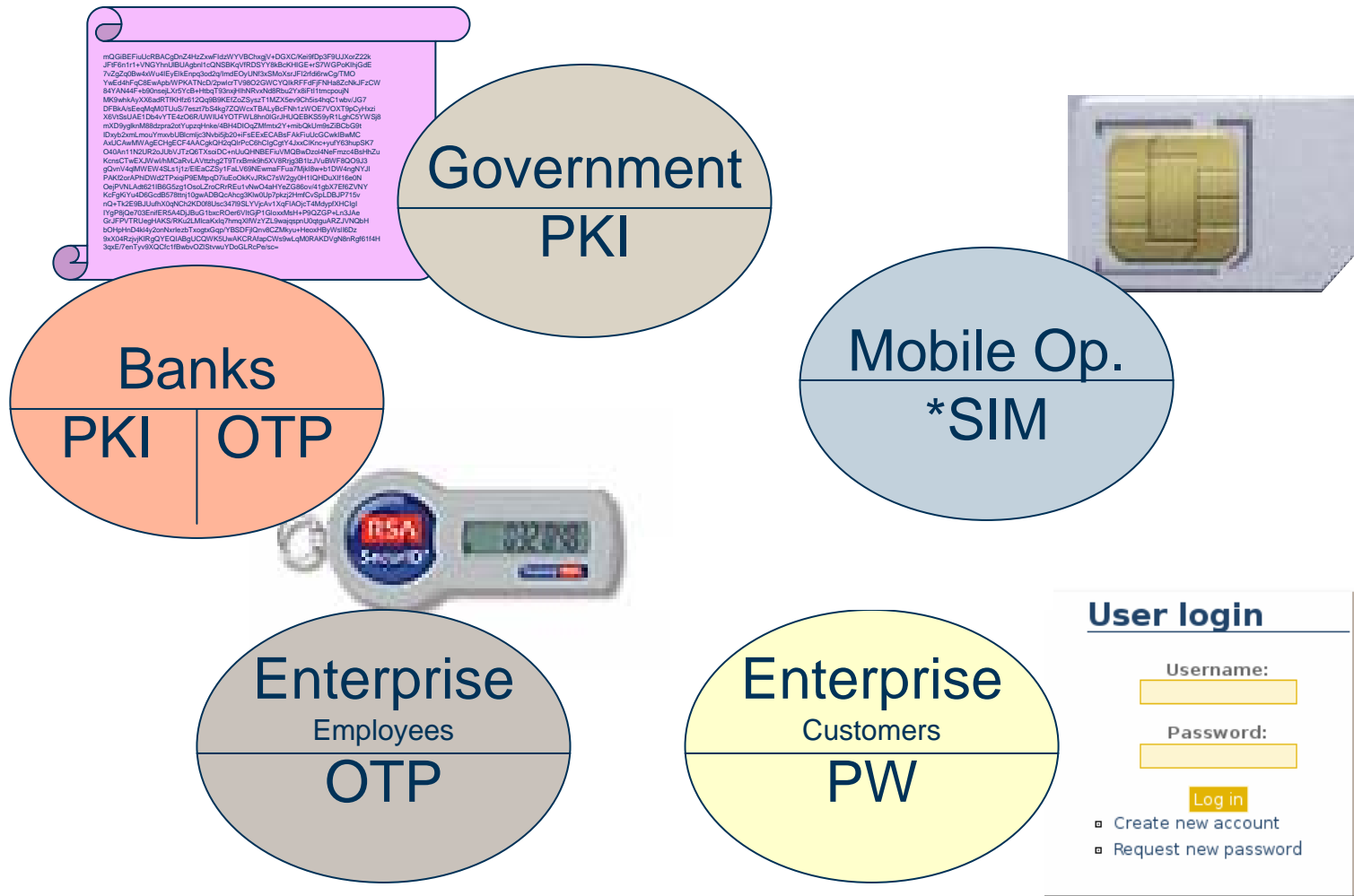


# Identity Management

Roles, SSO & Attribute sharing



# Identity Providers and Technology



# User attitudes

## An Ericsson Consumer & Enterprise Lab Investigation

An investigation on user attitudes  
towards **Digital Identity Management**  
and different **Identity Providers**





# One Identity Provider

Mobile phone operator; Identity token in mobile phone



Incorporating one's ID into the mobile.

- The SIM would be the ID's support, the element where all data are stored. It will be placed inside the handset, so that the phone itself serves as the container.

# One Identity Provider

“Other” identity provider; Other identity token



As a necklace...



...or as a card.

- The user ID would be in a token, but it will be stored *outside* the phone – on a necklace, or a card in one's wallet.
- The identity token becomes “independent” and loses its link with the mobile phone.

# Multiple Identity Providers

Independent Identity Providers;



- Different identities for different roles such as personal, commercial, entertainment would be stored separately in one or more identity tokens
  - For instance, like different keys on a key chain.

# User Requirements

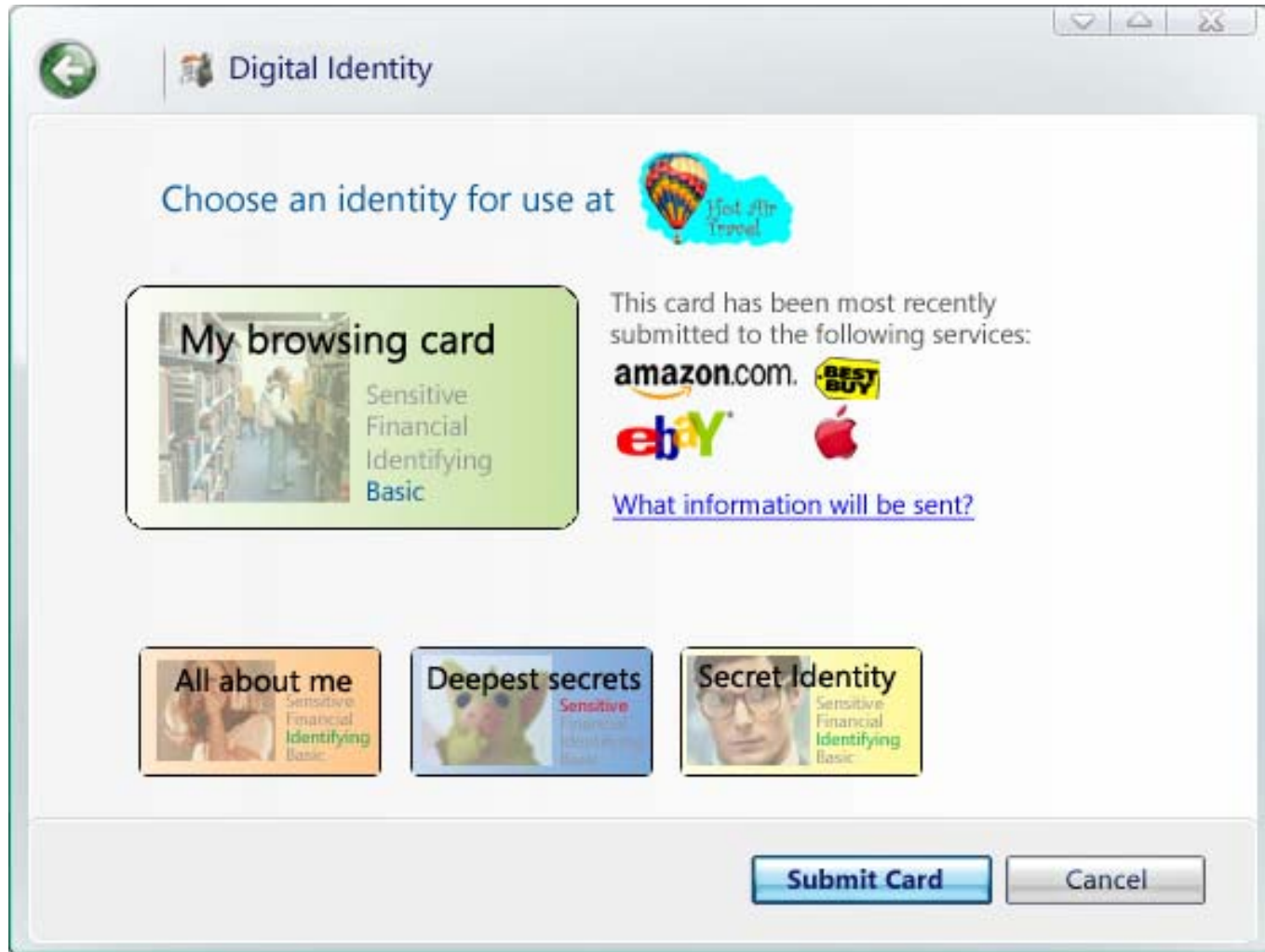
## Conclusions

- Many identities
  - Identity should match context
- Many Identity Providers
  - Identity Provider should match context
- Usability
  - Consistent appearance across contexts
- User control
  - Release of attributes with minimal disclosure for defined use.
  - Choice of Identity Provider for given service
- Privacy
  - Unlinkability
  - Anonymity

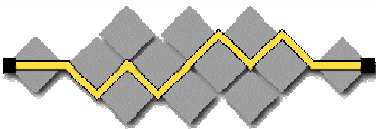


# User interface

## Microsoft proposal



# “Standardization”



- Liberty Alliance
  - SSO, Attribute sharing
  - User control, Privacy
- OASIS
  - Web Services “Security”
  - SAML (Liberty SSO)
  - A toolbox
- OMA (Open Mobile Alliance)
  - Liberty
  - Web Services
- 3GPP
  - GBA (Generic Bootstrapping Architecture) \***SIM based**
- IETF
  - Protected OTP (EAP method)
- “Microsoft”
  - Web Services Security
  - Identity Meta System



# The end

- Questions?





**TAKING YOU FORWARD**



# The Laws of Identity

- User control and consent
  - Minimal disclosure for a defined use
  - Justifiable parties
  - Directional Identity
  - Pluralism of operators and technologies
  - Human integration
  - Consistent appearance across contexts
- 
- Join the discussion at <http://www.identityblog.com/>