The Higgins Project:
Understanding the Architecture and Use Cases

January 22, 2007
1: a species of Tasmanian long-tailed mouse

2: the name of an open source project
Life On the Net Circa 2007

- Buddy Lists
- Websites
- Enterprise Apps
- Virtual Spaces
- Communities of Interest
- Email or IM
- Professional networks
- Dating networks
- Book club
- Family
- eCommerce (e.g. Amazon, eBay)
- Social Networking (e.g. LinkedIn)
- Healthcare System
- Corporate Directories
- Professional networks
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Home & Personal

- Child: Sarah; born Jan 12 2001, Kindergarten, Heath School, friends: Lesley, Jacob, Tamara, Jesse

- House: 123 Main street, Buena Vista, Colorado; Purchased 3/2005; GMAC Mortgage (owe: $245,256)

- Suppliers: Jeremy’s lawn service (303) 231-8899; Always Oil Delivery; Jim’s Lawn Care;

- Credit Card: Capital One Visa: 4239-4876-3425-2980

- Banking: BofA: 9111-099-234-990 ($1,222.98)
Work

- Employer: REI, 23 Chestnut Street, Buena Vista, CO 32040
- Phone: (303) 236-9981; Fax: (303) 236-9980
- Employee: #290-21; hired 5/4/2003; Salary: $56,500; 2 weeks vacation; Blue Cross family medical; KeyCard: 23-09-23; permissions: level4; password: ******
- Email: jjones@rei.com
- Top 100 Sales Club 2005; Manager: Fred Ferndale
Alumnae

- University of Colorado
- Housing: Harkness House
- Graduated: 1995; BA Communication
- Employer: REI
- Affiliations: Varsity Softball 2003, 2004
Healthcare

- HMO: Blue Cross Blue Shield: Group Id #3236758-3
- Primary: Dr. James Levine
- Physical: O-neg, 149lb
- Fitness: Power Yoga, walk 5 miles/week
Social

- Blog: http://www.blogger.com/on-a-clear-day
- Personal: single, white, female, age 34; 148lb; 5’10”
- Looking for: friendship with opposite sex
- Friends: Rebecca, Samantha, Tamara, James...
Travel

- **Frequent Flier Programs**
  - United.com - united.com, user id #00593045, password ****, window seat, 303-256-9976, emergency contact, Visa # 4703-002 -098-3988..., street, city, state, zip
  - American - aa.com, user id #2038-334-430, password ******, window seat, no meal preference, 303-256-9976,...

- **Car Rental Programs**
  - Avis: MyAvis profile: Country: USA, Avis Wizard Number: 234 -523-783, personal itineraries, reservations, rental receipts, ...

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Multiple Identities with One Point of Control

Associations, Alumni, etc. > SFA, HR, etc. Enterprise Apps

Best Buy.com eCommerce Sites
United.com

Healthcare Sites
WebMD.com

LinkedIn.com
Thibe.net
Social Sites
Match.com

Shopping Healthcare Social

Home & Personal You Travel
Multiple Identities with One Point of Control

Personas

Associations, Alumni, etc.

SFA, HR, Etc.

Enterprise Apps

BestBuy.com

eCommerce

Sites

United.com

Healthcare Sites

WebMD.com

LinkedIn.com

Social Sites

Thibe.net

Social

Home & Personal

Shopping

Healthcare

You

Social

Travel
Card-based UI Metaphor

> Site-specific cards.
> E.g. your relationship with BestBuy.com

> Persona cards, for the roles you play
Relying Party
Browser Extension and Higgins Client
Browser Extension

Service

Data Sources (Token Services)

REI Employee

U of Colorado

Second Life

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Browser Extension

Site

REI Employee
U of Colorado
Second Life

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Browser Extension

CardSpace
OpenID
CardSpace
LDAP
Liberty
Site

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Interoperability Framework

1. Card-based UI Metaphor
2. Multiple Relying Party Protocols
3. Multiple Attribute Provider Protocols
4. Identity Data Model
5. Linux, OSX, Windows

Browser Extension

Relying Party

Higgins

RP Interaction Patterns:
- CardSpace
- OpenID
- RSS
- HTML
- ...

Context/Attribute Providers:
- LDAP
- RDF
- Liberty
- OpenID
- ...

Discovery:
- XRI
- Yadis
- WS Addressing
- ...

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Higgins Scope

- Consistent user experience based on card icons
- Empower users with more control over personal information
- Provide an API and data model for the virtual integration of identity and security information
- Provide plug-in adapters to enable existing data sources
- Provide a social relationship data integration framework
Component Architecture

- I-Card Manager
- RP Protocol Support
- ISS Client UI
- RP Enablement
- I-Card Selector Service (ISS)
- I-Card Registry
- I-Card Provider (PI)
- I-Card File or Wire Formats
- Remote Token Service
- Token Service
- Token Provider (PI)
- Identity Attribute Service (IdAS)
- Context Provider (PI)
- Context Attribute Data Source
- ContextFactory Config Data

Key:
- Higgins Component
- Not part of Higgins
- Remote
- Local
- Local or Remote
- Optional
- PI = Plug-in

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For Developers: Identity Tooling

- Identity management framework
- Saves developer from learning the details of multiple identity systems
- Only one API to learn
- Relies on plug-ins to support major protocols and technologies: CardSpace™, OpenID, RSS, XRI, LDAP, etc.
For End Users: Capabilities

User-centric authentication
- Provides a consistent user experience
- User picks from a selection of visual “i-cards”
- Privacy-enabled claims to share only what is needed (and protect private information)

Personal information “link & sync” services
- Remembers passwords, fills in forms
- Links and syncs your info across silos
- Gives you more control over your personal data
For End Users: Enabling Privacy

Manage private information
- Need to access consistent view of their data, metadata

Share and control access to private information
- Attach (privacy, access) policies at record (e.g. medical records) or attribute (e.g., salary) level

Present information on an “as needed” basis
- Transform attributes (e.g., bank balance = $100k), to claims (e.g., bank balance > $20K) as required
- Relying party only trusts the originating party (e.g. bank) and does not need to trust the transforming intermediary
For the Enterprise

- Integrate identity, profile, reputation, and relationship information across and among complex enterprises
- Create common interfaces to identity and networking systems
- Support advanced process automation by providing “data context”
For the Enterprise: Enabling Privacy

- Enterprise privacy policies
  - Necessary but not sufficient to enforce corporate policies through enterprise systems
- Meet scaling requirements
  - Empower users to control more of their private information
  - Empowering does not imply users can override all policies
- Consumer and employee satisfaction
- Ultimately privacy is about the user
- So let’s give the user some control!
Use Case

- My credit card expiration date changed, so now I need to update it on all the websites I use
Use Case

- I’m writing a new application that is needs to
  - interact with a number of other systems, and
  - be implemented in enterprises with differing standards for security software...
Use Case

- I’d like to rent a car, and just provide proof that I have a valid driver’s license and can pay without also providing my age and home address.
Base Interoperability Diagram

Local App

Browser & Extension

Service Provider

Identity Agent

Identity Provider

Attribute Data Source

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Interoperability Diagram v2

Local App

IE7

Browser & Extension

Identity Agent

CardSpace™

Identity Provider

Higgins Components

Service Provider

MediaWiki

I-Card

Attribute Data Source

LDAP store

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Interoperability Diagram v3
higgins is glue
higgins:
1: a species of Tasmanian long-tailed mouse
2: the name of an open source project
3: a kind of identity glue
{paul, mary}@socialphysics.org
http://eclipse.org/higgins