Point-to-GeoBlog: Gestures and Sensors to Support User-Generated Content Creation

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Overview

- Objectives
- Our approach
- Prototype 1 → Field study
- Prototype 2 → Field study
- Conclusions

Objectives

- Finding public geo-tagged information about the places around you
- No complex location models needed
- Lightweight, casual interaction
- Trace previous journeys
- Record / share daily experiences (e.g. blogging)

Our approach

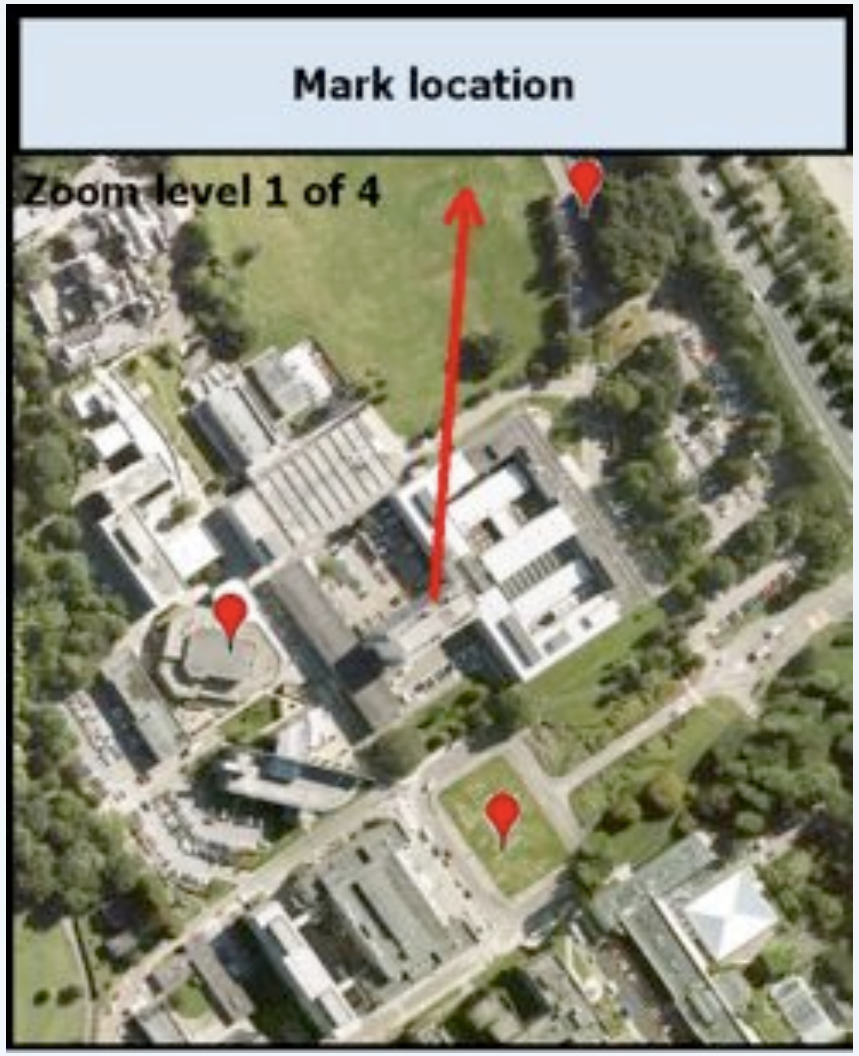
- Two mobile prototypes
  - Visual feedback + gesture
  - Gesture only
- Phased interaction, multi platform
  - Mark up area of interest while mobile
  - Reflect on previous visits at later time
- Geo-maps

Prototype 1: Visual feedback + gesture

- Hardware
  - SHAKE sensor pack
  - GPS receiver
  - PDA

Marking interest

- Point device at location
- Tilt for distance
- Drop marker
- Zoom out for greater range
  - (Location browsing)



Marking interest

- Point device at location
- Tilt for distance
- Drop marker
- Zoom out for greater range
  - (Location browsing)

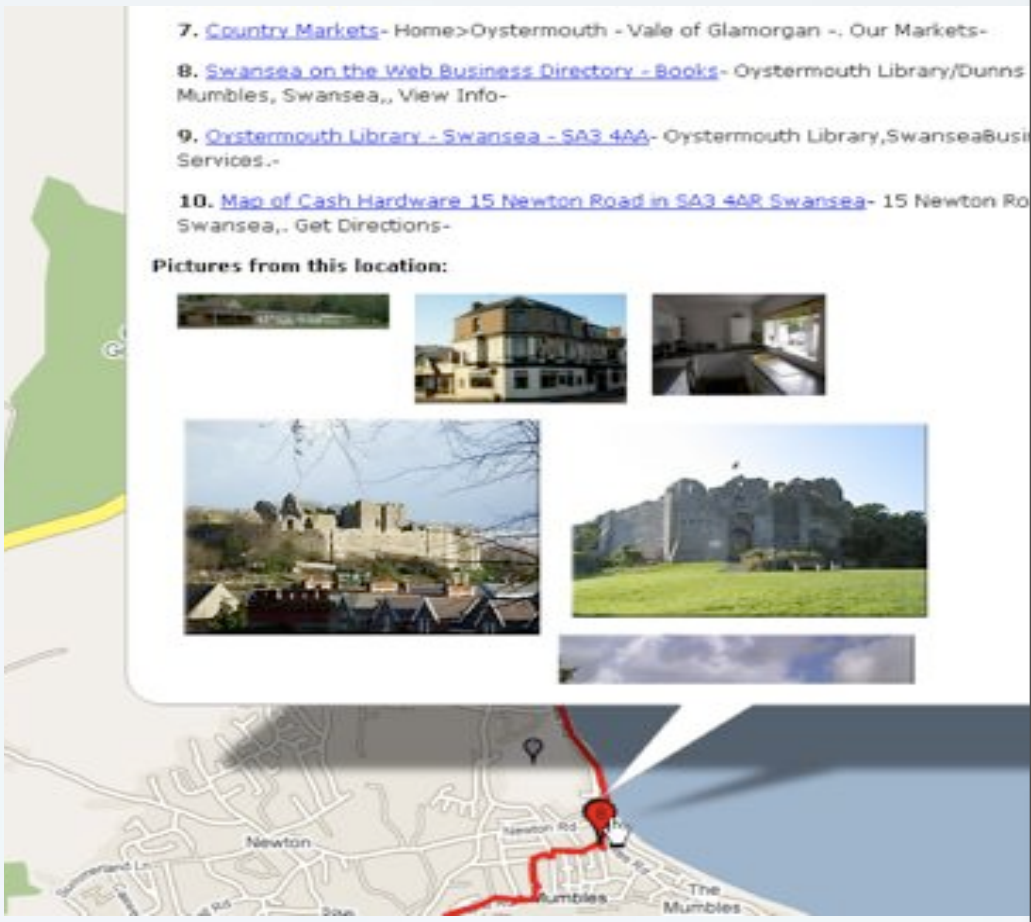

Mark location

Making maps

- Automatic, post-process at PC
- Plot journeys on map

Making maps

- Generate location surrogates for each point of interest
- Retrieve web pages, image results, social networking content
- Visualise

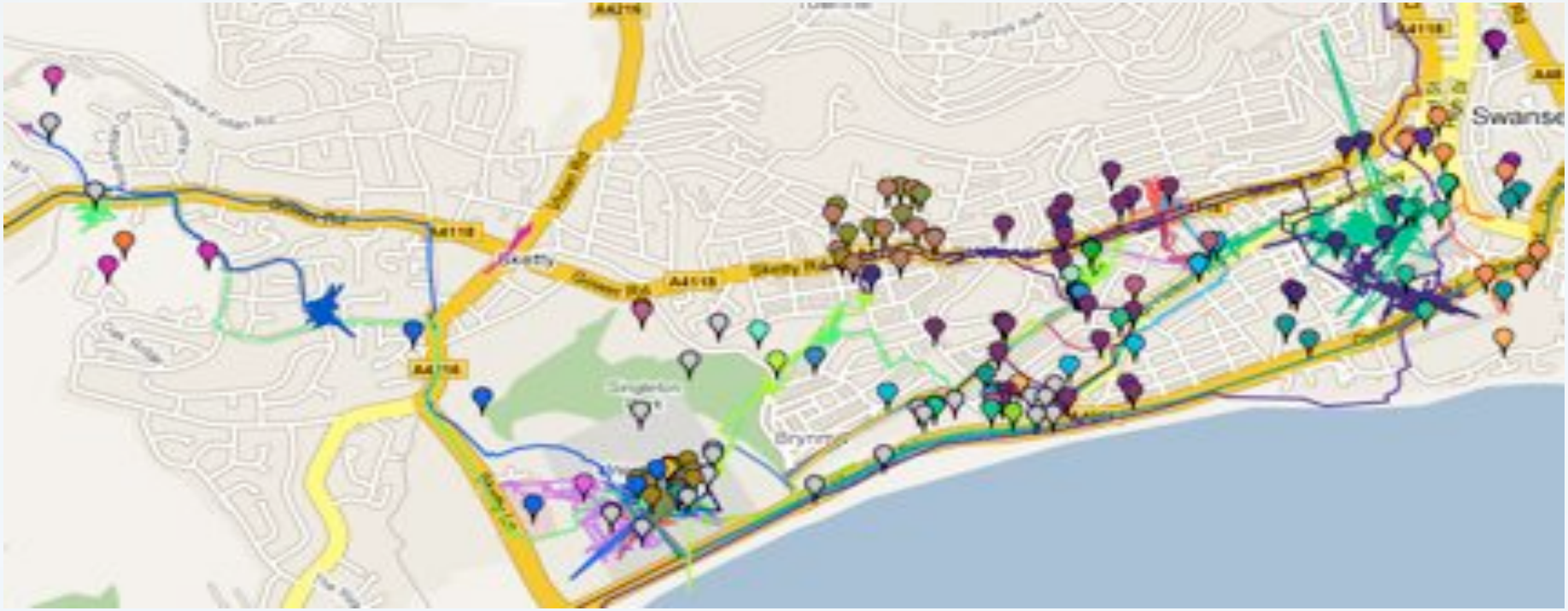


Field study

- Method
  - 15 participants, 18-45 years old
  - 4-day period, use-at-will
  - End of study: generate maps; peruse results
- Gather
  - Logged data, feature ratings
  - Think-aloud
  - Interviews

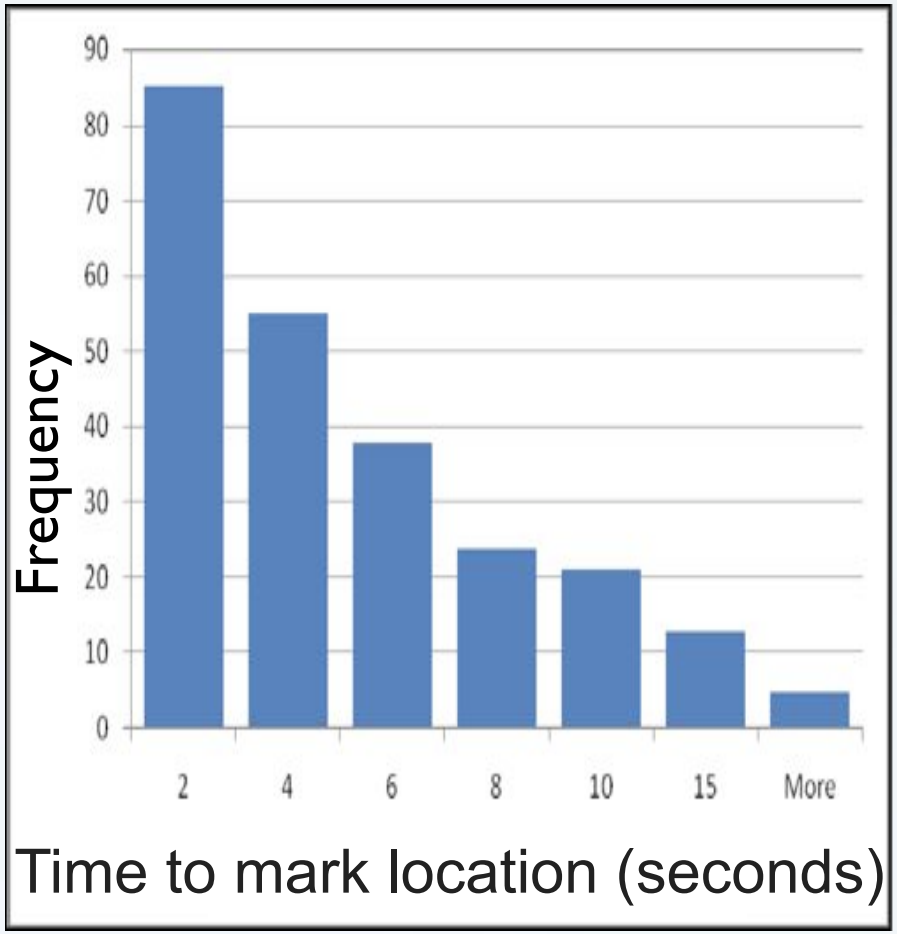
Results: Journeys and points of interest

- 57 journeys, 241 marked areas of interest
- 14 - 56 square miles



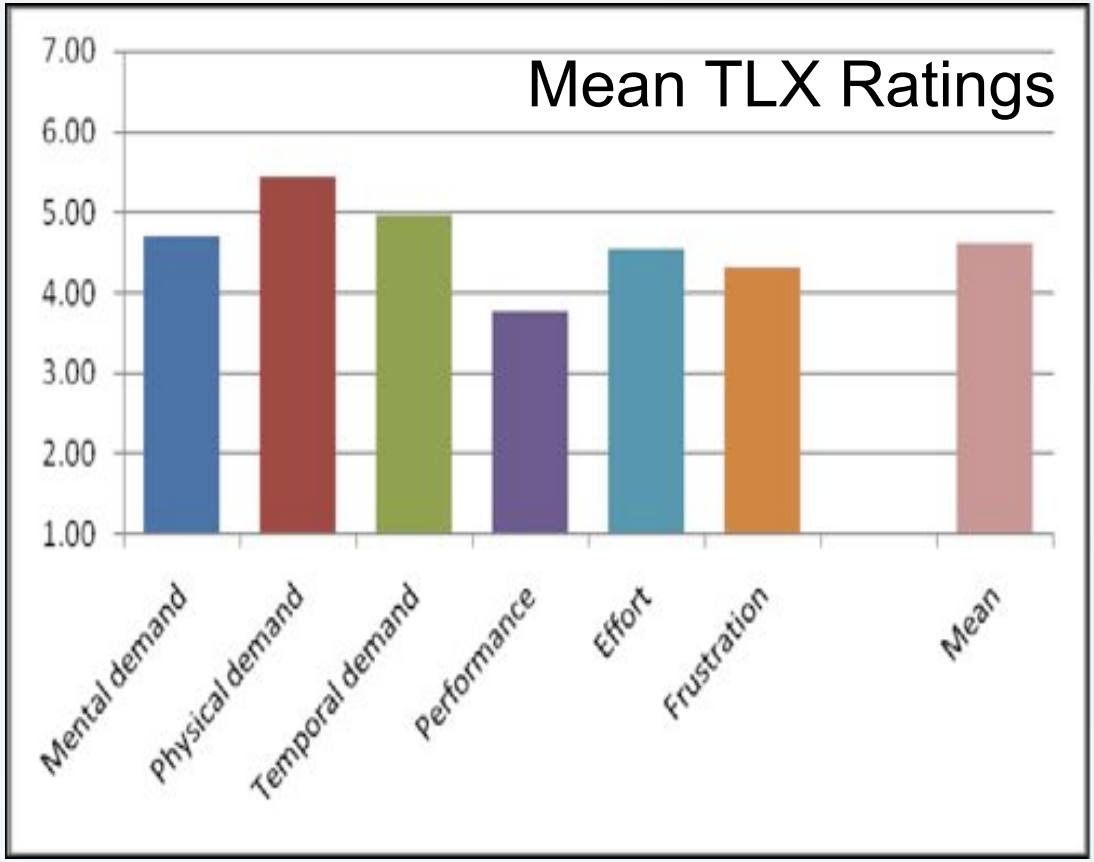
Journeys and marked points of interest

- Public buildings; historical interest; natural features
- Mostly unique targets
- Average distance 230m (but large variance)
- Average time to mark: 4.5s



Mobile task load and usability ratings

- Positive ratings for usage demands (but not overwhelmingly so)
- Elements of usability problematic



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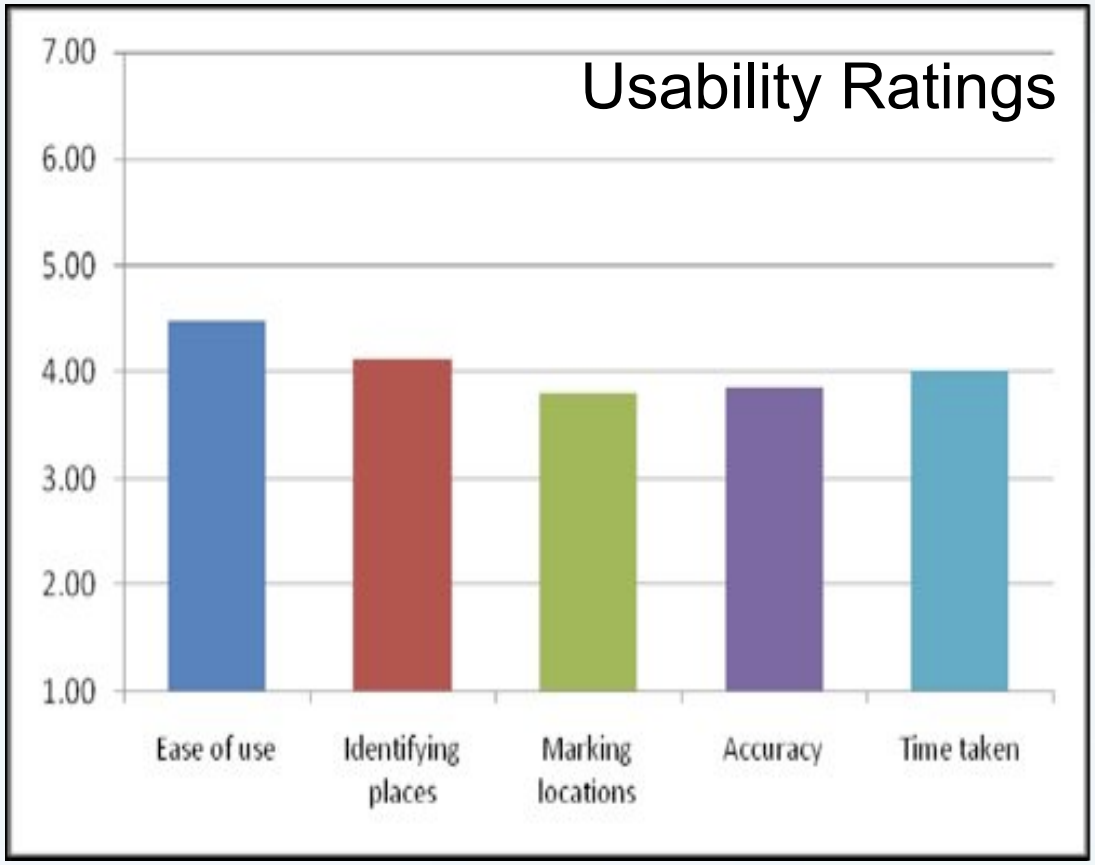


Interviews relating to mobile use

- Pointing appreciated
- Visual display impacts
  - When display didn't function...
  - Learning to mark without looking...
- Range of precision discussed
  - Variations in user needs

Interview and think-aloud findings

- Finding out about the richness of a place
  - Not just visitors
- Expanding horizons
  - New route home
  - Place participant hadn't realised was close to them

Content ratings

- Utility
  - One participant found useful information about a business they later used
- Content automatically retrieved for 65% of locations
  - Average rating 5.4 on scale of 1 (not useful) to 7 (highly)
  - Preference for images / social content
  - Desire for filtering / control of content view

Reflections

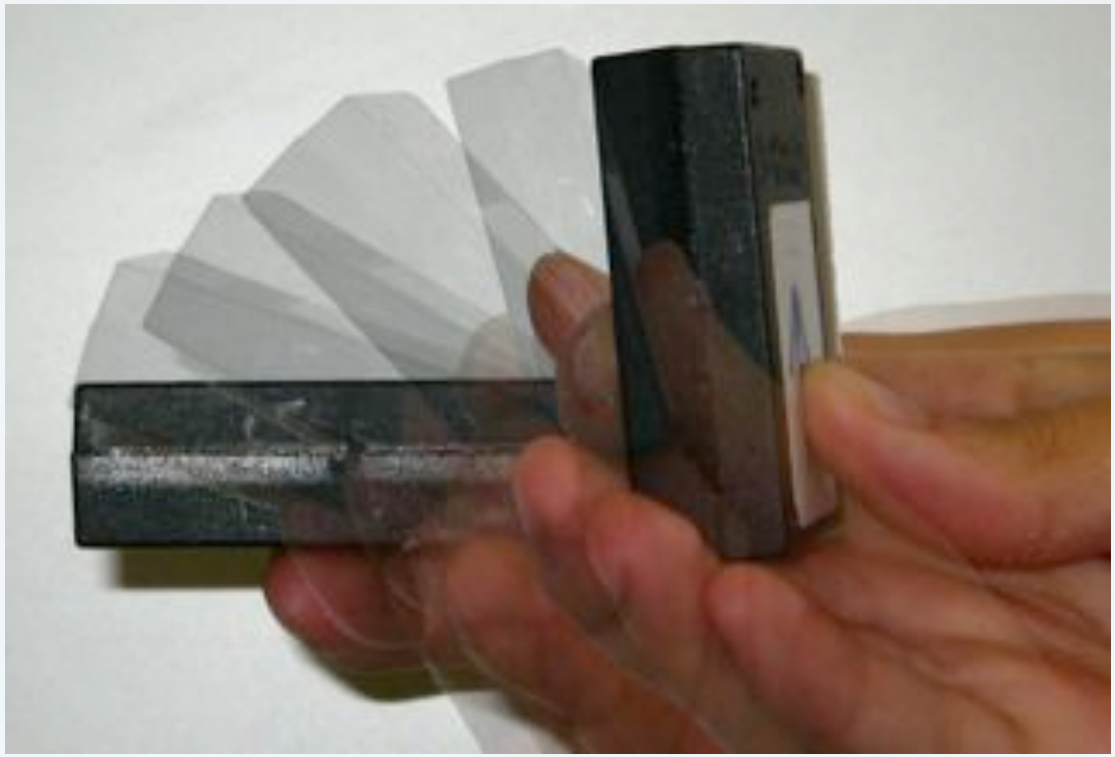
- Users took to concept and saw value
- Opportunity for content "barren" locations
  - Add your own information?
- Over-kill?
  - "Blog/remember this location" mode?

Reflections

- Visual approach has both positive and negative impacts
  - Elegance of simple interactive maps
  - Matching physical and digital a fiddly task?
  - Perceived as too slow?

Prototype 2: Gesture only

- Map creating and visualisation elements same
- Marking points of interest much more casual
  - Non-visual



Exploring the approach

- 7 participants, 7-day field study
- Judging distance with no feedback

Exploring the approach

- Most gestures recognised, some false positive problems
- Average of 127m, furthest 500m
- *'Googling the real world'*

Conclusions

- Casual, frequent content-related interactions are under-investigated
- Visual modality not necessarily best fit for what we are trying to achieve
- Non-visual has potential
  - Needs further work
- Users still managed to find content: could be used for sharing information about their journeys

Ongoing work

- Role of haptic feedback
  - Directional sensing possibilities
- Wider gestural vocabulary?
- Tools for making use of gathered data and creating stories / blogs
- Low-cost real-time applications
  - Location-based content for status updates in social networking

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Related work

- Complex location models, real-time interaction, highly specific needs / tasks
  - Point-to-select / point-to-retrieve
    - E.g. GeoWands
  - Browsing information spaces
    - Dynamics Group Glasgow
- Less purposeful, lighter-weight, casual, phased interaction across devices
- RelateGateways, Zonetag, Laid-back searching