A Location is Worth a Thousand Experiences

Design Implications for Location-based Experience Capture Systems

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Motivation

Mobile digital annotation of a location is able to reflect some aspects of a person's experience of that location [1]. These location-based annotations (e.g., photos, text, video, songs) can be perceived and interpreted by recipients by being at (approximately) the same place where the expression was made. Semantics of location-based generated content (tags, annotations) ⊭ pragmatics of original experience that goes beyond direct system interaction. For urban computing, experiences at locations need to be better understood [1]

Prototype

Allows annotation of locations with multimedia expressions (drawings, text, photographs)

CREATE
Touch-based Drawing
Text

SNAP
Photographs

EXPLORE
An expression can be viewed when at the right position and orientation

The expression appears as an Augmented Reality overlay on the camera view

Aims

1. Identify patterns in location-based experience capture behavior

2. Draw functional (F) and interaction (I) design implications for the design of future location-based experience capture systems

Diary Study

Previous Research

Pilot study with an experience capture prototype (above) revealed two methodological problems:

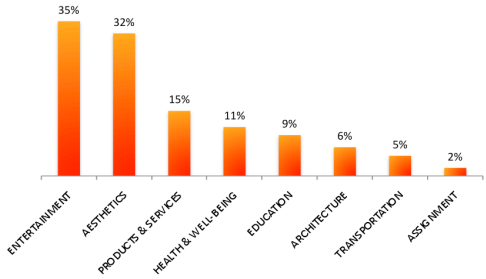
1. Limited Interaction Duration
2. Experimental Straw Man: Perceptions tied to existing functionality and interaction methods or application merely a probe into future experience capture technology?

➔ Longitudinal (~1 week) multi-modal diary method [5] where subjects used any media device to express themselves.

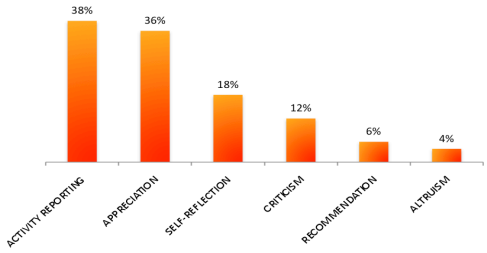
Methods

- 8 subjects (6 m, 2 f)
- 8 custom-designed paper diaries:
  1. Questions about expression
  2. Questions about subject context
- Categorization task applied to expressions made in the diary study for inter-coder reliability. Voting procedure used to classify responses (N=6) according to domain ("what") and task ("why") categories (right)

Domain Ratings (N=6) for 110 Expressions



Task Ratings (N=6) for 110 Expressions



Results

- **Media Preferences:** Most expressions were photos (46%), then text (24%), and songs (13%). Text expresses something beyond the qualities of a location. Songs act as surrogates for the memory of a place

- **Spatiotemporal Aspects:** Most expressions made at Urban places (39%) followed by public places (21%). Location (spatial dimension) important for experience capture, but events (temporal dimension) are an immediate source of inspiration

- **Social Aspects:** Most expressions were made public (71%) for everyone to see. However, they were mostly made alone (46%), compared with a group (30%) or one other person (25%)

- **Affective Aspects:** For valence, most expressions were positive (46%), then negative (29%) and neutral (16%). For arousal, most were high arousal (46%), then low (33%) and neutral (22%)

- **Cognitive Aspects:** Most subjects stated no causal relation between their expression and something in the environment (65%). Closer analysis showed expression triggers were mostly situations (57%), then objects (33%) and persons (10%)

Design Implications

F.1. Predominant domain (aesthetic, entertainment) and task categories (appreciation, activity reporting) in experience capture behavior

F.2. Location quality saliency can be mediated by explicit experience-capture planning behavior

F.3. Application personalization ('when') should depend on and adapt to the user's context ('what')

I.1. Location-based experience capture means open access to all

I.2. Experience context consumption awareness may alleviate the metadata problem, but still insufficient compared to sensor data acquisition

I.3. Location-based experience capture methods expected to follow online social network behavior standards

[1] P. Dourish. Where the Action Is: The Foundations of Embodied Interaction. The MIT Press, September 2004.
[2] A. Amin, S. Townsend, J. Ossenbruggen, and L. Hardman. Fancy a drink in canary wharf?: A user study on location-based mobile search. In INTERACT '09: Proceedings of the 12th IFIP TC 13 International Conference on Human-Computer Interaction, pages 736–749. Springer-Verlag, 2009.

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