HO CHI MINH UNIVERSITY OF TECHNOLOGY

SOFTWARE ENGINEERING – CC01 – HK222

USABILITY TEST OF

THE MVP1 FOR URBAN WASTE COLLECTION AID - UWC 2.0

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REPORT DATE: 05/04/2023

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1. Introduction

The UWC 2.0 is an information management system that provides a more effective solution to manage and distribute work force in urban waste management process.

With UWC 2.0, the organizations are able to develop an adequate waste collecting process that is adequate for various regions and conditions.

This test focuses on the Model-View-Presenter 1 which is a Mobile-view Task assigment for Janitors – the ones manually collect garbage from Major Collecting Points (MCPs) – and Collectors – the ones drive different types of vehicles to an MCP to pick up garbage from all janitors.

The test is conducted by the members of group *Lorem ipsum* (including the report writer), group CC01, Software Engineering subject, Ho Chi Minh University of Technology. The facilitors decided to use quantitative research method to assess the experience of the users. The group members generated a simple wireframe with Figma to simulate the user interface (MVP1) and as well as using it as a main testing material. The The session captured each participant's naviagtional choices, task completion rates, comments, overall satisfaction ratings, questions and feedback.

2. Executive Summary

The team conducted a remote usability test from March 26th to April 4th. The purpose of the test was to assess the usability of the Mobile app interface functions, information flow, and information architecture.

There were a total of six attendees and each session had the time limit in two hours.

In general, all participants found the MVP1 to be clear, straightforward, the navigation menu was direct and take minimum amount to access different sections.

The test identified a few problems including:

- Lack of forms of check in/out confirmation
- Lack of range of date for each work week
- Lack of method to contact the back officers
- Lack of displaying employee's ID
- Lack of profile changing interface

3. Methodology

The test administrator recruited participants through personal relationship via social media app (mostly Facebook). The participants were provided with a **.fig** file and asked to open it in Figma desktop webpage or Figma mobile app.

This document contains quantitative results including the participant feedback, task completion success rates, ease or difficulty of completion ratings, errors, and recommendations for improvements.

The participants were asked to complete these tasks by interacting with the **.fig** file by click/tap actions:

1. Change profile information
2. Acess self-work-calendar in 4 weeks
3. Check in/out work shift
4. View daily tasks are assigned in 4 weeks
5. View collecting route according to work day
6. View current position and direction to the next MCP
7. View assigned vehicle on any days in 4 weeks

4. Results

Task Completion Success Rate

Most tasks had a completion rate of 100%. Except for Task 1 (Change profile information) and Task 3 (Check in/out work shift), no participants could successfully complete them.

Task Completion Rates

Participant	Task 1	Task 2	Task 3	Task 4	Task 5	Task 6	Task 7
1	-	✓	-	✓	✓	✓	✓
2	-	✓	-	✓	✓	✓	✓
3	-	✓	-	✓	✓	✓	✓
4	-	✓	-	✓	✓	✓	✓
5	-	✓	-	✓	✓	✓	✓
6	-	✓	-	✓	✓	✓	✓
Success	0	6	0	6	6	6	6
Completion Rates	0%	100%	0%	100%	100%	100%	100%

Task Ratings

After the completion of each task, participants rated the ease or difficult of completing the tasks for three factors:

It was easy to find this information from the main menu.

While searching for this information, it was able to keep track of visited pages.

It was able to accurately predict which section of the application contained this information.

The 5-point rating scale ranged from 1 (Strongly disagree) to 5 (Strongly agree). The average point for each factor is considered as agreed if it is >4, and disagreed if is <3. The range between 3 and 4 is considered as controversial.

Factor / Task	Ease – Finding info	Location in app	Predict Section	Factor Average
1 – Change info	0	0	0	0
2 – Acess calendar	4.5	4.3	3.8	4.2
3 – Check in/out	3.8	2.5	1.5	2.6
4 – View task	4	3.8	3.5	3.8
5 – View route	4.2	2.5	2.8	3.2
6 – View position	3	3	1.5	2.5
7 – View vehicle	3.8	3.5	3	3.4
Total average	3.3	2.8	2.3	2.8

Only Task 2 has a high rate of agreement (4.2). Most remaining tasks have the rate from controversial to disagree (<4). Task 3 and 6 have a significantly low average point (<2) for Predict section factor, which also has the lowest average point among three factors.

5. Errors and Recommendation

Errors

Error	Happened at task…	Number of participants had
No change profile information page	1	6

Recommendation

Add range of date for each week

Confirmation prompt when user check in/out.

Bring the view position function closer to the main page

Add contact method

Add change profile information method

6. Conclusion

Most participants found the MVP1 to be clean, understandable and can be mastered with ease. The functions provided in the MVP1 have fulfilled their intents and may serve well in the waste management process.

However, some functions are still misleading and cannot be acessed with few steps as they should be. The lack of some essential functions would lead to confusion and limit the potential of the app to adapt the industrial demands. Implementing the recommendations and continuing to work with users will ensure a continued user-centered website.