1. Introduction

The conceptualization of an urban orientation system was based on the idea that an individual's walking journey could be enhanced by providing contextual information about points of interest (POIs) along their route. Research revealed numerous ways to provide serendipitous and task-critical information for both sighted and visually impaired users as they navigate through an urban environment on foot. Thus, a prototype system was developed to meet the following criteria: provide the user with an unobtrusive mobile device to facilitate contextual information presentation; a socially maintained online database containing information about POIs; software that is accessible via both graphical and speech user interaction; and location "tags" to be detected by the unobtrusive device.

2. Methods

Four collection methods were used to gather data regarding characteristics of a walking journey: surveys; observations; focus group evaluations for qualitative data; and "Wizard of Oz" (WOz) simulations, where participants interacted with a system that was simulated by one of the researchers.

3. Findings

We found that blind individuals require numerous waypoints to help with their orientation during a walking journey. They require an orientation device that is unobtrusive and includes accessible information about POIs. Interviews revealed that both blind and sighted individuals felt personalization of an orientation system is very essential. The varying needs of individuals make the ability to filter contextual information indispensable. Accurate location detection and real-time information would allow augmentation of individuals’ daily walking journeys, especially those experiencing blindness.
4. Prototype

The data findings described above substantially informed the design of this urban orientation and contextual information system. A prototype system was developed to meet the aforementioned criteria.

![Diagram of Talking Points system](image)

**Figure 1: System & interaction diagram**

The "Talking Points" system consists of two components (see Figure 1): a social online database, facilitating user-generated content of POI information; and a mobile device that detects POIs and presents the contextual information through either a Speech User Interface (SUI) or a Graphical User Interface (GUI).

5. Conclusions

The goal of this study was to investigate methods of using contextual information systems to enhance the walking journey of both sighted and non-sighted people. Information from the research conducted here demonstrates that both users could benefit from contextual information systems with access to location specific user generated content. A socially maintained urban orientation and contextual system such as this offers relevant, dynamic, and up-to-date information, the combination of which may not otherwise be accessible.

6. References


