



THE INFORMATION TRUST EXCHANGE

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

Design Statements (working)

This WORKING document assembles a series of aspirational service goals for the ITE within seven categories. Some overlap or are redundant. This document may be used to distill a set of Functional Specifications to be used by: (a) Contracted operators of the ITE network to build from and (b) Member or independent providers to design ITE-compliant services.

WHAT THE ITE DOES

Without encroaching on individual franchises, an Information Trust Exchange (ITE) serves as an information-industry collaborative connecting news enterprises and news consumers. It defines and governs a layer of network protocols for sharing user authentication, profile sharing, copyright payments and billing. Similar to the bank / credit-card system, the network is overseen by a non-governmental authority on behalf of private -- and competing -- parties. The ITE makes rules for the competitive exchange of both content and users' identity information.

A consumer user should be able to have one account, one ID and one bill with which to acquire a wide variety of content from multiple, otherwise independent sources. A content provider should be able to establish and vary pricing for discrete information objects in real time based on the the user's identity, relationships and use. A service provider should be able to make money by purchasing content at lower wholesale prices and reselling it at higher retailer prices to its users, managing the spread as a business exercise. An advertiser should be able to precisely reach relevant consumers with a personal message, and should be able to reward the user's service provider -- and even the user directly -- for the privilege of delivering the message.

WHAT THESE DESIGN STATEMENTS ADDRESS:

- Enrollment/registration processes that screen (and protect) users
- Creation of secure credential with user-set privacy levels
- Federated, single sign-on capability for participating sites
- User-created and updatable profiles of preferences, interests and demographics
- Certification of trusted providers and participants
- Ability to match dynamically-specified buyer interests with customized seller offerings
- Transparent payment capability with user-specified ways to pay
- User-defined rewards that can be collected among user-specified provider participants
- Visa-like payment engine/network/capability to slice-and-dice payments, establish and enforce rules, handle problems, service customers, provide reports, administer licenses/IP, etc.

THE STATEMENTS:

The Information Trust Exchange establishes and maintains voluntary standards for sharing user information and commerce across TCP-IP networks. The elements of the ITE are:

1. Legal/corporate form/governance

- Not-for-profit association, staggered board, (say, 27 seats allocated by 7 types); founding members (foundations); publishing members; technology members; public members. It can own, and partner with for-profit operating entities.
- See this description: <http://www.newshare.com/wiki/index.php/Blueprint-form>
- One group of ITE stakeholders: Technology and business service providers who operate ITE-sanction services under contract with the ITE, for which they pay some relative diminimus transaction- or volume-based license fee. These might include operators of the authentication and logging services, and providers of ancillary services that must interoperate with all auth and logging services. These might include financial-service firms which do settlement on records providing by the auth/logging service, as well as entities who act as authorized agents of either publishers or end-user service providers to perform business-case services on network data.
- Another group of ITE stakeholders: Publishers/information service providers, and billing/subscription end-user service providers who wish to be authenticated across

the entire ITE service network. Most of their cost would be payments to the tech and business-service providers of their choice (above) at free-market prices. But they would also be asked to pay an "interchange fee" based on transaction volume to the ITE, again solely sufficient to fund the ITE's governance and any necessary R&D. What they get for the interchange fee is a unique, ITE-wide identifier and the assurance they and their users will be "authenticated" globally so long as they play by the ITE's rules.

- ITE would define and govern a layer of network protocols for sharing user authentication, profile sharing, copyright payments and billing. Similar to the bank / credit-card system, the network would be overseen by a non-governmental authority on behalf of private -- and competing -- parties. The ITE makes rules for the competitive exchange of both content and users' identity information.
- It could raise money through grants, gifts, memberships and loans, and then contract with or acquire entities providing information-commerce operating services, realizing program-related income. The entity must be agile and unencumbered in negotiating and implementing relationships and its fiduciary obligations must be solely to advance the interests of its members, and the public.
- It establishes consensus on minimum necessary open protocols to transfer information about usage and charges across a network (either the public Internet or some controlled subset).
- It facilitates emergence of an open user- sharing and payment protocol – either by developing the standard, or endorsing an open standard developed by an incumbent willing to share it.
- The Information Trust Exchange, whether chartered as a non-profit association or a co-operative, would not compete with its members in news or advertising, because it is proposed not to be a direct operator of anything – rather, it will develop standards, protocols and business rules, and license operation of authentication and logging services – data exchanges – by one or more private, for-profit operators.
- The ITE may exercise an ultimate sanction of removing an infovalet identity service provider, or a relying party – the content provider – from the network if they are not meeting the requirements of the system. Such non-regulatory sanctions is one of the reasons why the governance and ownership of the service is so critical. The cutoff decision has to be the result of well-documented interchange rules (consider Visa as a model in this regard), and the entity making the decision has to have no competitive business interest one way or the other but rather only an interest in the fair administration of the service and due regard for evolving identity and privacy rights of end users. Hence, the need for a non-governmental and non-investor-owned entity with a mission to efficiently oversee and operate a service and not profit from it. Profit is for the publishers and service providers who use the service
- The ITE defines an architecture, creates protocols and interfaces, and accompanying business rules. Then contractually partners with technology companies prepared to build ITE- compliant networks that share user data, content and payments.
- The ITE allows and enables commercial entities to make their own business decisions about how much to spend to enable and connect to the network. They can't do that now is because there is no interconnect -- a private, yet public-benefit, system of unified policy, governance and sanctions. There is no non-profit exchange facilitator which, like the Internet itself, transcends any single government or enterprise.

2. Technology

GENERAL FEATURES OF THE ITE NETWORK

- A set of technical protocols and business rules which govern the transfer of specific information across the public TCP/IP network (Internet) among and between (a) diverse point-of-service (POS) devices, such as laptops, smartphones and tablets and (b) network members, including content providers (CP) and end-user service providers (USP).
- A special-purpose network that securely transfers information among and between network members, including content providers, end-user service providers, network operators and network service providers.
- Standardized transfer of a unique, non-repudiable user identifier, assigned by a USP, in real time, when a user makes an HTTP request to a CP across a TCP/IP public network, for a unique resource.
- Support of a real-time query and reply to confirm desire of the end user to acquire the resource based upon its cost, value or other attributes.
- Real-time authentication back to their USP of a user's credentials and rights upon making a resource request of a CP and prior to serving the request, whether the request is to the CP's servers or to the "Network Content Repository" (see below).
- Logging of services provided by unique user, resource provided, and any negotiated and confirmed value of the event. The event could involve serving news content, or sponsored content ("advertising") with the value exchange recorded in either direction.
- Enabling services that store and index news and other content uploaded by members into a Network Content Repository.
- The network services support third-party programs that store and index news content, distribute messages about the content to the members, control access to the content, allow for news search, account for each individual access, account for the due-from and due-to payments cycle and act as the intermediary to an all-new internet payments system.
- Access identifiers, subscription numbers, financial transaction numbers, member addresses and identifiers are all new and have no equivalent in today's internet environment, with one goal the rendering any sort of unauthorized tracking unlikely

SPECIFIC ROLES

- Every click across the network that involves an exchange of value (a payment for an article or a reward for viewing or doing something) is logged to an authentication and logging service, which is seen by the system participants as a "central shared service" although in network practice it may be distributed and hierarchial as with DNS.
- This shared-resource logging service accepts reports of all clicks (that involve value exchange) in background, sorting and aggregating them, then settling aggregated value exchange.
- Each user service provider is entitled to receiving from the logging service aggregate clickstream data about their users which it can use, subject to TOS with the end user -- auditable and enforceable by the ITE as a condition of system membership.

- Publishers (content providers) do NOT get identifiable information about any user (at least not from this system); they just get assurance that the person is authorized to view the resource requested and that, if money is involved, the money is going to be handled and they will get or give what they expect.
- This does not stop publishers from setting their own “cookies” or doing other things to identify users, unless or until the Information Trust Exchange prohibits such behavior as a condition of membership or “cookies” are otherwise regulated.
- The logging service knows the user only by a unique alphanumeric identifier supplied by the user's "home base" at the start of that particular session. As a matter of policy, the logging service shall not sell or provide clickstream data to ANYONE and provides it only to the user's home service provider for their purposes (and for audit purposes to the publishing content provider if requested). The identifier -- to anyone other than the home base itself -- reveals nothing more than the identity of the user's home base to anyone else in the system other than the user's home base account manager.
- A shared-resource authentication service, which may or may not be operated in conjunction with or independent of the logging service, facilitates single-sign-on to ITE-member services. The authentication service accepts user-identity and preference information in a standard format and passes it to publishers and service providers authorized to receive it.
- The logging and settlement service ensures reliable payment or other exchange for advertising and content value. It also facilitates market competition on price, service and terms.

3. Revenue Streams – Consumer direct

- The ITE infrastructure takes care of all the accounting needed to get the payment from the consumer to the original content owner (or the payment from the advertiser to the end-user's service provider) with all of the intermediaries along the way getting their pre-agreed-to cut.
- It also creates a platform for affiliates to respond in a customized, personalized way to information requests, because it makes it possible for the user to offer their preference information when making an information request.
- For publishers, it creates the possibility of subscription networks through background “microaccounting” for cross-site exchanges of value and payment.
- This system as described permits a plurality of subscription packages with pricing as in a free market for digital information – with package or individual resource retail pricing to the consumer set by the service provider who holds the end-user's account, and individual resource pricing at wholesale set by any publisher who wants pricing control over their content.
- Content sold at wholesale and subscriptions sold at retail -- is where the business opportunity lies -- arbitraging the cost of content against the subscription charge.
- At settlement time, the settlement service bundles all the clicks -- sorted by home-base of the users on the one hand and by the vending publisher on the other hand -- and determines an aggregate debit or credit to charge the home base and an aggregated

credit or debit to charge the publishers (note that a "publisher" could be a brand which is paying for a user to view a commercial message). This all is done periodically -- daily, weekly, monthly -- probably weekly in prototype -- across the bank ACH network.

- The home base gets these bundled log reports and is free to sort them or use them as they wish (subject to their terms of service with the end user as to usage and privacy protection or not); in some cases there may be a discrete charge or payment to the end user for a particular access; the home base will use the click-stream reports for demographic, marketing and business-model analysis but the end user would typically be merely be paying a monthly subscription for some class of service, with the option to add purchase of certain out-of-package content pieces on an *a la carte* basis.
- The publisher (or information service provider), also gets bundled log reports of total usage so they can audit their payment or receipts, and the only sorting they are capable of doing is by the source of the end-user (i.e., their service-provider ID). Conceivably they might have methods to associate these anonymized usage reports to specific users, but the ITE would be in the business of making business rules governing this practice and the rules would be enforceable by anything up to the ultimate sanction -- cutting the offending information service provider off the system.

4. Revenue Streams -- Advertising / "advisortising"

- For advertisers, it solves the problem of multiple identities for the same person, without them having to maintain any personally identifiable information or be beholden to one or two technical platform operators who hold a master user account.
- Enables online advertising exchanges to bring their services to the ITE network, working in milliseconds with demand-side and sell-side platforms to match willing advertisers with willing publishers and aggregators to deliver "impressions" to interested consumers. Prices range dramatically, as do the content and form of the advertisements.
- Establish a process for wholesale and retail pricing. The retailer -- your preferred publisher or service provider -- is responsible for billing you and paying for what you buy from his or her store. Then, they go pay the originating publisher -- the wholesaler -- for the items you purchased -- to make up your personalized information bundle. The originating publisher, if it knows something about you, might vary the offer (price and terms). Your home-based publisher, the retailer, might chose to give you some of the items as part of a package, and ask you to pay for other pieces a la carte.

5. Marketing strategy / B-to-B and B-to-C

- The ITE will license for-profit affiliate members who will provide services to seed the network in the publishing space.
- An important design criteria for the protocols -- nothing should stop a participating affiliate or publisher from continuing to operate within their silo. The ITE protocols have to be additive to these businesses -- a way for them to expand from their three-party services into a true four-party trust network.

6. Privacy/demographics/identity

- The ITE protocol would create the opportunity for a new kind of entity which would help consumers manage their personas across a variety of information services – some paid and some that pay, or reward. The success of all kinds of loyalty programs are a proof-of-concept for this kind of information persona management.
- It creates the opportunity for access to lots of information resources with a single ID, password and account. But unlike proprietary services such as iTunes or Facebook Connect, the customer will be able to choose among a plurality of service providers who can compete over financial and privacy terms.
- If a publisher chooses to become a service provider, then they get access to all of the activity of their OWN users across the network, giving them, in effect, "First Party" data vastly broader than they have access to today -- but only for those people they have account relationships with. This provides a hook for accountability as to use of personal data, and a hook that can be audited by the ITE administration if necessary
- ITE rules can define use/ownership/custodianship of personally-identifiable information (PII) and establish protocols for their exchange.
- There may be a plurality of home-base account managers in the service (as there are thousands of home bases in Shibboleth/Internet2), providing end users a high degree of choice regarding business terms, especially as to identity and privacy
- Protocols describe a framework for valuing exchange of personally identifiable information and rules governing its use. (example: [OECD Privacy Principles](#))
- Enable multiple ways to create personalization of content preferences including a mixing and matching between inferred and expressed preferencing.
- It allows the transfer of that personalization information across multiple services and uses, so your persona is not siloed in one place and is able to be shared across the web as much -- or as little -- as you choose.
- The notion of a network with millions of personas – distributed, but shareable with user consent -- could be enabled by an ITE that establishes opt-in rules and protocols. These would permit thousands of “information valets” – or identity service providers -- to operate as competing, trusted brokers, agents, advisors or curators of information for consumers. These are places where you can lodge your persona – or one of your multiple personas. You might have one persona with your health insurance, another with the social-security administration, another with your news purveyor, you might have another with a particular retailer and one with your bank or financial-service provider.
- The only thing the network protocols might specify is a common set of rules for exchange of persona attributes -- rules within the control and purview of the consumer and enforceable by the ITE.
- Provide web/mobile users with absolute control over a digital identity with respect to accessing, sharing and purchasing news and information content, and other users.
- Information about end-user identities are known only to the end-user’s service provider (USP). The network system only knows users by a standardized unique alphanumeric

identifier. Financial information and content access are protected by impenetrable security measures accompanied by extra strong encryption, thus protecting them from external disclosure as well as internal disclosure.

7. Content support

- Enable web users to access, share, sell or buy paid content from multiple sources by means of a secure account with a single ID, password, account and bill. (Higher tiers of authentication might be added later and would involve collaborations within the health-care industry, banking industry and government, among others.)
- Create a news social network that operates through news and information content web sites at all levels from local to international.
- Create a means to deliver contextually-relevant content recommendations to network members.
- Provide easy, low-cost, copyright-respecting access to “Deep Web” and other content stored behind pay, registration, membership and once-proprietary barriers.
- Enable the delivery of precisely-targeted advertising and other commercial content relevant to a reader’s expressly shared demographic profile, social networking connections, ad content preferences and browsing history.
- Enable a system allowing site users to earn cash or rewards for engaging in a variety of potential interactions with commercial entities.
- The end user becomes a subscriber to an individual exchange member’s news service and from then on the consumer can access any content in the exchange’s repository or on the servers of other exchange-member content providers.