Supporting public deliberation through spatially enhanced dialogues

Master thesis

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ABSTRACT
swaghetti yolonaise

INTRODUCTION
Interactivity and collaboration are core characteristics of Web 2.0 applications. This holds

RELATED WORK
Argumentation mapping
Rinner[1]...

Existing implementations...

Evaluation...

Public deliberation and eParticipation

APPROACH
DialogMap
In order to test the initial idea of supporting public deliberation through spatially enhanced dialogues, a working prototype had to be developed.

Input and opinions from potential users with specific use cast in the future.

Design decisions
As seen in X,Y and Z, important aspects of A are...

Internally, the application uses few data models. Contributions contain a title, description, two categories, a tags field, a favored counter, an optional time restriction field for start and ending times, an optional image, an optional reference to a parent contribution and optional references to child contributions. The parent and child contribution references create a simple parent-child connection between contributions, as children inherit the categories, tags, time restriction and title. A contribution serves both as a topic and as response to a topic. A contribution also contains references to features, references to features and references to URLs.
Features are geospatial entities with a spatial location, a reference to its contribution and properties for styling[1].
Feature references contain a description of the featurea and the reference to a feature. URL references contain hyperlinks and a description of the hyperlink. The description of a contribution contains the text typed by a user with specially encoded references to features, URL references and feature references.
After signing in, users can create contributions in the manner of creating topics or writing responses to existing topics. Users have an e-mail address and a name.

The front page of the application puts a map side by side with a sidebar at right hand side containing from top to bottom the input form for new contributions, filter options, sorting order selector and a list of contributions. The input form consists of input fields for title, categories, time restriction, image and description. The description field allows the creation of spatial features and URL/feature references through connecting words with spatial representations or URLs.
A free text input field and multiple checkboxes The list of contributions contains colored rectangles representing the different topics. Each box contains the title, time of writing, name of the author, categories, tags and the amount of times favored by users. It also contains a link which navigates to the replies written to the topic. A click on the contribution box expands it, revealing the description of the current topic.

- Map view with sidebar on right hand side
- Two way highlighting between contributions in sidebar and features on map
- Creation of Topic with
  - Title
  - Category/ies
    - in this specific case for two dimensions
      - Color
      - Icon
  - Tags
  - Time limit
  - Image
  - Special Description field which allows to create
    - Points and Polygons
    - References to existing Points and Polygons
    - Hyperlinks
- Sorting
- Filter
  - Fulltext

[1] `https://github.com/mapbox/simplestyle-spec`

  - Categories
  - Tags
  - Time
- Favorites
- Register/Sign in
  - with Google,Facebook, Twitter

Implementation

DialogMap has been implemented as a single-page web application using AngularJS[2] and Ruby on Rails[3]. The single-page structure was chosen in order to provide the user with a clear navigation between the overview and contribution answers. This also allows for a seamless browsing experience without full reloads of the page. AngularJS is a JavaScript framework with features like templating, two-way binding and DOM manipulation. It follows the model-view-controller pattern in order to bring server side paradigms to client-side development. AngularJS was chosen because of its popularity, extensibility and high number of available libraries. It also enables to wrap existing JavaScript libraries to be used in AngularJS context.

The mapping library Leaflet[4] serves as base for displaying base maps and geospatial data. The user-facing web page was developed using tools like CoffeeScript[5], Haml[6] and Sass[7] to speed up the development. The web page was developed with all major browsers in mind.

On the server side, components were developed using the Ruby on Rails framework with PostgreSQL[8]/PostGIS[9] as data storage. Ruby on Rails, originally a full-stack model-view-controller web framework, is used as a JSON serving application logic. It was chosen because of its maturity and high number of available libraries. Front- and backend of the application communicate in REST[10]-API[11] like manner. This allows for easily replaceable front- and backend application stacks.

Figure 1 shows the front page of the application with an active two way highlight.

Without the extensive use of open source software and code, development would have taken much longer. It is planned to release the source code through github[12].

EVALUATION

Interviews

Utility evaluation

Types of questions

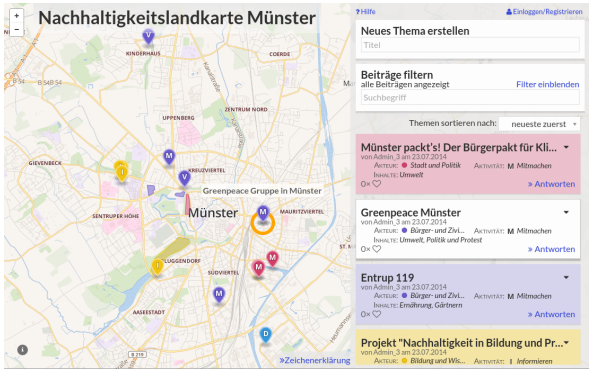

Figure 1. Screenshot of the front page of *DialogMap* with active highlight of a contribution and spatial feature.

Results

CONCLUSION

This work discusses the implementation and pre-evaluation of an application to support public deliberation through spatially enhanced dialogues.

Future Work

Pick up shortcomings emerged during evaluation. Point to solutions...

Legal implications of running such a website have to be explored.

[2] `http://angularjs.org/`
[3] `http://rubyonrails.org/`
[4] `http://leafletjs.com/`
[5] `http://coffeescript.org/`
[6] `http://haml.info/`
[7] `http://sass-lang.com/`
[8] `http://www.postgresql.org/`
[9] `http://postgis.net/`
[10] Representational State Transfer
[11] Application programming interface
[12] `https://github.com/ubergesundheit/dialogmap`

REFERENCES

1. Rinner, C. Argumentation maps: GIS-based discussion support for on-line planning. *Environment and Planning B: Planning and Design 28*, 6 (2001), 847–863.