

User Centric Reputation

Design, Implementation & Issues

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**THE WORLD NEEDS
A BOOK ON DIGITAL
IDENTITY!**

Unmasking Identity Management Architecture (IMA)

Digital Identity

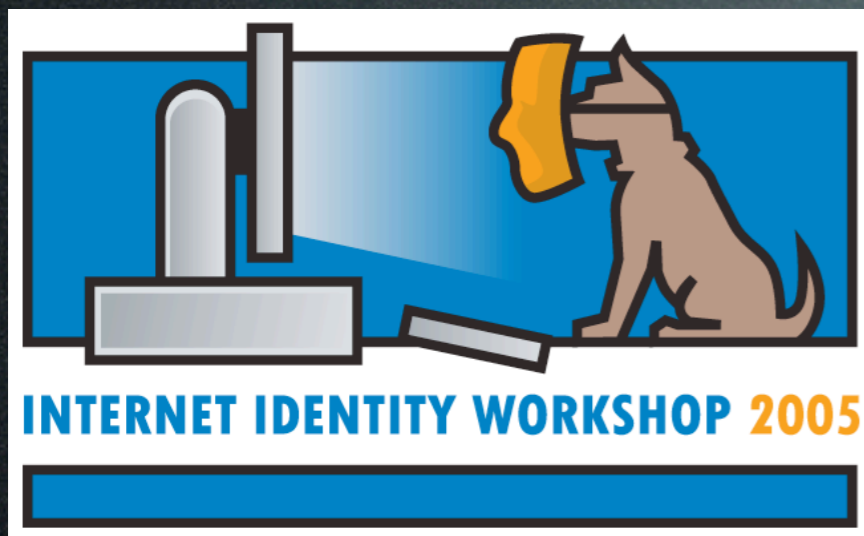


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October, 2005



May and
Dec, 2006



May 14-16, 2007
Mountain View, CA

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ORGANIZATIONS GET THE IT THEY DESERVE



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September 09, 2005

Identity 2.0: The Movie

If you missed Dick Hardt's presentation on Identity 2.0 at OSCON this year, he's turned it into [a movie](#). This is well worth viewing if you've got any interest in identity.

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XQuery Apache Module

From Freshmeat:

Native XmlDB Query Daemon is a client-server version of the Sleepycat native XML database deployed as an Apache module. The client is a pure Java API, supporting XQuery, XPath, and an Xml:DB API layer. It comes with a graphical admin console. Server binaries are provided for Linux x86 and x86-AMD64; for other platforms, compile from source.

*From [freshmeat.net](#): [Project details for Native XmlDB Query Daemon](#)
Referenced Fri Sep 09 2005 09:54:31 GMT-0600 (MDT)*

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September 08, 2005

IIW2005: Hotels and Wiki

Digital Identity



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September 11, 2006

Vitamins, Pain-killers, and Viagra

Dick Hardt intro'd a panel on identity at big sites (meaning eBay, Yahoo!, Google, MSN, and so on). He used a great analogy of vitamins, pain-killers, and Viagra. We've been selling ID Management as vitamins. Everyone knows that they're good for you, but there's no urgency. With pain-killers, there's urgency. Viagra, on the other hand lets people do things they couldn't do before. User-centric identity is a pain-killer for users, but only a vitamin for big sites.



Dick Hardt
(click to enlarge)

How do you turn user centric identity into Viagra? He uses eBay as an example. By using a user-centric, federated identity system, they could allow other sites to use their reputation system and charge for the privilege. That's a good example of enabling behavior from shared identity.

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the identity of entries
enables conversation

identifiers

what's in a name?



Samantha

Matsuhiko

Fred

Alice

George

Greta

Steve

Cindy

Kristen

Lynne

Betty

Monty

Phil

Tonya

Rumplestiltskin

3 Phillip Windleys

HowManyOfMe.com



There are:
3
people with my name
in the U.S.A.

[How many have your name?](#)

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HowManyOfMe.com



There are:
3
people with my name
in the U.S.A.

How many have your name?

50,000 John Smiths

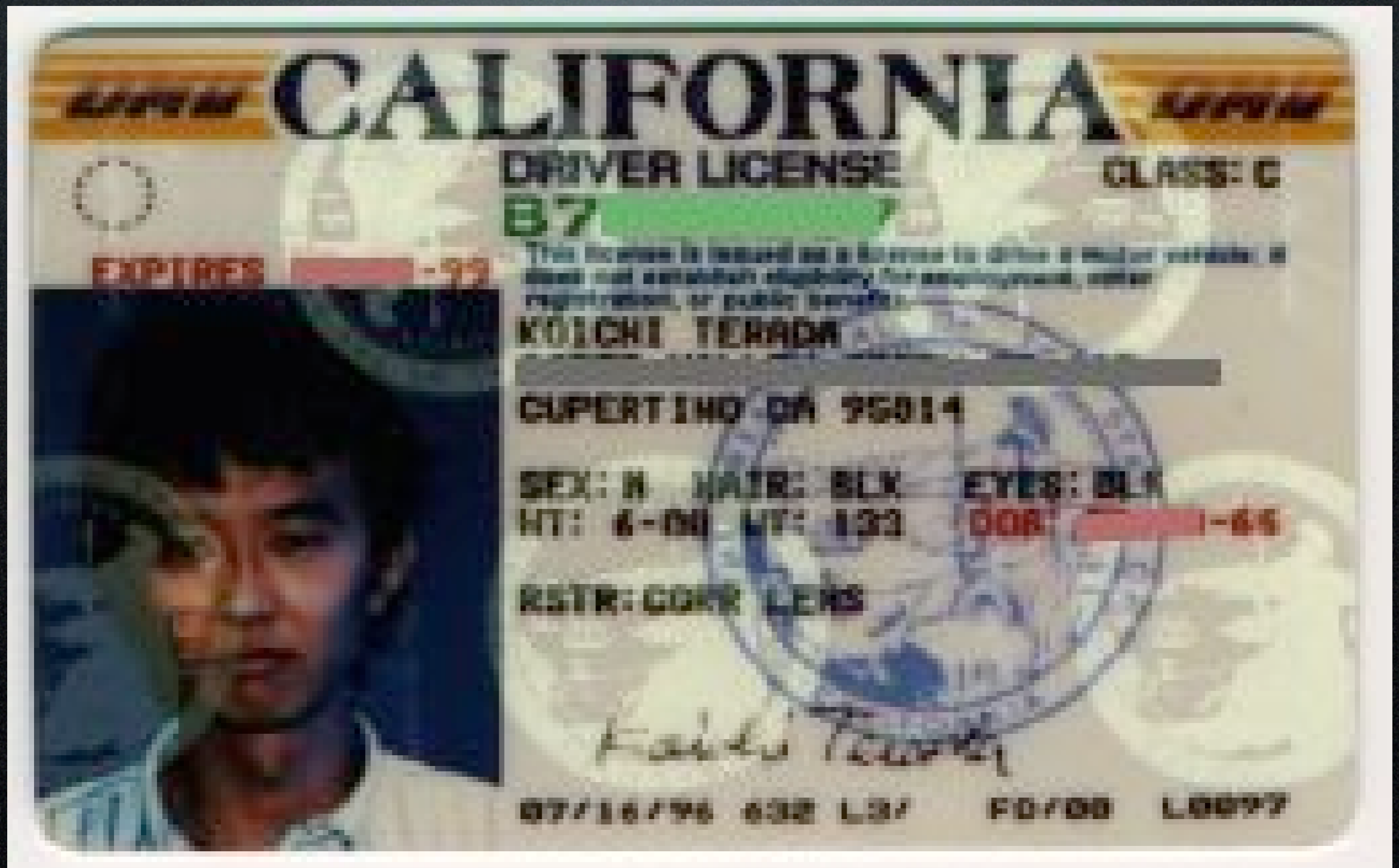
phil@windley.org

windley.com

<http://www.windley.com/essays>

xri:///windley

Credentials & Identity



user-centric identity

An identity layer for the Internet



Vint Cerf

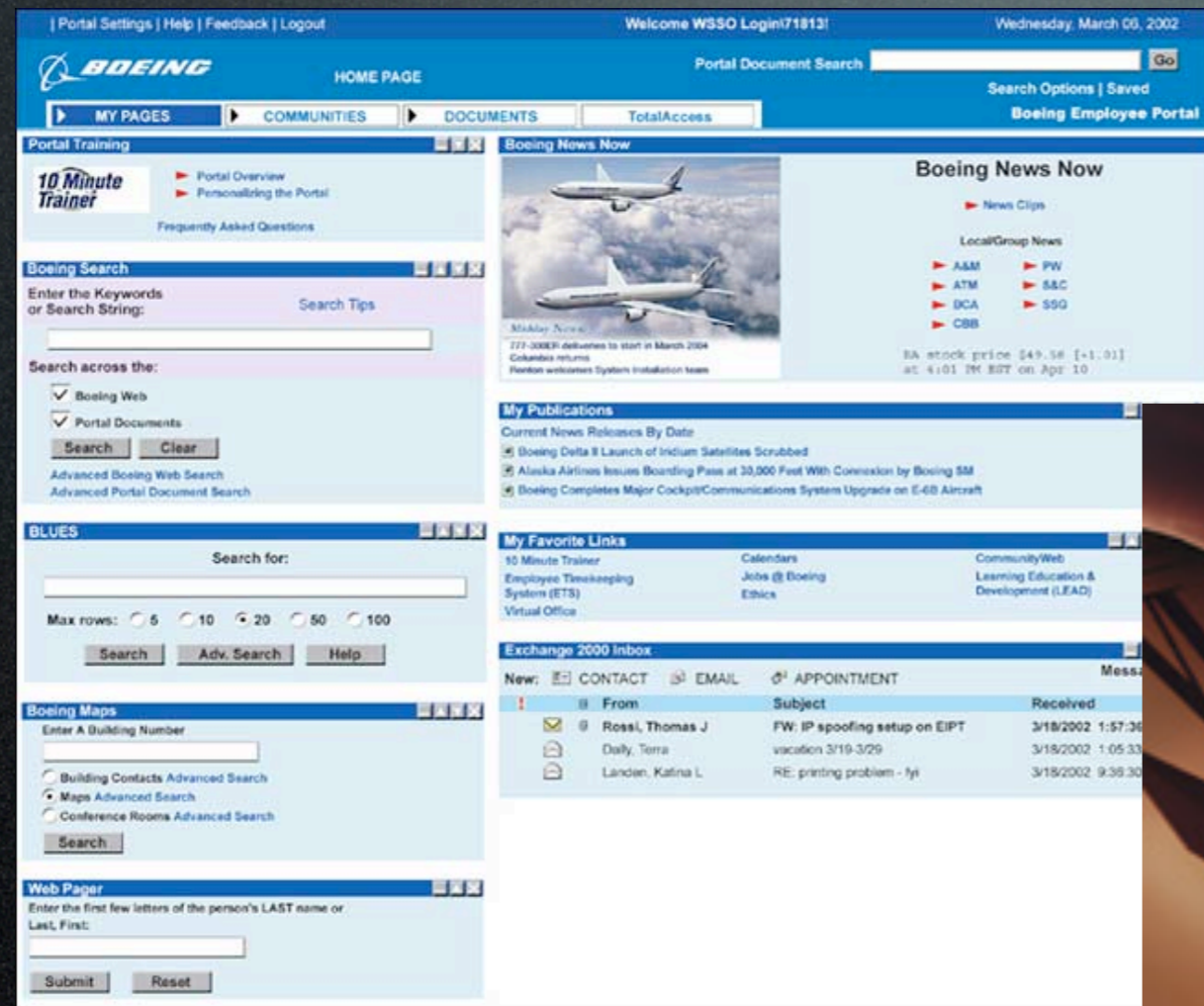
Cameron's Laws of Identity

1. User consent and control
2. Minimal disclosure
3. Justifiable parties
4. Directed identity
5. Pluralism
6. Human integration
7. Consistent experience across contexts



Federation Problems

Linking 401K site
to employee
portals



Roles

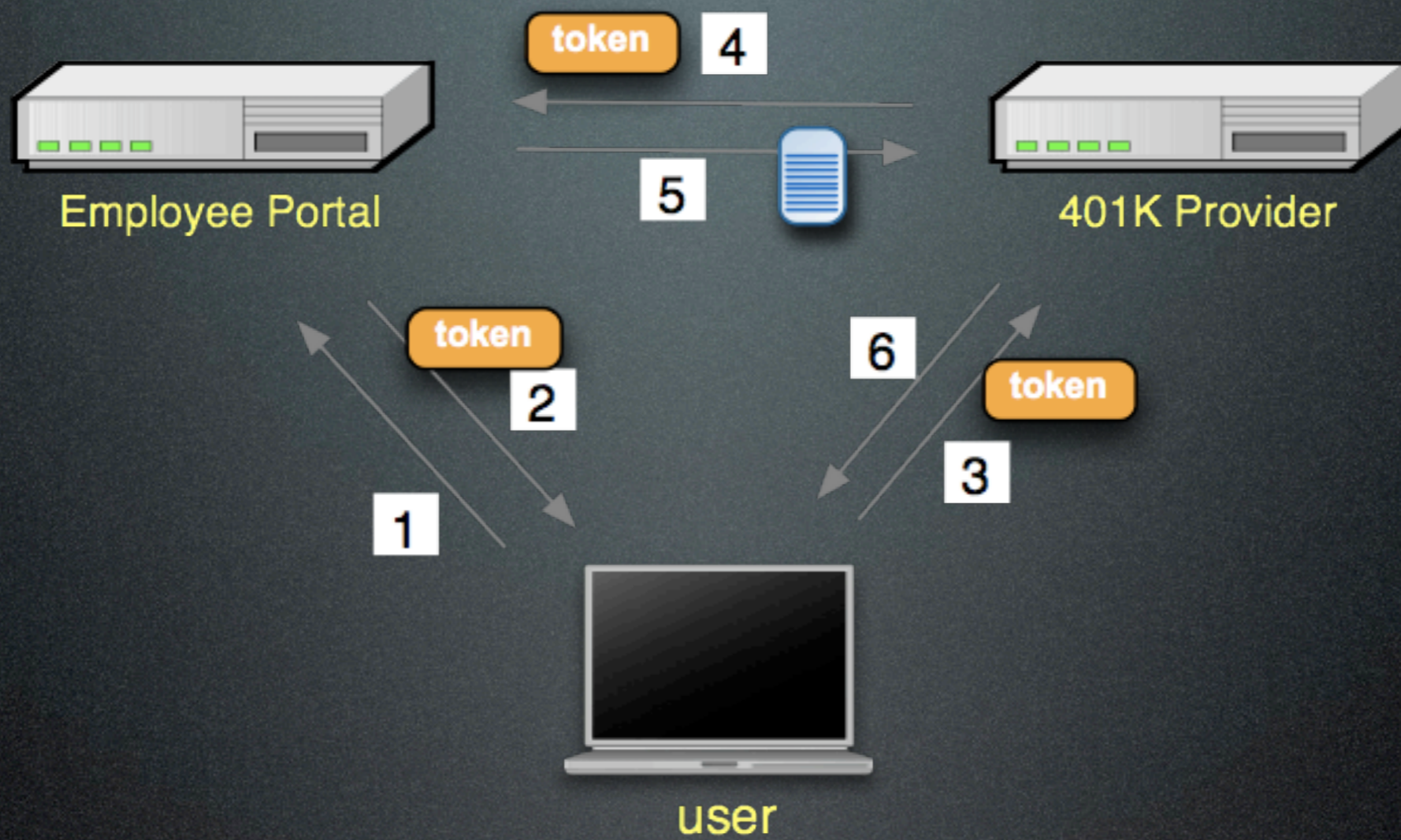
1. Identity Provider
2. Relying party

Roles

1. Identity Provider
2. Relying party
3. User

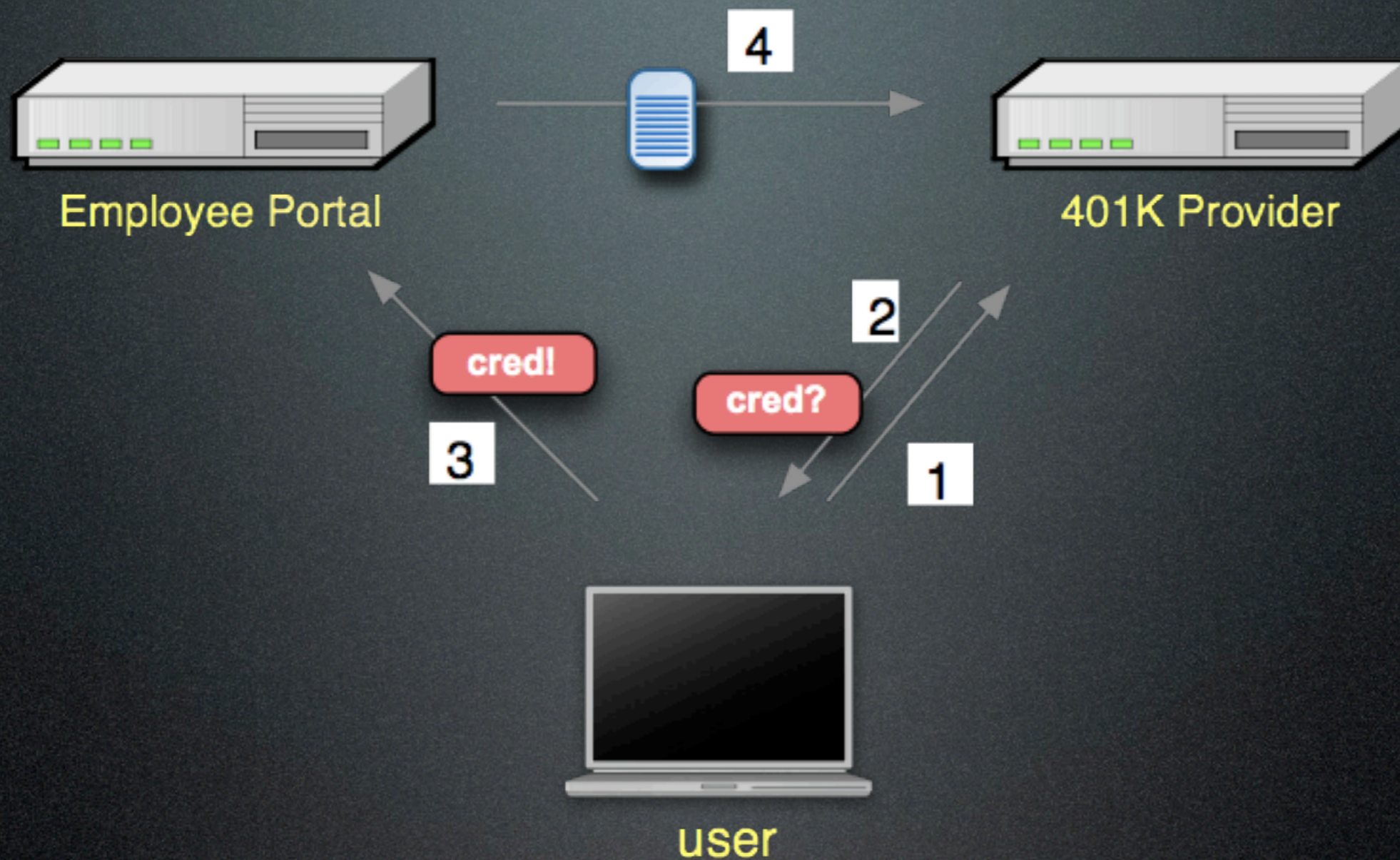
Identity Provider

- Provides testimony regarding the accuracy of claims
 - maintains records about a user
 - maintains account with the user
 - may assume liability
- Provides registration process for account establishment
- Provides authentication services
- User may act as their own identity provider



scenario one

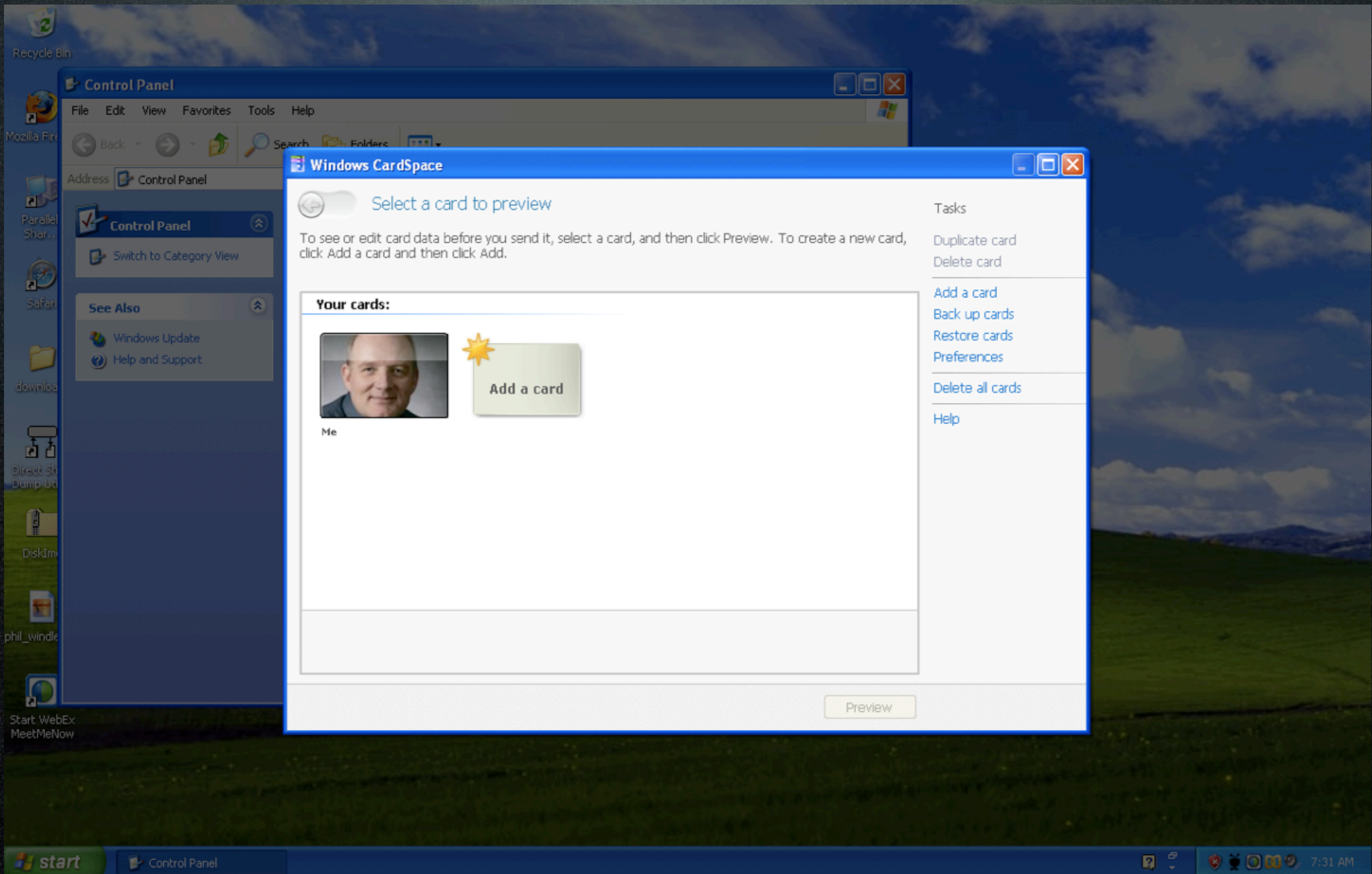
- ID issuer and relying party have prior arrangement
- User is only involved peripherally and because of policy



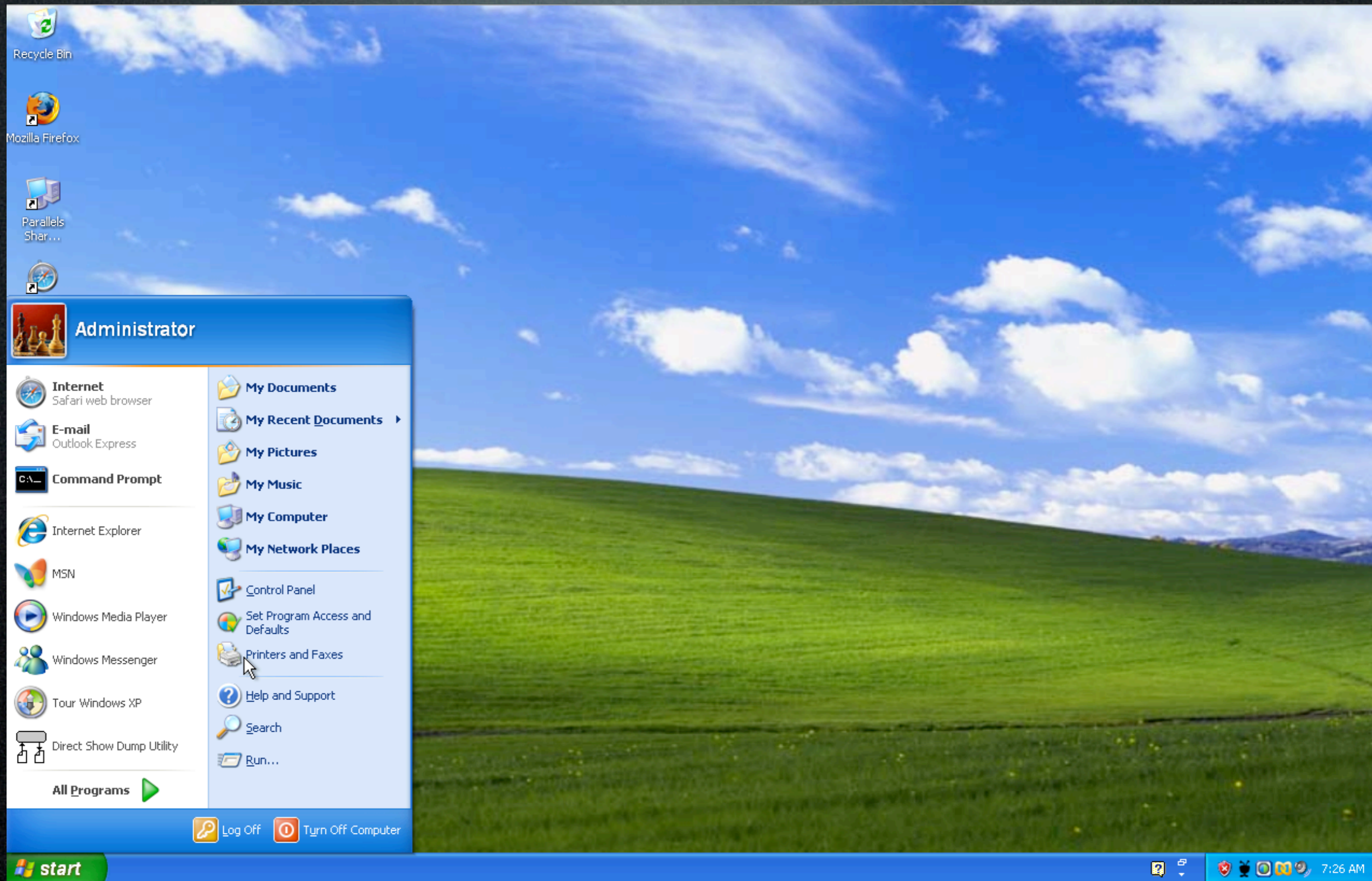
scenario two

- ID issuer and relying party need no prior agreement
- User involved structurally

CardSpace



CardSpace Identity Selector



CardSpace Screencast



<http://openid.aol.com/pjwindley>

<http://www.windley.com>

delegation

```
<head>
```

```
...
```

```
<link rel="openid.server"  
      href="https://www.myopenid.com/server" />
```

```
<link rel="openid.delegate"  
      href="http://windley.myopenid.com" />
```

```
...
```

```
</head>
```



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June 22, 2007

Hard Choices

I'm trying to figure out:

1. Where's the best place near my house to get an iPhone?
2. Which of my kids should I make stand in line all day for me?

Sometimes being a Dad is tough work. If anyone has good intel on iPhone sources in Utah County, let me know.

Update: Near as I can tell, the AT&T store in American Fork will have them. Still checking.

Posted on 06:27 PM | [Comments \(1\)](#) | [Recommend](#) | [Print](#)
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iPhone Tour

I'm watching the [20 minute guided tour of iPhone](#) that Apple posted today. While [Amanda](#) might be cheating the word "amazing" it's an excellent word to describe the phone this

MY TWITTERINGS

Phil Windley: In Denver. Finding food.
Phil Windley: headed to Denver. I'm giving the keynote at JA-SIG tomorrow
Phil Windley: back from a 50 mile bike ride in 103 degree temps. Good to be home.
Phil Windley: Done with IT Conversatinos stuff I think it's time for the weekend.
Phil Windley: back from picking oldest daughter up at camp. Done paying bills. Headed to work...

FREE NEWSLETTER!

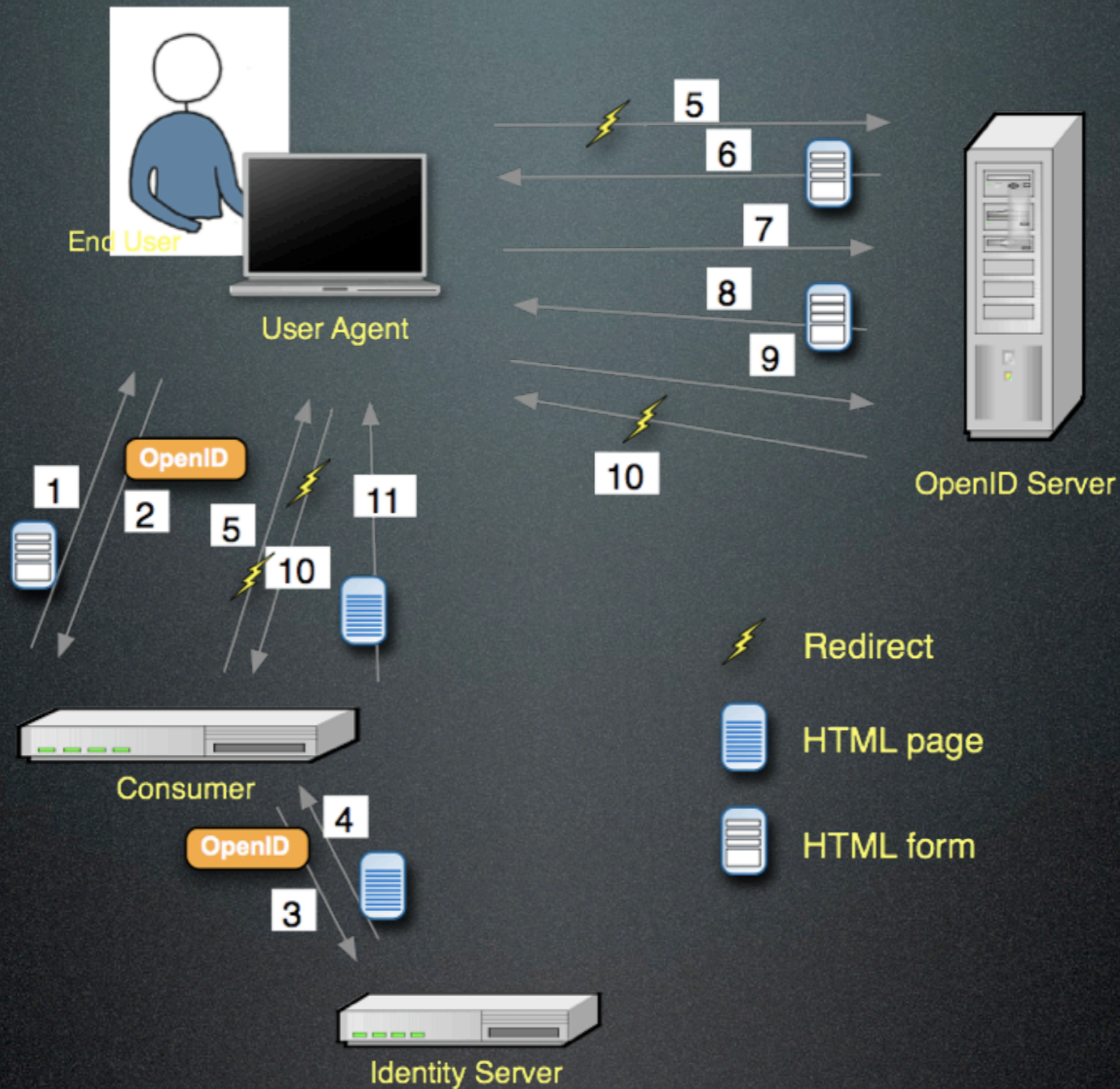
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OpenID Screencast



OpenID interactions

Using OpenID

Internal deployments
useful for loosely
coupled organizations

Authentication
services prevent
promiscuous password
passing

User involvement
mitigates trust issues

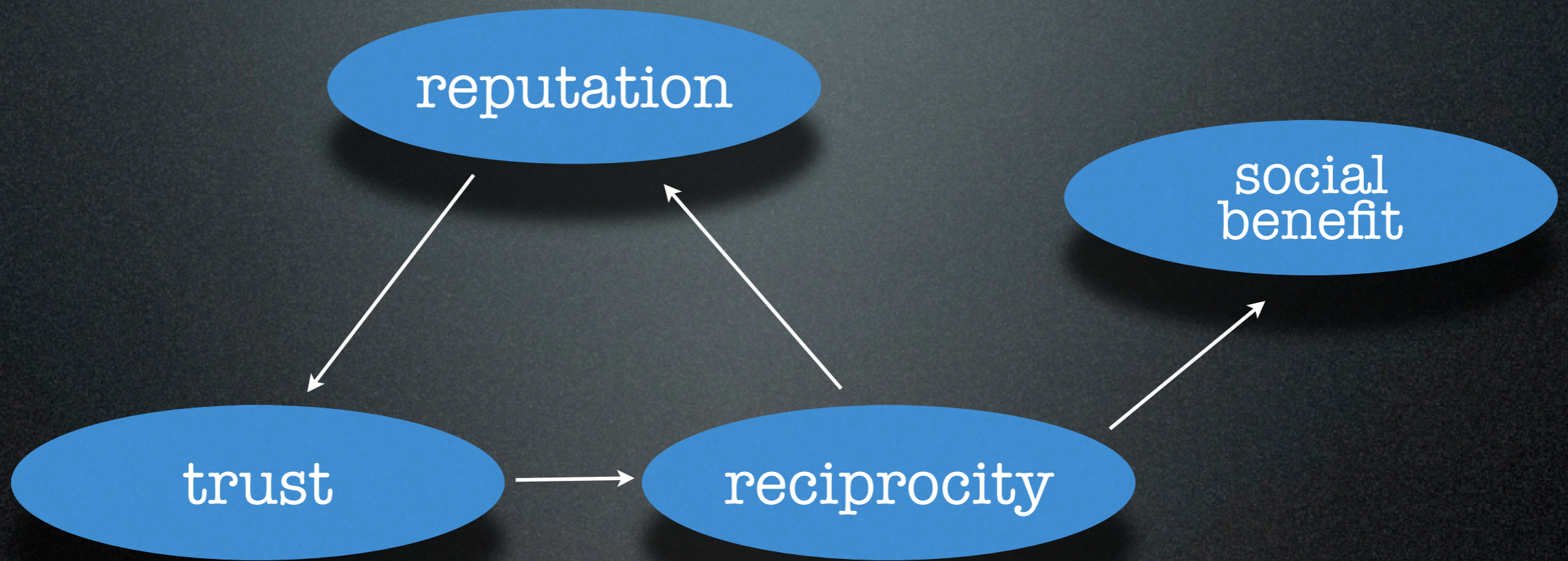
The Lay of the Land

- AOL has become an OpenID provider
- AOL has NOT become an OpenID replying party

Who Pays?

- Authentication will be free (mostly)
- Users will almost never pay
 - Notary services
- Relying parties will pay for
 - Advanced authentication services
 - Authorization, reputation, audits
 - Access to attributes

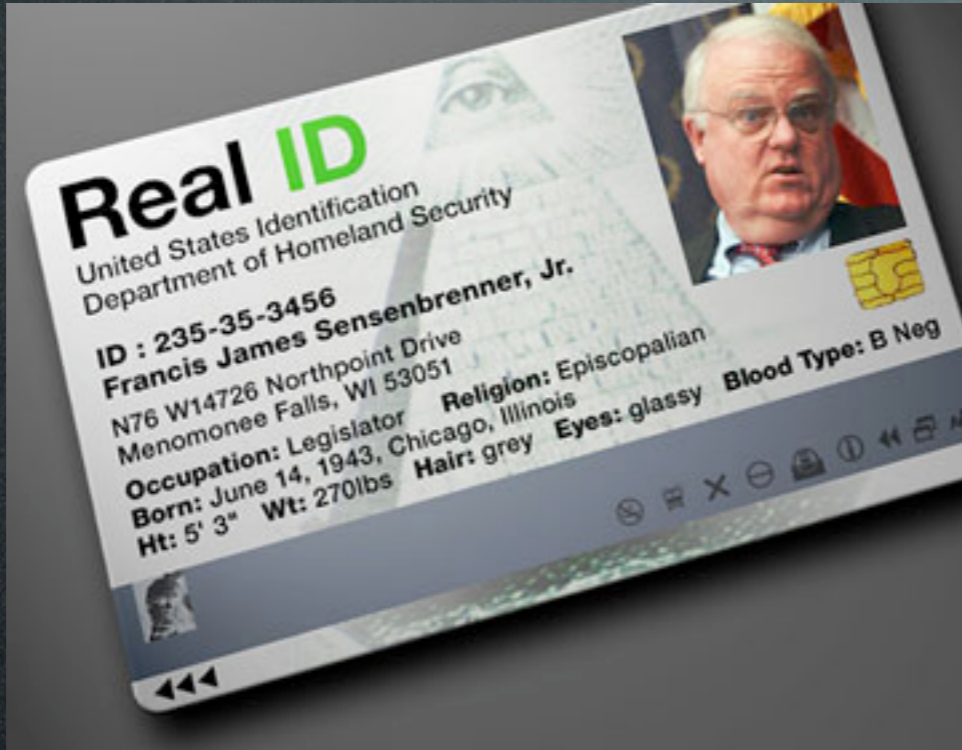
Accountability,
Reputation,
Privacy &
Authorization













privacy

privacy



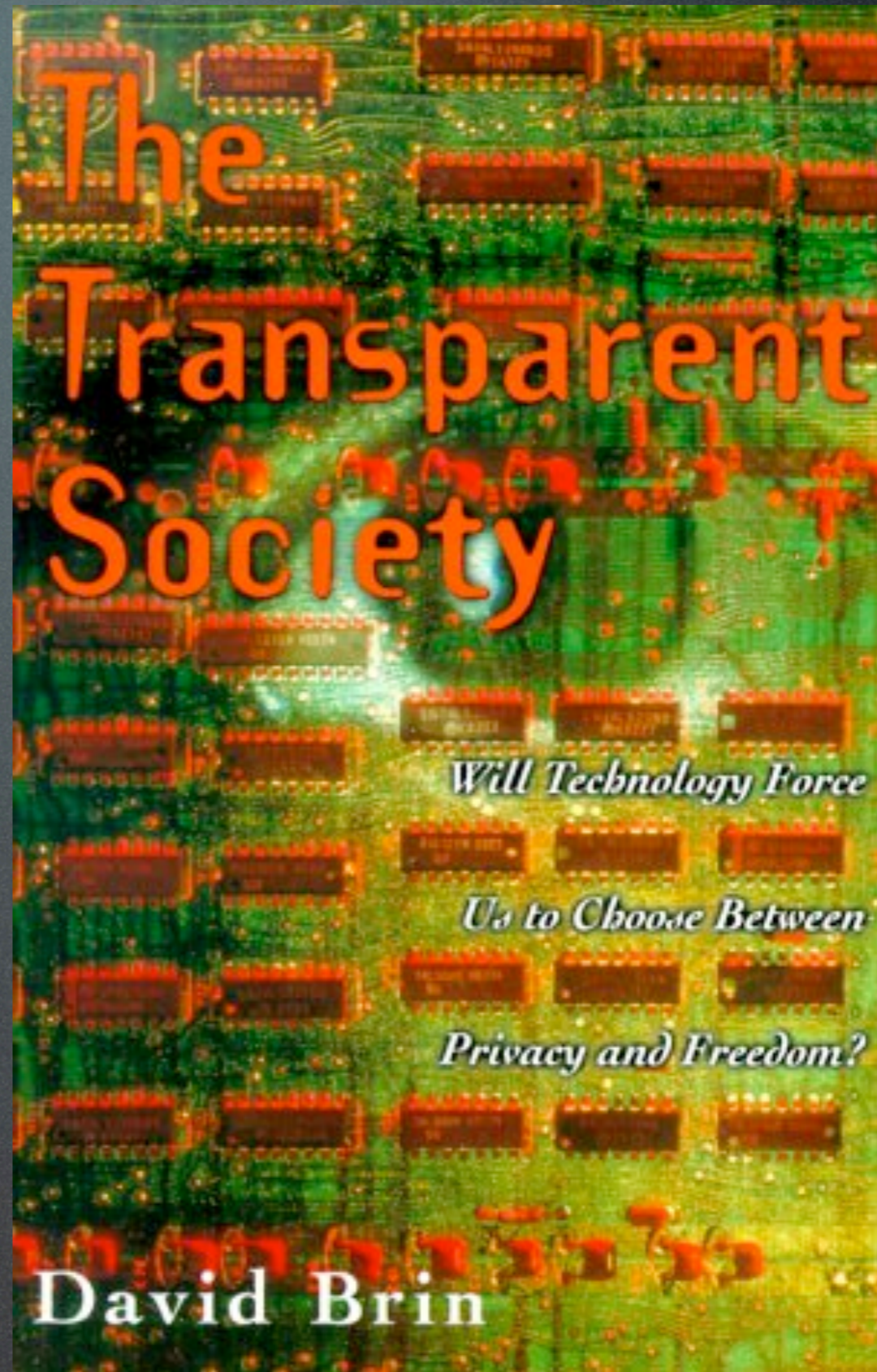
privacy



**YOU HAVE NO
PRIVACY ANYWAY.
GET OVER IT!**



Scott McNealy,
CEO Sun



Accountability: Pick Two

1. Tools that help me see what others are up to.

2. Tools that prevent others from seeing what I am up to.

3. Tools that help others see what I am up to.

4. Tools that prevent me from seeing what others are up to.

Accountability vs. Enforcement



- Access control scales geometrically (its a multi-dimensional table)
- Accountability scales linearly
- Access control systems are incredibly vulnerable to DDoS attacks

“Accountability is a log processing problem”

-Dan Geer



anonyms and pseudonyms



CHEAP!!!

pseudonyms



Today
Only!!

Three gold bars are arranged diagonally from the bottom left to the top right. Each bar has a circular embossed logo at the top and a larger embossed design in the center. The middle bar has the text '1000 FINE GOLD 999.9' embossed on it. The text 'positive reputations are valuable' is overlaid in white, sans-serif font across the center of the image.

positive reputations are
valuable

negative reputations don't stick...



Pseudonym Strategies

Friedman and Resnick,
The Social Cost of Cheap Pseudonyms

The Children Learn About Strangers and Safety



at Luv-n-Hugs Day Care

By Sherri Koehnen Goehring

Illustrator Kelly Koehnen

Distrust Strangers



Make name changes
costly



Commit to permanent
names

anonymity enables
social good

Authorization

Traditional View

- Enforcement
- $U \times R \times A$ table
 - $U \Rightarrow$ Users
 - $R \Rightarrow$ Resources
 - $A \Rightarrow$ Actions

Authorization Problems

- Scaling
 - Roles help
- Control of identities
 - Cheap pseudonym problem again
- Two ways to scale:
 - Accountability (audits)
 - Reputation

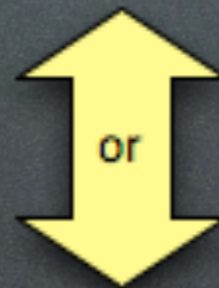
Examples



Authorization

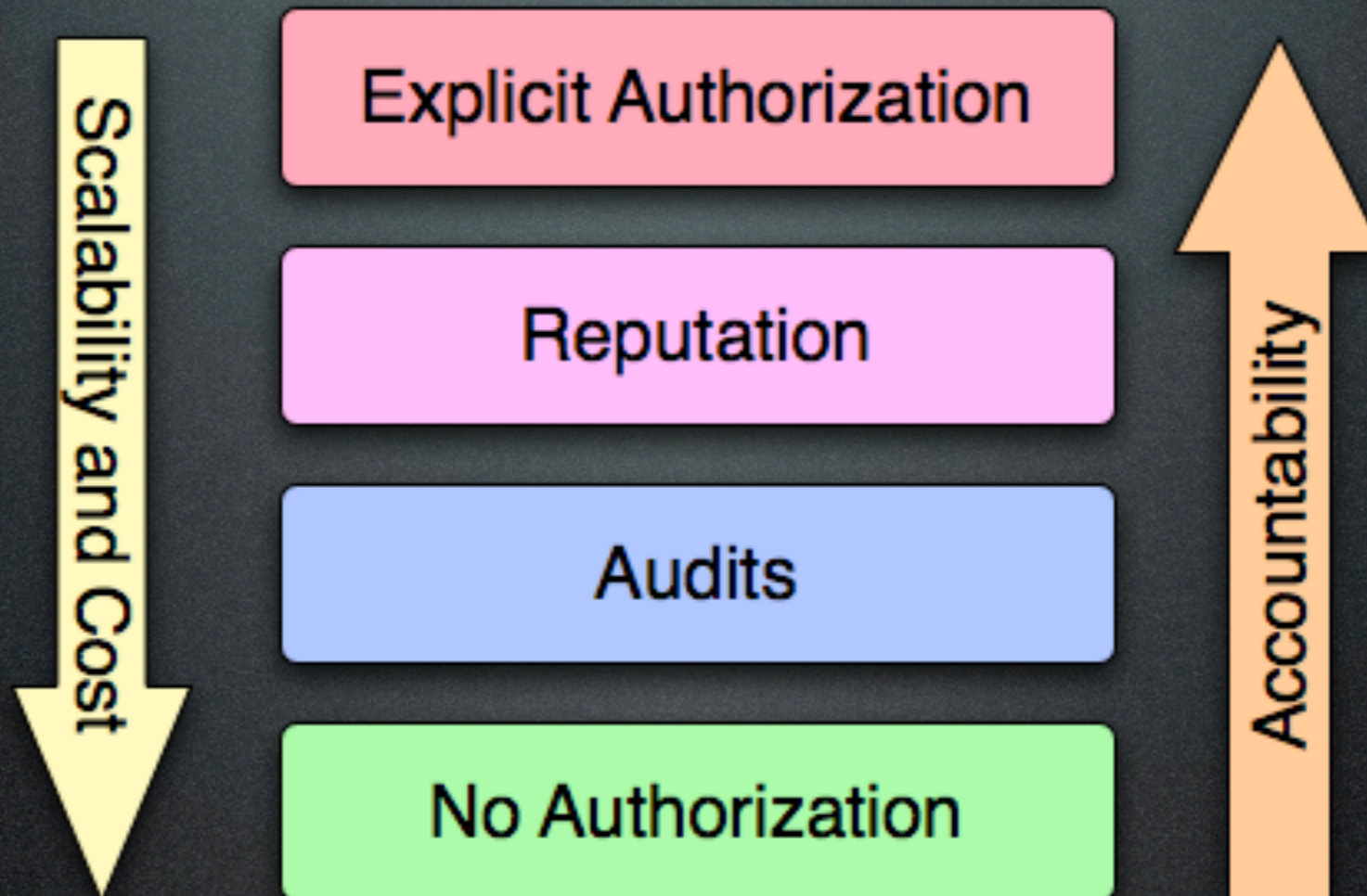
The Traditional View

Explicit Authorization



No Authorization

Authorization Hierarchy



Reputation



your story about me

Principles of Reputation

Reputation should be
user-centric

Reputation has value

Reputation is
narrative and
dynamic

Reputation is based on
identity

Reputation is based on
claims, transactions &
opinions

Reputation exists
within **specific**
contexts

Reputation **quality** is
an important
metavalue



reputation vs. privacy



Linking Identifiers

Reputation context

What are the semantics of the context and how are they expressed?

Plug-in

Tags

Algorithm Design

Can everyone really
build their own
algorithm?

Bootstrapping

Recovery

In real life people
control their personal
algorithm

Pythia is a vehicle for
exploring reputation
systems

CS601

- Reputation theme
- Reviewed dozens of papers*
- Class project
 - Agile methodology
 - 3 two-week sprints
 - 9 students

* Bibliography available on request

Design Philosophy

Reputation is a
calculated **score**

Support for **multiple**
computational models

Support **linking**
identifiers

Factors

- **Verified** claims and facts
- **Direct** and **indirect** transactions
- Opinions from **third party** network sources
 - No direct user opinions

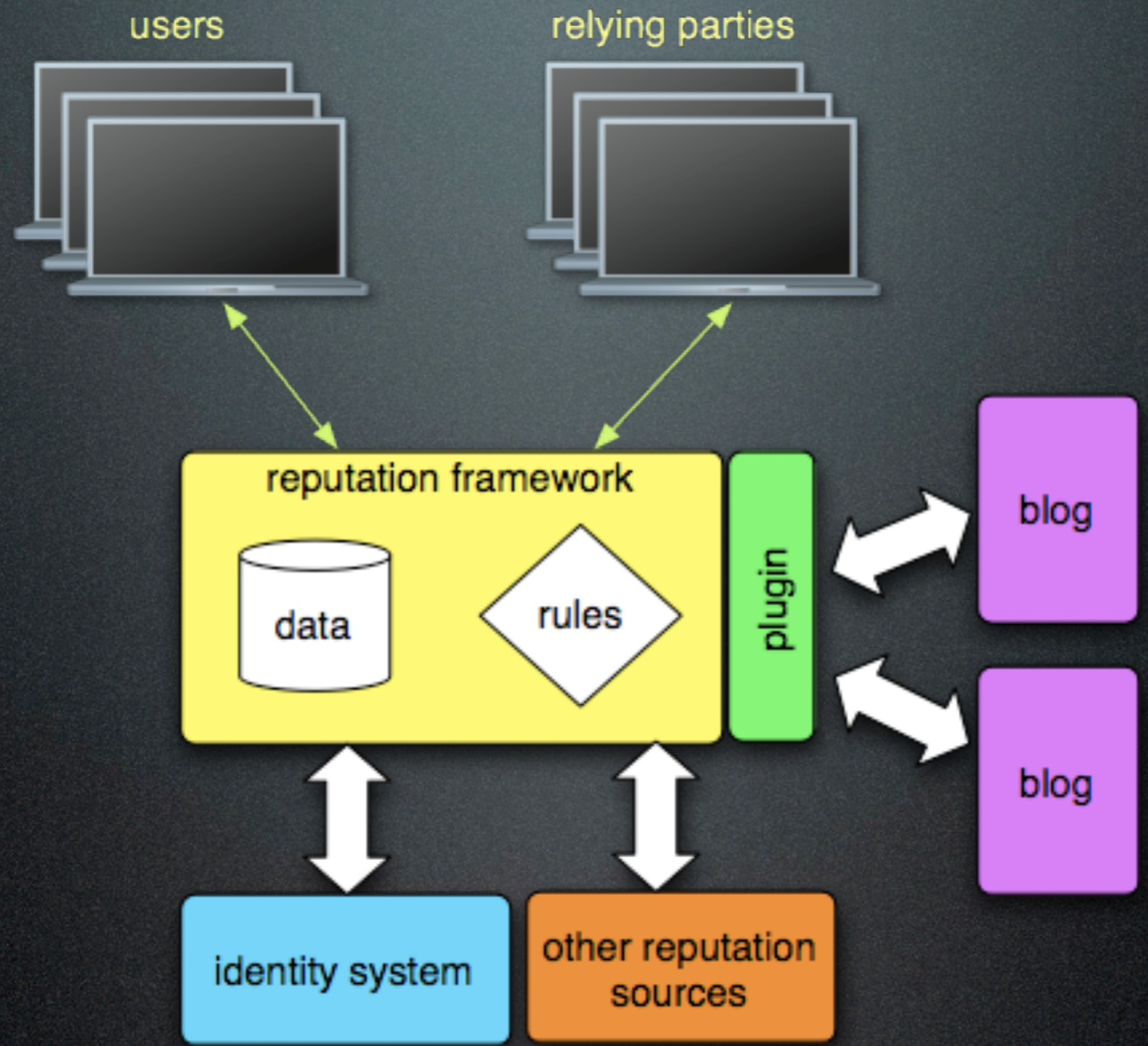
Transparency

- Important to give feedback
 - privacy & selective disclosure
- User can see
 - All transactions
 - All queries and results
- Aids user in determining what to disclose
- Future: Better feedback

Transactions jointly
owned & immutable

Current Architecture

- ID system neutral
 - Linking identifiers
- Data model for users and credentials
- Rules engine
- Tags (folksonomy) for transaction semantics
- Plug outs to online systems
 - Whois, Akismet for example
- Centralized



Reputation as a substitute for authorization

Why?

- Explicit authorization may not scale
- Explicit authorization may be too costly
- Explicit authorization may not be possible
- Explicit authorization may not suit product requirements

Blogs and MediaWiki



the end

Contact Information

Contact me

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- www.windley.com

Questions?

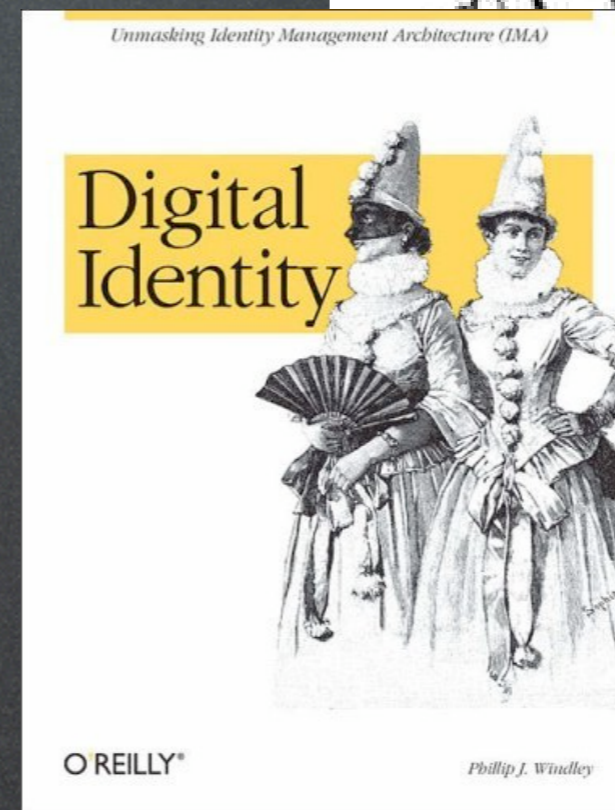


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