
Poster: Cue Card – Bus Availability Reminder

Te-Yuan Chen
Wen-Yi Chou
Chai-Yu Hsu
Min-Rou Chen
Chen-Ai Wong
Chun-Ju Kuo

Department of Library and Information Science,
National Taiwan University
b02106043@ntu.edu.tw

Weijane Lin, Ph.D.

Department of Library and Information Science,
National Taiwan University
vjlin@ntu.edu.tw

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Abstract

The experience of waiting for a bus is sometimes frustrating due to the uncertainty and anxiety. This study approached the information shortage problems by providing real time availability of the bus, to leverage users' uncertainty and facilitate users' decision making. Field study was conducted to understand the users' behaviors and performances, and a form prototype was accordingly developed for user testing and evaluation.

Author Keywords

Bus availability; transit ridership; IoT.

ACM Classification Keywords

H.5.2. Information interfaces and presentation (e.g., HCI): User Interfaces: User-centered design.

Introduction

Previous studies of public transportation suggested that the uncertainty of the information usually caused worry, tension and frustration [1]. In Abdel-Aty's survey of 1,000 passengers in northern California, the information about the operating hours, seat availability, frequency of service, number of transfers, ticket fare and walking time to the stops were significantly recognized as necessary by the users. Although there were several applications to provide users with

請問您一星期使用電子票證(如悠遊卡、一卡通等)搭乘交通工具的頻率為何?
(169 則回應)

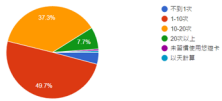


Figure 1: Frequency of e-tickets use

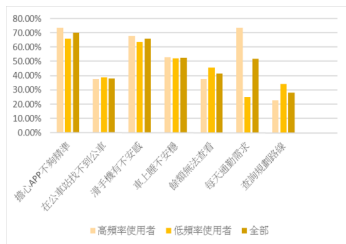


Figure 2: User's needs of information

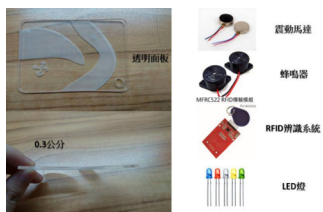


Figure 3: The form prototype of CueCard

information on transit service recently in Taiwan under the open data movement, few of them were designed based on passengers' perspectives. This study therefore intends to explore the potential of information on transit ridership. Field study was conducted to understand the users' behaviors and performances, and a form prototype was accordingly developed for user testing and evaluation.

Research Design

We firstly conducted the field observation and study to collect users' behavior sequences. Secondly an online survey regarding users' information needs and attitudes was distributed. Based on the analysis, a form prototype was developed and tested by 57 users.

Preliminary Results

There were 169 valid responses collected from the online survey, the results show that buses were the major public transportation for the participants. According to the responses, transit between bus and MRT was the most frequent. As shown in Figure 1, over 90% of the participants were using e-tickets and electronic stored value cards such as EasyCard, iPass, and ETC.

To compare with Abdel-Aty's study, we asked the participants concerns when taking the bus. The results suggested that the frequency of service and seat availability were also recognized as necessary by local participants.

Prototyping

Based on the results from the observation and survey, a form prototype was developed as shown in Figure 3 and Figure 4. The key functions of CueCard included Reminder, Seat availability, Transit route, Stored value, Mile calculator, and Stop cue.

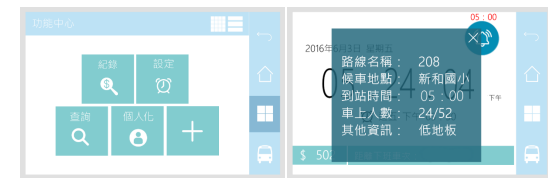


Figure 4: User interface of CueCard

Discussion and Conclusion

Preliminary results from this ongoing study suggested that the passengers' emphasis and desire of information were different from the data providers and should be taken into consideration. The following analysis will be focus on the realization of the form prototype for field testing.

References

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2. Abdel-Aty, M. A. (2001). Using Ordered Probit Modeling to Study the Effect of ATIS on Transit Ridership. *Transportation Research Part C: Emerging Technologies*, 9(4):265-277.