Semblog Project
Personal Information Distribution with Social Network

Hideaki Takeda, Ikki Ohmukai
{takeda, i2k}@nii.ac.jp

National Institute of Informatics (NII)
&
The Graduate University for Advanced Studies (Sokendai)

Information and Communication Activities

- Two layers for our activities
  - **Information layer** concerns how information is explicitly represented and processed.
  - **Communication layer** concerns how relationship among people are organized and maintained, which is potential route for information.

Information Layer

- Collect
- Create
- Donate

Communication Layer

- Relate
- Collaborate
- Present
Information Activities

- A cycle of information exploitation
  - **Collect**
    - Find and retrieve information
  - **Create**
    - Process (classify, extract, combine, mix, …) information
    - Generate new information
  - **Donate**
    - Publish and distribute information

Communication Activities

- A cycle of human relationship exploitation
  - **Relate**
    - Find and contact people
  - **Collaborate**
    - Work with other people (organized work, teamwork, cooperation, …)
  - **Present**
    - Identify and contribute ourselves to communities
Information and Communication Activities

- Not ICT (Information and Communication Technology)
- But ICA (Information and Communication Activities)!

Web as Information and Communication Activities

- Web itself: Donate
- Service on Web: Collect, Create
Blog as Information and Communication Activities

- Blog itself: Create, Donate
- Service on blog: Collect, (Relate), (Collaborate), (Present)

Information and Communication Activity Navigation (ICAN!)

- Explicit services to both layers
- Seamless services
Semblog Project

- Applying Weblog and Semantic Web technologies for ICA support.
- Model
  - “Person” on Web
    - Weblog: Information archive for individuals
    - Foaf
  - Interpersonal relations
    - Links between Weblogs
    - Foaf relations
- Steps
  - Phase 1: Platform
    - Metadata design
    - Basic tools for seamless support in searching, editing, and publishing
  - Phase 2: Applications
    - Recommendation
    - Search

Weblog Architecture

- Four layers for Weblog

<table>
<thead>
<tr>
<th>Application</th>
<th>Search</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregation</td>
<td>RSS Aggregator</td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td>Blog Tools</td>
<td></td>
</tr>
<tr>
<td>Metadata</td>
<td>RSS</td>
<td>Atom</td>
</tr>
</tbody>
</table>
Community Web Architecture

- Extended to Social network and ontology

<table>
<thead>
<tr>
<th>Application</th>
<th>Egocentric Search</th>
<th>RNA Alliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregation</td>
<td>RNA</td>
<td>Glucose</td>
</tr>
<tr>
<td>Management</td>
<td>Blog Tools</td>
<td>FOAF TrackBack</td>
</tr>
<tr>
<td>Metadata</td>
<td>PermaRSS</td>
<td>FOAF</td>
</tr>
</tbody>
</table>

Contents  Social Network  Ontology

Semblog Products

- RSS-based information exploiter
  - Extension of RSS aggregator
  - Seamless support of searching, editing, and publishing
    - Searching: search from myself (egocentric search)
    - Editing: (weblog tools)
    - Publishing: Three ways
      - Check: which weblogs I am reading
      - Clip: which entries I am interested
      - Post: what I am thinking
  - Developed Tools
    - RNA: Server-side scripts
    - glucose: Windows client
RNA: Personal RSS Portal

http://www.semblog.org/

- Extension of RSS aggregator
- User can
  - Register weblogs (Check)
  - View entries from various aspect (HTML/RSS)
  - Preserve interested entries (Clip)
  - (Post)
- System does
  - Metadata Management
    - TrackBack extraction
    - Keep Metadata-added cache
    - Generation of ParmaRSS
  - Re-distribution of RSS
    - Publishing “Checked”, “Clipped”, and “Posted” entries
  - FOAF Management
    - FOAF TrackBack (formally “acsh”)
- Over 3,000 downloads in Japan
glucose: RSS Aggregator / Weblog Editor
http://glucose.dip.jp/

- A client program to support searching, editing, and posting
- User can
  - Register weblogs (Check)
  - View weblogs with 3-pane interface
    - TrackBack extraction (Followed by “Re:”)
  - Preserve entries (Clip)
    - Cooperated with RNA
  - Post via weblogs (Post)
    - Built-in Weblog editor
  - View FOAF
- Over 150,000 downloads in Japan
FOAF Management

- Maintaining social network to determine information channel
  - FOAF: Friend Of A Friend is open metadata format to describe human relationship with RDF.
    - Self introduction section e.g., name, e-mail address, weblog URI…
    - Human relationship section with <knows>
- FOAF TrackBack
  - Our proposal
  - Provides an easy way to expand social network

PermaRSS

- PermaRSS is a permanent entity of an RSS for each blog entry.
  - Our proposal
  - Including…
    - Link and TrackBack relationship with other entries.
    - Topics and categories with rdf:resource
  - Each blog entry has different PermaRSS files.
RNA Extensions

- RNA as personal information portal
  - RNA can cope with other application via XML-RPC
    - Glucose can post clipped entries to RNA
  - Can be aggregation sites for dynamic personal information
    - e.g., location-based application

- RNA Alliance: Cooperation among multiple RNA sites
  - RNA can work as P2P application
    - RNA sites can communicate to each other
    - Information exchanging on personal network is realized
  - P2P Information Recommendation
    - Recommendation with similarity between RNA sites
      - Input
        - Registered weblog sites
        - Categories (ontologies)
      - Output
        - Weblog sites
        - Entries
  - Extending personal network
    - Really Friend of a Friend!
    - Community Discovery
Friends' RNA with FOAF link

RNA::ALLIANCE
Mutual alliance of RNA with FOAF metadata (experimental)

Friend Of A Friend: FOAF

Friends' RNA with FOAF

Recommended Sites

RNA Alliance and Recommendation
Construction of Personal Ontology

- Bottom-up ontology construction
  - We regard personal categorization as implicit “personal knowledge” → Personal Ontology
  - Establish “personal knowledge” with metadata
    - FOAF / Contents RSS / RDFS Ontology
    - Compatibility with conventional blog system
      - Distributed management model

Personal Ontology

- **Contradiction?**
  - Explicit specification of a shared conceptualization that holds in a particular context [Schreiber]
- **Possible** under the following two hypotheses
  - People share most concepts in a deep level
    - Personal ontology is **ontology**
  - People explicate their concepts only from a particular context
    - Personal ontology is **personal**
- Aggregation of personal ontologies is important
  - Some concepts and their relations are shared
  - Some concepts and their relations are different
  - The aggregated personal ontologies can be (general) ontology
Construction of Personal Ontology

- Bottom-up ontology construction
  - We regard personal categorization as implicit “personal knowledge” → **Personal Ontology**
  - Establish “personal knowledge” with metadata
    - FOAF / Contents RSS / RDFS Ontology
    - Compatibility with conventional blog system
      - Distributed management model

RNA Alliance with Personal Ontology

Infrastructure building and exchanging personal ontology

- Build personal ontology with RNA
  - Categorization of contents
  - In cooperation with blog tools
- Publishing personal ontology with RNA
- Ontology integration with friends’ RNA
  - Recommendation for sites and categories
  - Integration methods
    - Content-based [Hamasaki02]
    - Instanced-based [Ichise03]
Conclusion

- Concept for Information and Communication Activities
  - Six activities model
  - Four Layered model for contents, social network, and ontology
- Semblog tools
  - RNA: server-side aggregator / publisher
  - Glucose: client-side aggregator / editor
- Semblog application
  - Recommendation by RNA alliance