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THE INFORMATION TRUST EXCHANGE

Trust, identity, personalization,
content and user sharing for the news industry

PRELIMINARY DESCRIPTION OF AN
THE INFORMATION TRUST EXCHANGE
PROTOTYPE PILOT

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The Donald W. Reynolds Journalism Institute (RJI) is researching the launch of a public-benefit, non-profit consortium for managing trust, identity, privacy and information commerce on the Internet.   This DRAFT document describes elements of a preferred elements of a pilot / prototype. Comments on this document should be emailed to
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PURPOSE

For the benefit of the news industry and the public, RJI is fostering a prototype for a networked system of news/information sales, by item or subscription, that is convenient for the public and allows news organizations to maintain and grow their account and trust relationship with users.

Goals of the prototype pilot:

(a) Have a platform for academic research on the willingness of individuals to purchase news content when it is convenient and economical to do so; and,

(b) Faciliate sharing of details of the experiment experience among editors, users and the industry and public through a web service, LifeStream, created for the

purpose.

(c) Demonstrate that core enabling technology exists and works for the sharing of users and content with one-ID and one password across multiple, independent websites, where privacy and identity are respected and managed for the user's benefit.

SCOPE

The Project's overall scope is to create a version of multisite registration, authentication and event-logging service which will be sufficient to prove the concept of a web/mobile/tablet user being able to access and purchase resources from multiple independent websites ("relying parties"), using a single ID/password ("credential") issued and maintained by a home-base publisher, typically a newspaper (the "identity provider"), and have multiple such events be aggregated and settled to a single user account on a periodic basis. The scope will include research about the operation of the service, and outreach about the experiment to editors, the news industry and the public.

BENCHMARKS

The public, production test of the service will meet or exceed the following:

● At least four different content web sites participate.
● At least three different service/identity providers participate.
● Auto-generated reports showing discrete transactions by individual clients.
● Commercial connections to banking and credit-card networks.
● The ability to settle accounts among participants as needed.

POSSIBLE CONTENT / CLIENTS

The proposed clients of the multi-site user/content exchange service, and content sources, will be print or online/tablet subscribers to one or more of the following newspapers or publishers (all of whom are existing Clickshare clients):

1. Selected clients of Clickshare Service Corp., generally in New England
2. The Public Media Platform
3. The Columbia Missourian
4. The Public Insight Network service at the Salt Lake Tribune
5. Members of the Institute for Nonprofit News (INN)
6. Possibly a member or members of The Media Consortium

USER INTERFACE

The user interface for each participating publisher will be at the sole discretion of that publisher.

DESIRED OUTCOME

At the end of the trial, we expect to have demonstrated the contours of the opportunity for a new user experience for news. One that allows convenient access to trustworthy information from multiple sources from a single home-base relationship and account. Creation of the protocols, and opt-in business rules to support this experience might then be carried forward by some sort of news/information industry collaboration. This could be an important privacy and choice enhancement over what's available on the web today:

    a. Services such as PayPal or Facebook Connect or iTunes must register and have credit/personal information for all users.

    b. Each such system is "siloed" – a user of one can't access resources at another.

    c. The consumer thus must chose one (or many) incompatible identity/commerce services rather than having an array of choices of competing service providers who all operate with common technical protocols and rules.

    d. Aggregation and settlement of charges is not now possible across multiple content services. This means it is impossible to create a one-price packaged service of content from multiple content sources (the value that the print newspaper used to provide elegantly).

OPTIMUM (DESIRED) TEST ELEMENTS

1. A federated authentication service which allows access to resources on multiple services not otherwise connected (except by the federated service) using credentials issued by a single service provider among a plurality of service providers within the federated service.

2. An access-logging service which records access to individual resources on widely distributed hosts within a federated network, including records of the value of the resource accessed, and a unique identity of who accessed them, such that individual records may be sorted by time, value, source or user for periodic settlement to financial, advertising or other batch networks.

3. A user-management service which creates and stores on a distributed basis attributes of individual users, including demographic values, information preferences and subscription or access-right authorities; such that the attributes may be readily viewed, accepted, rejected or possibly changed by the user.

4. A profile-exchange service which enables access to and network sharing of user attributes for the purpose of determining types of services and their value to be provided to a user; and which is capable of varying services based upon such parameters as subscription-authorization levels and credit thresholds.

5. A variable pricing service which enables the quering of a user during the process of requesting a resource across the network, allowing the user, or his or her agent, to respond to a price offer in real time based on such factors as subscription authorization, pre-established pricing preferences or credit availability.

User experience

This Q-and-A document describes the user experience to be operated as a proof-of-concept for networked purchasing of topical and local news content in a shared-user network.

After the narrative Q-and-A there follows an Appendix A which provides a chart and more technical description of what is going on.

What will be demonstrated?

Working in collaboration with RJI, technical partners and pilot publishers will deploy a service which allows a user from any one of several of its existing customer websites (each with their own subscription databases), to access "protected content" on web, tablet or mobile devices of other customers' websites.

Why does this matter?

Information is increasingly being consumed in bits and pieces from multiple independent sources by users. This happens because aggregators and their friends refer them to it that way. It also happens because users tend to have a habit of "browsing" the web to discover new experiences and information. The more traditional usage pattern – going to a single home base (like a newspaper front page) and relying upon that sole starting point and only its proprietary, packaged content – is only one part of the common use case.

As a result, publishers who want to maintain a deep relationship with users must learn how to help to find information they need anywhere on the web – information without walls. RJI wants to test the hypothesis that a network of websites can be affiliated only by a thin protocol of common authentication and tracking of their shared users – and present a compelling, trustworthy user experience.

In this phase, it is unlikely that the number of participating publishers will reach a critical mass sufficient to warrant users paying a premium amount for the network services. The objective is to merely test the technology of authentication, logging and settlement, and the user interface to it.

How will public users find out about this test?

All of the users involved will be registered users at their "home-base" publisher. When they "log-in" at their home base they will be directed to a version of the LifeStream news personalization service – a customer home page just for them.

What are some of the offers?

- ■ Limited day passes to digital editions
- ■ Day passes to websites or counted access to the website articles
- ■ Special resources not available to the general public

■ PENDING – A test opportunity to earn loyalty points

Is there money involved?

Not for the consumer at this stage. The system enables the tracking of access to resources at participating websites for individual charges, or as part of subscription bundles. We will demonstrate the reporting of access and charge records among and between content providers. However in this test, *no consumer end users will be charged anything other than what they might already be paying at their host "home base" publisher website.*

What will users be told about payment?

Users will be told by their "home based" publisher that they are receiving free access to special, premium content not generally available on the open web. A part of the RJI research will be to survey these users for their attitudes about the use *and value* of the resources they are enjoying access to.

One way to think of what is enabled is an "easy pass" to content at multiple websites. In this proof-of-concept experiment all network resources will be free to consumers as an added benefit offered by their home-base service.

What happens when the customer arrives on a remote site?

The system recognizes that this customer is a network customer and puts up an information page promoting the free access to other-wise restricted resources. Depending how users react in the test, the system may direct users to internal resource links on participating websites without any intermediate explanatory page. This ability to access resources on remote websites, with network login credentials issued by only by any one of participating home-base sites, (rather than a central registration service) is unique to the Clickshare environment.

What happens if a customer arrives first at a remote site?

At the point where they hit the remote site's login page, they will see a Clickshare network logo and be invited by that site to login with their home-base login. For details of how this will work, see the Appendix.

Why should publishers want to participate in this RJI research?

For the benefit of the news industry, RJI would like to develop a "proof of concept" for a networked system of news/information sales, by item or subscription, that is convenient for clients and allows news organizations to maintain and grow their account and trust relationship with clients. For more than 15 years, commentators have called for creation of a one-account, one-ID, one-bill access service to information resources. AOL once offered this

inside a proprietary "silo." Sites like Facebook and Google+ are now doing so within web-facing silos.

The idea of the RJI-ITE demonstration is to show a hybrid "open silos" service where a plurarily of publishers and information service providers can maintain preferred relationships with their subscribers but allow those subscribers to access premium resources of other services.

The point of the ITE technology specification is to describe and test the efficient authentication of users across multiple sites and the aggregation of reports about their access to resources.

So why is it necessary to "track" access and what do you mean by that?

Compare this approach to the wired and wireless phone networks. Calls are made – and tracked – across multiple carriers. These carriers use the call-detail reports in background to settle their financial exchange, to cover the cost of their network services. So that's one purpose – to allow an efficient clearing house for content access and purchasing records.

But there's another service possible – optional, opt-in sharing of demographic and preference information among users and sites. For example, a user's age or geo-location or content preferences could be passed – with the user's permission – across the network in a uniform way. This could allow for:

- More customized editorial services
- Advertising targeted to the intentions and location of the user
- The ability to make offers – and even pay consumers for their attention

Will this advertising-oriented tracking be part of the trial?

No. While the technology to be tested would enable such services, we do not expect to test them at this stage.

Why is RJI doing this?

It is in keeping with RJI's mission to test with a group of cooperating publishers a potential way to sustain valuable journalism-related service. In addition this trial will allow RJI to:

(d) Have a platform for early stage academic research on the willingness of individuals to purchase news content when it is convenient and economical to do so; and,

(e) Facilitate the creation of the non-profit Information Trust Exchange by showing that suitable core enabling technology exists and works.

What do you hope to accomplish?

At the end of the trial, we expect to have demonstrated the contours of the opportunity for a new user experience for news. One that allows convenient, personalized access to trustworthy information from multiple sources from a single home-base relationship and account. A service that allows the user's "home-base" publisher to begin a one-to-one relationship which can optionally protect user privacy while offering access to valuable content and opt-in commercial offers.

The ITE Network Protocol

This document describes in semi-technical terms the flow of user requests and data among the service points within a network proposed for the Information Trust Exchange pilot. The key points explored in this technical description:

1. The place where a customer/user has their "home base" – where their demographic and preference information is stored or managed – is independent of where they go to access information. There can be multiple "home bases" within the network (rather than a single one such as only Facebook or only Google).

2. In order to reach resources at independent content services within the network, the customer/user has to be "authenticated" (or "logged in.") This log-in process, from the user's point of view, occurs at whatever site within the network they visit to access information. But in reality the login prompts are linked only to their "home base" service, so only their "home base" knows who they are with any detail. This is an important privacy and choice enhancement over what's available on the web today:

    a. Services such as PayPal or Facebook Connect or iTunes must register and have credit/personal information for all users.
    b. Each such system is "siloed" – a user of one can't access resources at another.
    c. The consumer thus must chose one (or many) incompatible identity/commerce services rather than having an array of choices of competing service providers who all operate with common technical protocols and rules.
    d. Aggregation and settlement of charges is not now possible across multiple content services. This means it is impossible to create a one-price packaged service of content from multiple content sources (the value that the print newspaper used to provide elegantly).

3. It is a goal of the ITE pilot to demonstrate that these limitations of the current Internet can be overcome.

4. The description uses as an example two content services – *Automotive News* and Crain's Detroit Business – in common ownership but on different service platforms. In practice, they interaction could be among information services of completely indepent providers – such as the Concord, N.H., Monitor and Crain's, or the Rutland Herald and Nashua Telegraph.

The next page begins with a diagram and description, followed by the process flow summary.

Key observation

It is important to note that the content servers have no knowledge of the authentication occurring behind the scenes as part of the ITE network. Each content server defers authentication to its associated registrar. The registrar either authenticates the customer locally, or uses the ITE network to handle remote authentication. This model avoids any requirement to add software to the myriad content servers in use by each publication.
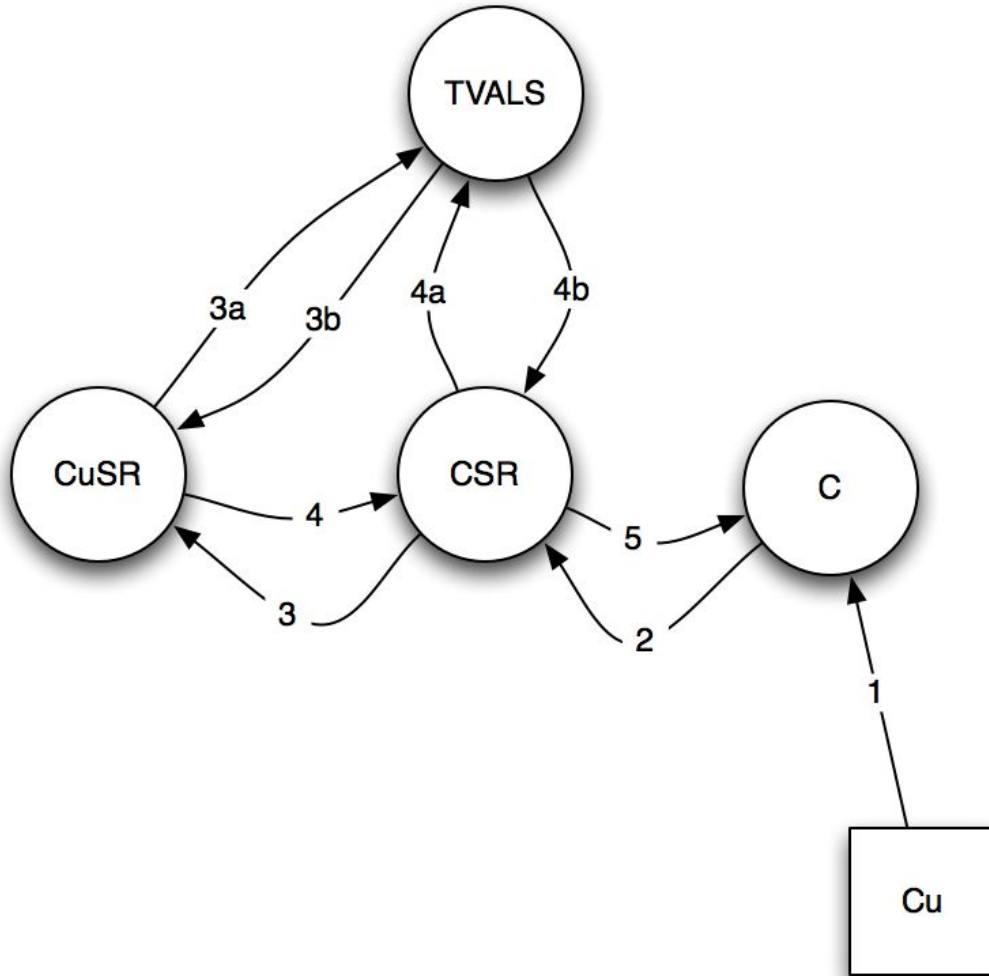
Diagram Key:

TVALS: The token validation and logging server. The TVALS is used to create and validate tokens, and log the use of tokens. Tokens are used to confirm customer access.

C: Content. Content resides on client content servers

Cu: Customer. The customer accessing the ITE-sanctioned network.

CSR: Content Server's Registrar. This is the registrar used to handle logins, authentications, subscription management and access control for a given content server.

CuSR: The customer's registrar. This is the registrar for the customer's "home base" content server.

Diagram Notes:

The ITE network is a three-tiered system. The top tier, TVALS, is modeled after technology design developed by Clickshare Service Corp. The second tier comprises client-specific servers, and the third tier is comprised of the customers' access devices (browsers, tablets, smartphone apps, etc).

Background:

If working with Clickshare, the ITE network operates as an upstream extension of the Clickshare system that is currently in place for 12 clients with more than three million registered users.   Currently, the Clickshare system works as follows:

Each client has one registrar and one or more content servers. The registrar maintains a customer database and handles subscription management, access control, and authentication for the content servers.

Purpose:

The ITE network allows customers registered with one of the registrars to use their existing username and password to access content on content servers associated with other registrars. Customers do not need to create a login at a centralized location, and never need to authenticate anywhere except at their "home base" registrar. In order to access content on servers other than their home base, customers only need to know their home base registrar and the username and password they use at that registrar. All customers with accounts with participating content server registrars can take advantage of this service.

Flow of Control:

In the extended Clickshare Network model, flow of control would be implemented as follows:

- The customer requests content from a content server associated with a registrar (within the Clickshare network) other than their home base.

- The content server sends a request to its registrar, asking if the customer has access.

- If the customer has not yet logged in, or is otherwise unknown to the content server's registrar, the registrar displays a login page. To support the network, the login page will extend to include a mechanism to allow the customer to select a home base other than the current registrar. If a home base other than the current registrar is selected, the customer is redirected to the selected home registrar, where they are asked to log in.

  o The home registrar authenticates the customer and requests a new token from TVALS.
  o TVALS returns the token to the customer's home base registrar.

- The customer's home base registrar performs a redirect back to the original content server's registrar, appended with the token from TVALS.

  o The content server's registrar sends a token validation request to their TVALS.
  o TVALS validates the token provided and returns a response to the content server.

- The content server's registrar sends confirmation back to the content server that the customer has been validated and should be provided with access.

Example (from the customer's viewpoint)

Pat is a customer registered at a news organization the ITE network. His home base is Crain's Detroit Business. Interested in Automotive News, Pat visits the Automotive News index page. Pat sees an interesting article, and clicks on it. Since Pat has not yet authenticated, Pat is brought to the Automotive News login page. This page has a few options:

> "If you are an Automotive News customer, log in here:"
> "Otherwise, you can select your home base from the list below."

Since Pat is not an Automotive News customer, Pat selects the Crain's Detroit Business home base from the list, and clicks "submit". Pat is then taken to the Crain's Detroit Business login page, which asks for a username and password. Pat enters this information and is redirected back to Automotive News, where a confirmation message is displayed, explaining the terms of access. Pat is then redirected back to the content.

Linking To Other Content Servers

A content server associated with one registrar might wish to show customers links to stories or pages on content servers associated with other registrars. A simple link is sufficient. However, a better approach is to pass along information about the customer's home base registrar. With this information, the registrar associated with the foreign content server can offer to let the customer log in using their home base without having to ask the customer to choose their home base from a list of registrars.

Since the content server does not know about the ITE Network, it cannot add this information directly. The content server's registrar does have this information, and can add the information to a redirect to the foreign content site. The link on the content server would direct the browser to its registrar. The registrar would add either its own ID, if the customer is a local customer, or for foreign customers, the ID of the home base the customer previously used to authenticate on this registrar, and redirect the browser to the foreign content server. If the customer is not yet logged in on the local content server's registrar, the registrar simply redirects the browser to the foreign content server without any home base information.