

Aspects of Personal Navigation with Collaborative User Feedback

Harald Holone

2008-10-21

Overview

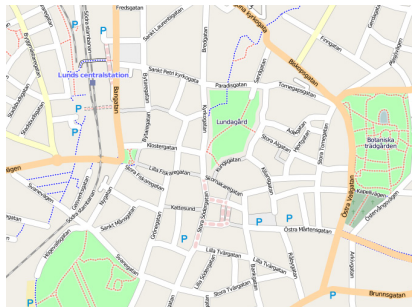
- ▶ MAG - Mobile Applications Group.
- ▶ OurWay - the collaborative route planner.
- ▶ Using Bridges - connecting ways, linking people and groups.

Main findings

- ▶ The concept seems feasible.
- ▶ Users behave selfishly.
- ▶ Rating is a *by-product* of use.
- ▶ The routes still improves over time.

User Generated Content

- ▶ Wikipedia
- ▶ OpenStreetMap
- ▶ More than entertainment and soapboxing.
- ▶ Collaborative navigation.
- ▶ Volunteered geographic information (VGI).
- ▶ Why user generated?



OurWay

The OurWay project is constantly evolving, as is our interest related to the concept.

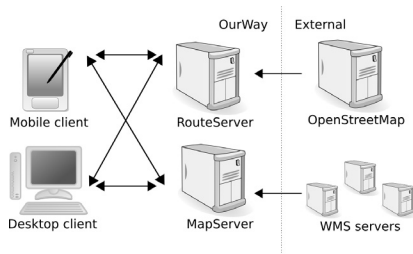
► Project history

1. Proof of concept / technology focus (NGMAST).
2. Potential as an assistive tool and for campaigns (ICCHP).
3. Understanding user behaviour (NordiCHI).



The prototype / system

- ▶ Route planning server.
- ▶ Mobile navigation client.
- ▶ Query for routes.
- ▶ Provide feedback (*inaccessible, inconvenient and good*).



Purpose of indoor experiment

To evaluate the effectiveness, efficiency and satisfaction of use of a collaborative tool for rating of accessibility and to assess the feasibility of the concept.

Experiment

- ▶ Indoors in our campus building.
- ▶ Pre-determined sequence of tasks.
- ▶ Get from one location to another.
- ▶ Round-robin selection of start task.
- ▶ With and without technology for comparison.



Participants

- ▶ Nine users.
- ▶ Two male and seven female participants.
- ▶ Ages 29 - 60.

Data collection

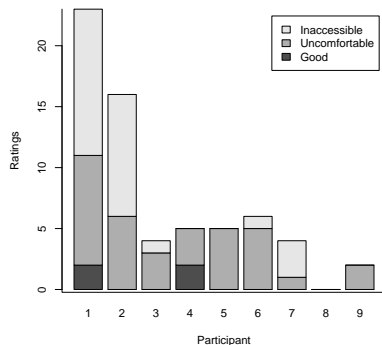
- ▶ Short interviews/debriefings.
- ▶ Questionnaires.
- ▶ Video, pictures and observations.

Findings

- ▶ Segment ratings and convergence.
- ▶ Route quality.
- ▶ Usefulness of service.

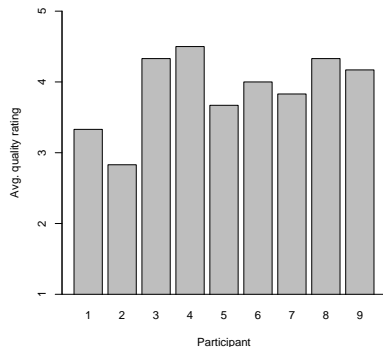
Segment ratings and convergence

- ▶ Route convergence as expected.
- ▶ Small transportation network.
- ▶ Typical obstacles: stairs, doors, thresholds.
- ▶ Results are likely to be similar outdoors.



Route quality

- ▶ Rated rather high, even for those doing most of the work.
- ▶ Faith in the systems ability to find the shortest path.

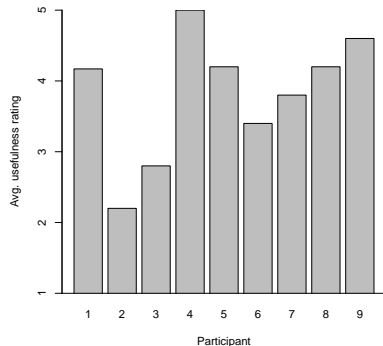


Participant 6 on route quality

"I think this must have been the quickest route for solving this task. There was a narrow elevator, and the white door in the basement was heavy. I'll give it 4 for quality."

Usefulness of service

- ▶ Increasing over time.
- ▶ Depends (not surprisingly) on familiarity with building.
- ▶ Rated high on behalf of others (retrospectively).



Participant 1 on usefulness

“The system knew I was going to the ground floor. We used the lift to get here. Despite that, the system wanted me to use the stairs this time.”

Participant 1 on usefulness

“The system knew I was going to the ground floor. We used the lift to get here. Despite that, the system wanted me to use the stairs this time.”

...and

“If this wasn't an experiment, I would just ask someone to help me.”

Other observations

- ▶ Selfish behaviour.
- ▶ *Retrospective altruism*.
- ▶ Awareness of others low and diminishing.

Effectiveness

- ▶ Yes, it does work.
- ▶ No community of practice.
- ▶ Works as a *by-product* of selfish goal-seeking
- ▶ *Inaccessible* is the only predictable rating.

Efficiency

- ▶ Most of the work done by the first two users.
- ▶ It takes effort to use the system (it can get in the way).
- ▶ Replace ratings with “request new route”?

User satisfaction

- ▶ Good, although more “intelligence” wanted with regard to the type of obstacles.
- ▶ Increasing over time.
- ▶ Users thinking positively about the usefulness for others even when they themselves report it lower.
- ▶ Priming the system.

Conclusions

- ▶ The concept is confirmed as feasible, also indoors.
- ▶ Segment ratings are a *by-product* of using the navigational tool.
- ▶ Introducing OurWay to an existing community of practice.
- ▶ Simplifying interface, hide ratings, create a one-button system.

Next steps

- ▶ Go deeper into themes related to motivation, egoism and altruism and social navigation of information.
- ▶ Do a larger scale experiment with more users over a longer period of time.
- ▶ Do simulations when we know enough about our users behaviour to model them properly.

Questions?

Aspects of Personal Navigation with Collaborative User Feedback

Harald Holone

2008-10-21