Kantara Initiative
NSTIC Pilots in Motion

30 January 2013

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The Resilient Network Systems NSTIC Pilots
• Overview and Challenges

Defining a Trust Network
• What is a Trust Network
• What does a Trust Network offer
• How does a Trust Network work

NSTIC Pilot Status and Demo

Trust Framework Activity Review

Commercialization Efforts
• Incremental Solutions
• Framework for Implementation

Q&A
Resilient Network Systems NSTIC Pilots

Purpose:
Deliver national scale, secure, privacy-enhancing, on-demand, authentication and compliant authorization for online transactions and access control in Healthcare (HIPPA / HITECH) and Education (FERPA / COPPA)

Participants in Patient Centered Coordination of Care (PCC) Pilot

Participants in Zero-knowledge Identity and Privacy Protection Service (ZIPPS) Pilot
Challenges in Education and Healthcare Information Exchange

Roadblocks in Education:

• Centralized databases and services present both real and perceived security and privacy risks

• Regulations (e.g. FERPA and COPPA) require an established Trust Framework

• Centralized, disparate identity stores and applications hinder access to online media and learning

• Fragmentation among School Information Systems and Educational Support Systems, as well as low local IT budgets, inhibit ecosystems’ scalability and national reach

Roadblocks to HIE for Coordinated Care:

• Reliance on current, identity-based solutions impose high costs, inhibit adoption and prevent scale

• Assurance exists only between integrated organizations, known users, and resources

• Systems have inconsistent roles, permission, identities, resources and administration

• Privacy challenges and regulatory compliance pose significant risk for Health IT adopters
A Trust Network is a neutral, peer-to-peer software platform for automating context-aware decisions.

Who am I working with?

What can they do or have?

What should be included to make these decisions?

A Trust Network evaluates and enforces the criteria for **trusted interactions** between users, relying parties, attribute providers, and other online services.

Trust Network enables

- Syndicated Data, Services, Applications
- Secure and Resilient verification of facts
- Privacy-Enhanced Discovery and Access
- Automated Compliance and Accounting
- Administrative and End-User Convenience
How Does a Trust Network Work

Access Server
Defines and enforces policies to publish data, applications and services

Trust Broker
Evaluates policies, routes and verifies requests with trust services

Privacy Services
Transforms data, policies and application logic into opaque tokens

Identity Broker
Correlates, verifies and authenticates identities of users and records
Current Pilot Operations and Outcomes

**Healthcare Pilot**

- HIPAA-compliant eReferrals between Doctors and Staff, across HIE and State boundaries
  - Gorge Health Connect, OR
  - San Diego Health Connect, CA
- 4 Sources for Attribute Verification
  - AMA and LexisNexis - National
  - GHC and SD Health Connect
- Privacy-enhanced multi-factor authentication: Phone, KBA, Email
- Trust Framework developed with collaborative working group
  - National eHealth Collaborative leading 24 participants

**Education Pilot**

- K-12 education software and services providers utilizing Trust Network API’s to provide enhanced student and parent access
  - 3 CA School Districts to pilot in Q1 2014 - Riverside, Pajaro Valley and King City School Districts
  - National Scale SIS and Attribute Verification Sources – SunGard and Clever
- Anywhere access to online training for authenticated / authorized employees (no VPN)
  - Demonstration testing by Accenture employees, accessing Knowledge Factor online learning programs
HIPAA-compliant eReferrals between Physicians and Staff at disparate medical organizations, on different Health IT platforms, using a secure, Direct Messaging Gateway with Trust Network privacy protection.

**Actors**

<table>
<thead>
<tr>
<th>State</th>
<th>HIE</th>
<th>Medical Org</th>
<th>Physicians</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oregon</td>
<td>Gorge Health Connect</td>
<td>One Community Health Clinic</td>
<td>Dr. Art Ticknor and Staff</td>
<td>Primary Care Physician</td>
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<tr>
<td>California</td>
<td>San Diego Health Connect</td>
<td>UC San Diego Medical Center</td>
<td>Dr. James Killeen and Staff</td>
<td>Consulting Cardiologist</td>
</tr>
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</table>

**Services**

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Services</th>
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<tbody>
<tr>
<td>1 Sender access to Direct Message application</td>
<td>Medicity iNexx or MirthMail</td>
</tr>
<tr>
<td>2 Receiver access to standard email application</td>
<td>Gmail, MS Exchange, etc.</td>
</tr>
<tr>
<td>3 Verification of Physician status and Phone Authentication</td>
<td>AMA Physician Verification Srv. + Authentify Phone Authentication Srvc.</td>
</tr>
<tr>
<td>4 Verification of Staff status and KBA Authentication</td>
<td>Local staff directory + LexisNexis Instant Authenticate</td>
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</table>
Special thanks to the Physicians, Staff and IT Professionals at all of the partner organizations participating in the NSTIC Pilot and Trust Network Ecosystem.

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Pilot Ecosystem Trust Frameworks

- Trust Frameworks in development for Healthcare and Education ecosystems
- Leveraging working groups, as well as pilot experiences

Modular Assessment Criteria for Trust Network

- Kantara Initiative and partners are mapping current criteria to ecosystem model
- Level of Assurance equivalents to assessment, via dynamic implementation of policy enforcement at run-time
Trust Framework - Pilot Ecosystem Development

Healthcare Pilot

- Trust Framework developed with collaborative working group of 24 pilot participants and independent healthcare and privacy experts

- 11 working group sessions coordinated by the National eHealth Collaborative (NeHC)
  - Refined policy taxonomy and healthcare/privacy regulations
  - Drafted and reviewed Trust Framework document

- Trust Framework document for pilot is complete, and in operation by pilot participants

- Expansion planned for post-pilot commercialization of healthcare ecosystem

Education Pilot

- Trust Framework in development
- Leveraging experiences from Healthcare TF working group
Trust Network Syndication Architecture

Syndicated application

Syndication through the Trust Network enables the combination of web-services and functions into on-demand, context-aware, applications

Syndicated Functions

| Verify Attributes | Account for Context | Access Resources |

Trust Network Components

Syndication components

Trust Network API’s

| Identity authorities | Compliance authorities | Policy authorities | Analytic Services | Data Services |

Trust Network Infrastructure

| Identity Broker Services | Trust Brokers / Trust Services | Access Servers |
| Privacy Services | Audit / Metering Services |

Network Services and Functions

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Healthcare Pilot Overview

Syndicated Solution

- National scale, HIPAA compliant, privacy preserving, convenient, eReferral and Health Information Exchange

Syndicated Functions

- Verify Attributes
- Account for Context
- Access Resources

Syndication components

- Trust Network API’s
  - LexisNexis
  - Gorge HIE
  - Mirth Connect
  - Optum
  - Authen5fy
  - SD Beacon HIE
  - AMA and NeHC
  - Medicity

Trust Network Infrastructure

- Identity Broker Services
- Trust Brokers / Trust Services
- Access Servers
- Privacy Services
- Audit / Metering Services
- Privacy Services
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- Audit / Metering Services
Resilient Network Systems Challenge
How to bridge the gap between “Core Services” and developing Trust Ecosystems in various markets, and obtaining a viral network effect?
Commercialization of the Pilot Ecosystems & Solutions

Syndicated Solution
National scale, HIPAA compliant, privacy preserving, convenient, eReferral and Health Information Exchange

Trust Ecosystem Incremental Solutions – What are their attributes?

Solution A
Solution B
Solution C

Core Services
Access Server
Trust Broker
Identity Broker
Zero-Knowledge Broker
Logging & Metering
Trust History
Trust Vault
Opaque Token Service
General Attributes of Incremental Solutions

- Solutions build off of existing implementations for NSTIC Pilots
- Provide business value in and of themselves
  - solving a specific business problem
- Serve as on-ramps to broader Trust Ecosystem adoption
  - each developed with ability to integrate in larger Trust Ecosystem
- Meet requirements for Privacy, Security, and Context needed to solve business problems
- Scalable and sustainable with modest additional investment
- Offered via low-friction, convenient (e.g. Software-as-a-Service) models
Define the Users:

- What organizations are involved and interconnected
- Who are the users
- How are users identified
- What roles and relationships are used now and required

Define the Policy:

- Describe security constraints
- Describe the context required for Trust
- Define privacy requirements and sensitive data
- Identify attributes and equivalents

Define the Resources:

- Identify the Resources (web applications, API, etc.) to be protected
- Identify and define Trust Authorities:
  - Identity Sources
  - Attribute Sources
  - Context Authorities
Learn More

Resilient Networks Systems NSTIC Pilots Website:

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