Managing Trust in e-Health with Federated Identity Management

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Healthcare Implications

Healthcare is all about communities ...

♣ Patients
♣ Providers
♣ Insurances
♣ Pharmacy

...that need to share information

♣ Securely, with
♣ Strong Authentication, and
♣ Simplified Identity Management
Issues in Healthcare

Healthcare: a complex landscape of interaction, information sharing and regulation

- Many systems and locations where authentication required
- Each system requires a different password or login
- Most systems don’t interoperate/ talk to each other!
- Overall requirement to safeguard PHI

Complexity reduces security

- Individuals and organizations must manage many identities
- Multiple points of vulnerability
- Adverse impact on interaction and privacy
Healthcare: A Complex Community

- Telemedicine
- Health Insurance
- Laboratory Services
- Research & Education
- Patient Health Information
- Imaging
- Pharmacy
- Family Doctor
- Medical Specialist
- Hospital
- Billing
- Hospital Services
Liberty Alliance provides the means to build the Common Framework for e-Health

- Technology
- Policy
- Knowledge
- Certifications

Over 150 diverse member companies and organizations from around the world:

- Government organizations
- End-user companies
- System integrators
- Software and hardware vendors

Huge adoption:

- Close to a billion identities already under Liberty standards
Who Is the Liberty Alliance?

- Consortium developing open standards
  - For federated identity management
  - In coordination with other standards groups
- Develops open specifications that anyone can implement
  - Liberty does not deliver specific products or services
- Conformance testing & certification to ensure interoperability
  - 30+ Liberty-enabled products and services currently available
- Addresses business & policy issues of identity
  - Guidelines, best practices documents, checklists
  - Support for global privacy regulations built into specs
About 150 diverse member companies and organizations representing leaders in IT, mobility, government, service provision, system integration and finance from across the globe.

Management Board and Sponsor members include:

- ADAE
- American Express
- America Online
- Avatier
- Bank of America
- BIPAC
- BMC Software
- CA
- Diversinet
- DataPower
- epok
- Ericsson
- falkin systems
- Fidelity
- France Telecom
- Forum Systems
- Gemplus
- GM
- GSA
- U.S. General Services Administration
- HP
- IBM
- Intel
- Kantega
- Medcommons
- NEC
- Neustar
- Nokia
- Novell
- NTT
- NTT DoCoMo
- Oracle
- Reactivity
- RSA Security
- SAP
- SmartTrust
- Sun Microsystems
- SymLabs
- T-Online
- Telecom Italia
- Telefonica Móviles
- Trusted Network Technologies
- UT Systems
- VeriSign
- Vodafone
- Wave
How We Can Build Trust

- The biggest concern of the principal/patient/customer is **privacy**
- Privacy does not mean that “nobody knows nothing about me”
- It is about managing the faith of the principal/patient/customer by adhering to the agreed scope and holding the information in trust
- Customers are afraid of “Purpose Creep”
- What could an architecture for privacy and trust management look like?
Architecture for Trust Management

Definitions

A combination of business and technology practices which define how a relationship is conducted and services are performed.

A set of rules governing decisions about what the user can do: access to information, services or resources.

Assertion of validity of a set of credentials. Credentials express a person’s identity. “A Yes/No answer”

Basic set of information that creates a “unique” entity (a name with a corresponding set of attributes)
1. User, customer, device “facts”, e.g., name, address, ID, DNA, keys; credentials, certificates that were issued e.g. by a Certification authority.

2. Log on with a UID/PW, token, certificate, biometrics etc. A process that demands the prove that the person presenting them is indeed the person to which credentials were originally issued. accept or reject.

3. Determination of access rights to systems, applications and information: Match credentials against profiles, ACLs, policy.

4. Business practices to manage risk, enforce security/privacy, provide auditability. User, customer preferences, history, personalized services.

Architecture for Trust Management

Digitally Speaking . . .
How People Will Trust Policies

- Policy and its audit have to be guaranteed and certified by an approved public or private independent organization, e.g.:
  - Federal or State data protection agency
  - TÜV (private institution)
  - Audit firm
  - Chamber of Commerce
  - Postal Service or other basic service provider, . . .

- This can be achieved with defined processes and responsibilities similar to ISO 9000

⚠️ Trust is based on policies and the audit of those -- not just on security
Liberty's Structure Promotes Privacy and Security

- Federated structure means no single centralized data storage that would be vulnerable to attack.
- End user has more control of data because permissions travel with data, guiding its use.
- No global identifier--model protects against unauthorized data sharing.
How it Happens

Circle of Trust – organizations and individuals

- Business relationships based on Liberty architecture & operational agreements
- Enables patients, physicians and healthcare organizations to safely share information in a secure and apparently seamless environment

Without violating privacy
The Liberty Advantage

• Wide-spread adoption
  ♠ ≤1 billion identities under Liberty protocols
  ♠ Multiple vendor competition
  ♠ Freedom of choice

• Convergence with other standards
  ♠ e.g., SAML2.0, Shibboleth

• Federated authentication model
  ♠ No central point of failure

• Built on standards
  ♠ Works with existing legacy systems and future development plans

• Privacy & security best practices
  ♠ Create trust for all participants

• Conformance testing & certification
  ♠ Provides for multi-product interoperability
Benefits Of Liberty Standards

• Better information sharing among patient, physician, health insurance, pharmacy
  ♣ Leads to better patient outcomes
  ♣ Information is timely and coordinated

• Easier for doctor to use electronic systems
  ♣ No re-authentication required

• More secure for patient
  ♣ Personal health information shared in controlled manner

• Overall, better service to patient
Liberty’s Global Membership

• ~ 150 diverse member companies and organizations representing leaders in IT, mobility, government, service provision, system integration and finance

• Management Board and Sponsor members include:
Accomplishments

• *The* de-facto standard for Identity Federation foundation and Web Services
• Over 1 billion federation-enabled touch-points
• Numerous case studies of successful deployments – annual IDDY awards
• Global membership representing: enterprise deployers, vendors, governments, and non-profit organization
• Published Business and Policy guidelines for best practices in legal, privacy, and business deployments
• World-recognized “Liberty Interoperable” test and certification program.
Liberty Directions

• Educate the market
• Addressing Identity Management needs for a Web 2.0 Environment – including:
  ♦ Full range of Identity Management use-case scenarios – individual to enterprise
  ♦ Anonymous-to-strongly authenticated credential standards and privacy policies
  ♦ Worldwide privacy and government liaison
  ♦ Web-scalability – smallest-to-largest systems
  ♦ Open and heterogeneous solution requirements
  ♦ Rich IdM client functionality for flexible deployments
• Help drive adoption
Need to Bring Together Disparate Identity Efforts

- New identity-related technologies are entering the market
- The development of generic web services standards has lagged behind identity web services standards
- Participation in open dialog between leaders followed “silo” development
- Despite recent convergence trends, only Liberty technologies have a certification program
Through an Open Approach

- Drive interoperability throughout the Internet Identity Layer
- Open the doors to collaboration
  - Open up meetings
  - Open up public forums & lists
  - Grow liaison relationships with new communities
  - Publish a huge inventory of previously confidential material
- The Concordia Program™
  - A public call for interop use cases for heterogeneous environments
  - Expand certification program to meet the requirements
Concordia’s Overarching Goal & Value

• Drive development of a ubiquitous, interoperable, privacy-respecting layer for identity
  ♦ Helps drive deployment costs down
  ♦ Assures implementers and deployers better success, greater productivity
  ♦ Leads to more commercial products and open source offerings=healthy market
  ♦ Opportunity for better realization of new service offerings

• Assure interoperability across this layer
  ♦ Deliver confidence to implementers and deployers in implementing today, successful interoperability tomorrow

• Open development process assures strong, cross-sector, cross-geography participation
If we don’t act …

- Loss of privacy
- Compliance regulations
- Unifying disparate models
- Lack of interoperability
- Integrating with legacy systems

...all of which can be mitigated by

- Open technology standards
- Deployment policy guidance
- Independent 3rd-party certification
Liberty delivers solutions to real problems

By …
- Listening to the Market
- Collaborating with other relevant groups
- Documenting the requirements
- Developing specifications and guidelines to meet the needs
- Certify the products
- Continuous evolution and improvement
A sampling of vendor adoption

![Vendor Logos]

**SAML 2.0**
(test procedure v2.0)

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A sampling of deployment case studies

Panel Q and A - Moderator

Deploying Liberty Federation

T-Online (slide 4 from PDF attached)

Identity Management solution for the online mass market.
"Netzzeit" - Enabling services for simplified Internet usage - more than just Single Login/SignOn.

Easy and secure filling of user forms

SSO for a central service platform

Orange provides a technical framework:
- Content adaptation
- Mobile & web portal
- Access to Orange enablers (IMS, MMS, location, etc.)
- Billing integration

Orange provides some branded services:
- Communication services
- Business services
Exciting Current Activities

- openLiberty.org
- Concordia Forum
- Identity Governance Framework – MRD creation
- Advanced Client technical specification enhancements
- IDDY Awards – second year
- Education & workshops
- Membership Agreement changes
- Open mail lists
- Public SIGs
- New Fee Structure
- New Membership Benefits structure
Call to Action: Join Us!

Liberty brings value to our Healthcare members:

- Federated Identity Management provides “plumbing” standards that:
  - Support key elements of interoperability
  - Make it much easier for patients, providers and payers to share results of authentication
  - Enable easier, faster compliance with government regulations
- Conformance and compliance testing that assure base levels of interoperability and functionality

Become Engaged:
See the specifications and white papers at:
www.projectliberty.org
Become a member!

See also: User centric identity demo at: http://blogs.sun.com/hubertsblog

For more information:
https://www.projectliberty.org/resources/featured_verticals_health.php
Recommendation and Conclusion

- National and international interoperability with trust and privacy is key
- Build on existing standards
- Embrace Federated Identity for role based access and to protect patient's information
- Federated Identity scales much better than hierarchical approaches
- The Liberty Alliance is the ideal boiler plate to build the foundation for an interoperable national health network. Join the Alliance, talk to Sun (founder of the Alliance)