

## Using Standards to Normalize Domain Specific Metadata

by Andrew Mello and Lisa Rein

### Semantic Web / Web 3.0

Web 1.0 provided a way for domains to define their own metadata (using XML syntax). Web 2.0 enabled that metadata to be shared and aggregated, creating "the power of the social network." Web 3.0 provides a set of applications that enable these social networking applications \*to work together\* to provide new contextual semantics. Users don't know anymore where one application or service ends and the other begins. Services are strung together as needed, and offered up on the menu, based on the unique behavior of each individual user. Users with similar interests will naturally drift towards each other in the cloud. New clouds will form, or combine, in an on demand fashion, as needed.

### Concept / Opportunity:

We have modeled a process to monitor the interaction of end-users with brands, within controlled space and time. The monitoring process is called "B.E.A.N.", or Brand Efficacy Activity Node. A Short Term Social Network ("STSN") is an application that represents controlled space and time for the user. B.E.A.N and STSN are composed of technologies that encourage, monitor, and understand every end-user's gestures within a brand. These gestures are tracked by the creation and changes in metadata that occur over time, as each user interacts with the STSN. Users are encouraged to participate in STSN games and applications, which simulate real world surroundings via virtual offerings: games, applications, messaging, etc. In environments where autonomous data production is less than ideal, "Social Administrators" define the parameters of the STSN to create metadata sources. These administrators direct the flow of information into public and private spaces – or "clouds". The purpose of each B.E.A.N is to provide an interface to measure the effectiveness, virility, and success of a campaign in real time.

### Impact of Standards:

Users are encouraged to offer their personal data into these clouds through a vast array of applications that naturally bring flexibility into the stream of metadata. The cloud uses a variety of containers, wrappers, and libraries to normalize the data and output a scrubbed metadata stream. Designed to work with large data or small data sets, these semantic links are quantifiably stronger and thus more valuable. Using a B.E.A.N to automate the process of creating standardized streams from proprietary data streams – for instance, marking up a generic stream with RDFa tags – will eventually enable a set of services to create a seamless user experience.

We can express these social networking conversations in RDFa, using the FOAF model and XML syntax, or using any model/syntax we prefer, due to the inherent simplicity and granularity of the messaging model.

The messaging models are so simple, and the gestures are very fine-grained, and therefore can be adapted to any other existing data model that you need to interact with.

Social Networking interfaces, such as Facebook and Twitter, facilitate the use of Persuasive interfaces to encourage users to stay active on a website – to keep \*making gestures\* that will add data to the system. Every time a user updates their status – that feeds out into the system.

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Short Term Social Networks (STSN) occur all around us. Some naturally, some provided. A natural occurrence would be the Twitter network that sprung up during the South By Southwest conference in 2006. Pretty much the event that put Twitter on the map. Suddenly, users could find each other at the conference, and follow each other's audience experiences. Keynote speakers and panelists also twittered from the stage, often interacting with the audience.

After the conference, when everyone went home, they all stayed connected, and the STSN became more of a permanent social network. Currently, Virgin America provides chat rooms and messaging between the passengers on its planes, using their TV terminals.

We have the most basic example:

```
<div>
  <ul>
    <li>
      <a href="http://twitter.com/changein321">Andrew</a>
    </li>
    <li>
      <a href="http://twitter.com/lisarein">Lisa</a>
    </li>
    <li>
      <a href="http://twitter.com/bengoertzel">Ben</a>
    </li>
  </ul>
</div>
```

And to extend this to FOAF:

```
<div xmlns:foaf="http://xmlns.com/foaf/0.1/">
  <ul>
    <li typeof="foaf:Person">
      <a href="http://twitter.com/changein321">Andrew</a>
    </li>
    <li typeof="foaf:Person">
      <a href="http://twitter.com/lisarein">Lisa</a>
    </li>
    <li typeof="foaf:Person">
      <a href="http://twitter.com/bengoertzel">Ben</a>
    </li>
  </ul>
```

```
<div xmlns:foaf="http://xmlns.com/foaf/0.1/">
  <ul>
    <li typeof="foaf:Person">
      <a rel="foaf:homepage" href="http://twitter.com/changein321">Bob</a>
    </li>
    <li typeof="foaf:Person">
```

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```
<a rel="foaf:homepage" href="http://twitter.com/lisarein">Eve</a>
</li>
<li typeof="foaf:Person">
  <a rel="foaf:homepage" href="http://twitter.com/bengoertzel">Manu</a>
</li>
</ul>
</div>
```

Or we can derive the name:

```
<div xmlns:foaf="http://xmlns.com/foaf/0.1/">
  <ul>
    <li typeof="foaf:Person">
      <a property="foaf:name" rel="foaf:homepage"
href="http://twitter.com/changein321">andrew</a>
    </li>
    <li typeof="foaf:Person">
      <a property="foaf:name" rel="foaf:homepage"
href="http://twitter.com/lisarein">lisa</a>
    </li>
    <li typeof="foaf:Person">
      <a property="foaf:name" rel="foaf:homepage"
href="http://twitter.com/bengoertzel">ben</a>
    </li>
  </ul>
</div>
```

Or we can derive that these people "know" each other:

```
<div xmlns:foaf="http://xmlns.com/foaf/0.1/" about="#me" rel="foaf:knows">
  <ul>
    <li typeof="foaf:Person">
      <a property="foaf:name" rel="foaf:homepage"
href="http://twitter.com/changein321">andrew</a>
    </li>
    <li typeof="foaf:Person">
      <a property="foaf:name" rel="foaf:homepage"
href="http://twitter.com/lisarein">lisa</a>
    </li>
    <li typeof="foaf:Person">
      <a property="foaf:name" rel="foaf:homepage"
href="http://twitter.com/bengoertzel">ben</a>
    </li>
  </ul>
</div>
```

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## References:

[Metadata Marketing – Executive Summary – 88plug](#)

Andrew Mello / Lisa Rein

[Phase 1 “B.E.A.N.” Preliminary Specification – Wishfarmers components of BEAN project](#)

Gary Arthur Douglas II – Founder and CEO Wishfarmers

[SenTweet: Using AI to Identify Customer Sentiment in Twitter.com Messages](#)

[Ben Goertzel](#), PhD CEO Novamente LLC and Biomind LLC, Director of Research, SIAI

[Patterns, Hypergraphs & Embodied General Intelligence](#) – WCCI Panel

Discussion: "A Roadmap to Human-Level Intelligence" Vancouver, 2006

[Ben Goertzel](#), PhD CEO Novamente LLC and Biomind LLC, Director of Research, SIAI

[Mass Interpersonal Persuasion: An Early View of a New Phenomenon](#)

BJ Fogg, Persuasive Technology Lab, Stanford Psychology Dept.

RDFa-SYNTAX

RDFa in XHTML: Syntax and Processing

(See <http://www.w3.org/TR/rdfa-syntax>.)

CC

Creative Commons (See <http://creativecommons.org>.)

DC

Dublin Core Metadata Initiative (See <http://dublincore.org>.)

FOAF

The Friend of a Friend (FOAF) Project (See <http://www.foaf-project.org/>.)

N3

Notation 3 (See <http://www.w3.org/TeamSubmission/n3/>.)

RDF

Resource Description Framework (See <http://www.w3.org/RDF/>.)

RDFHTML

RDF-in-HTML Task Force

(See <http://www.w3.org/2001/sw/BestPractices/HTML/>.)

RDF-SCHEMA-PRIMER

RDF Primer – Section 5 on RDF Schema

(See <http://www.w3.org/TR/2004/REC-rdf-primer-20040210/#rdfschema>.)

SWD-WG

Semantic Web Best Deployment Working Group

(See <http://www.w3.org/2006/07/SWD/>.)

SWBPD-WG

Semantic Web Best Practices and Deployment Working Group

(See <http://www.w3.org/2001/sw/BestPractices/>.)

XHTML2-WG

XHTML2 Working Group (See <http://www.w3.org/MarkUp/>.)