

# Design of a generic mobile application prototype for electric Mobility as a Service (eMaaS) that focuses on enhancing user experience (UX) and user interface (UI)

## Public Summary

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This report presents the results of the final assignment to obtain the BSc. in Industrial Design Engineering degree at the University of Twente. This was an internal research assignment. The main objective of the assignment was to design a generic interactive eMaaS application prototype focusing on enhancing the user interface (UI) and user experience (UX) of the application. The ultimate goal of the assignment is to contribute to the integration of eMaaS into society’s mobility habits by increasing user satisfaction when using this kind of service. The main problems presented are the low rates of integration of eMaaS and user interface problems affecting user satisfaction and demand. The assignment is focused on the challenges that can be addressed via mobile application platforms.

To further explore the assignment’s goal, the main research question that guided this assignment focused on finding ways to enhance the UI and UX of the application. The sub-questions determined for the assignment were focused on learning more about the details and challenges of eMaaS, improving mobile applications, and achieving user satisfaction. Research and analysis on current e-mobility providers, functionalities, and user reviews of the existing e-mobility mobile applications revealed satisfactory and non-satisfactory aspects of current providers and their applications. The results helped to define the design requirements for the application prototype. Therefore, an outline for the functionalities of the application prototype was shaped based on the design requirements.

Based on the design requirements defined and style ideations made, three design concepts are designed for the overall style of the application prototype. (Figure 1) Concepts ideation helped to determine a style for the application prototype and aimed user feelings. The functionalities of the application prototype were further explored and ideated on considering the design concepts and aspects of applications of current providers. After the evaluation of the three concepts and functionalities, Concept 3 (Mixed) was chosen. The software Figma is used for interactive application prototyping and for user testing (See pages of the prototype in Figure 2 and 3).

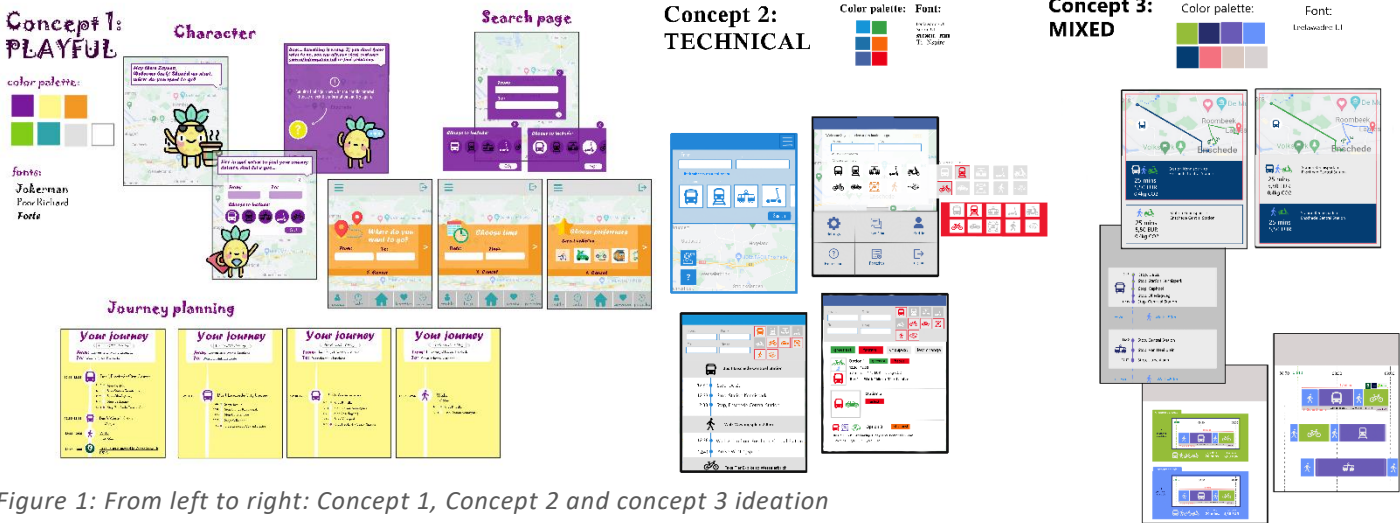


Figure 1: From left to right: Concept 1, Concept 2 and concept 3 ideation

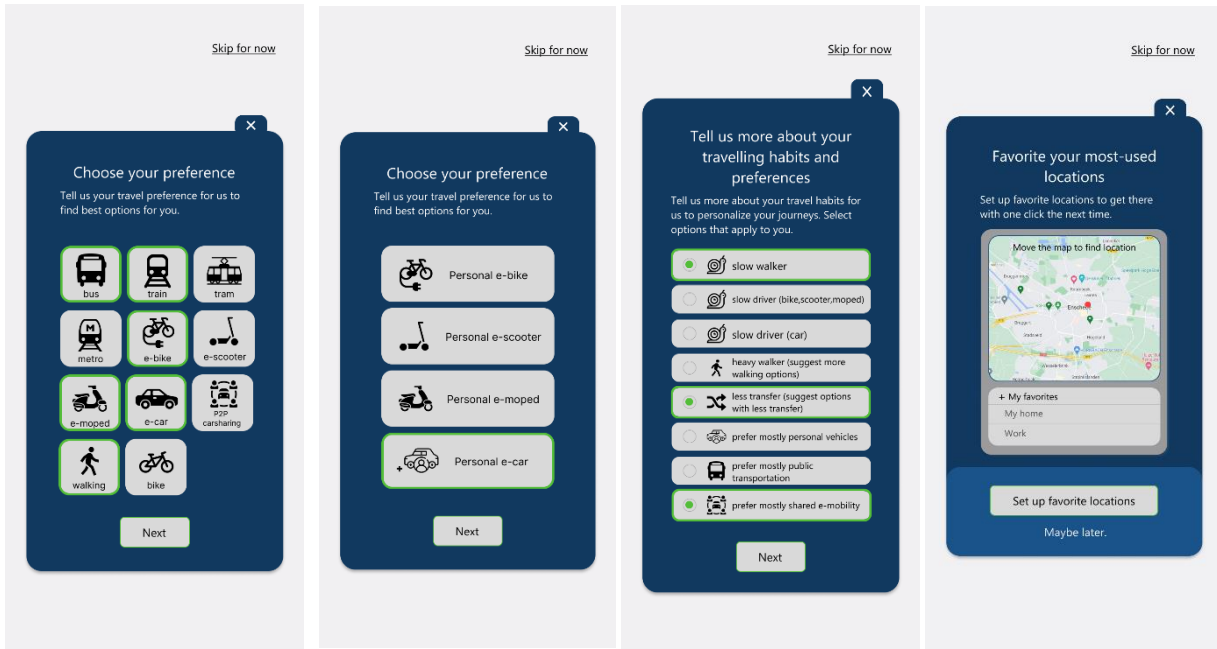


Figure 2: Setting up preferences and traveling habits pages from the eMaaS application prototype

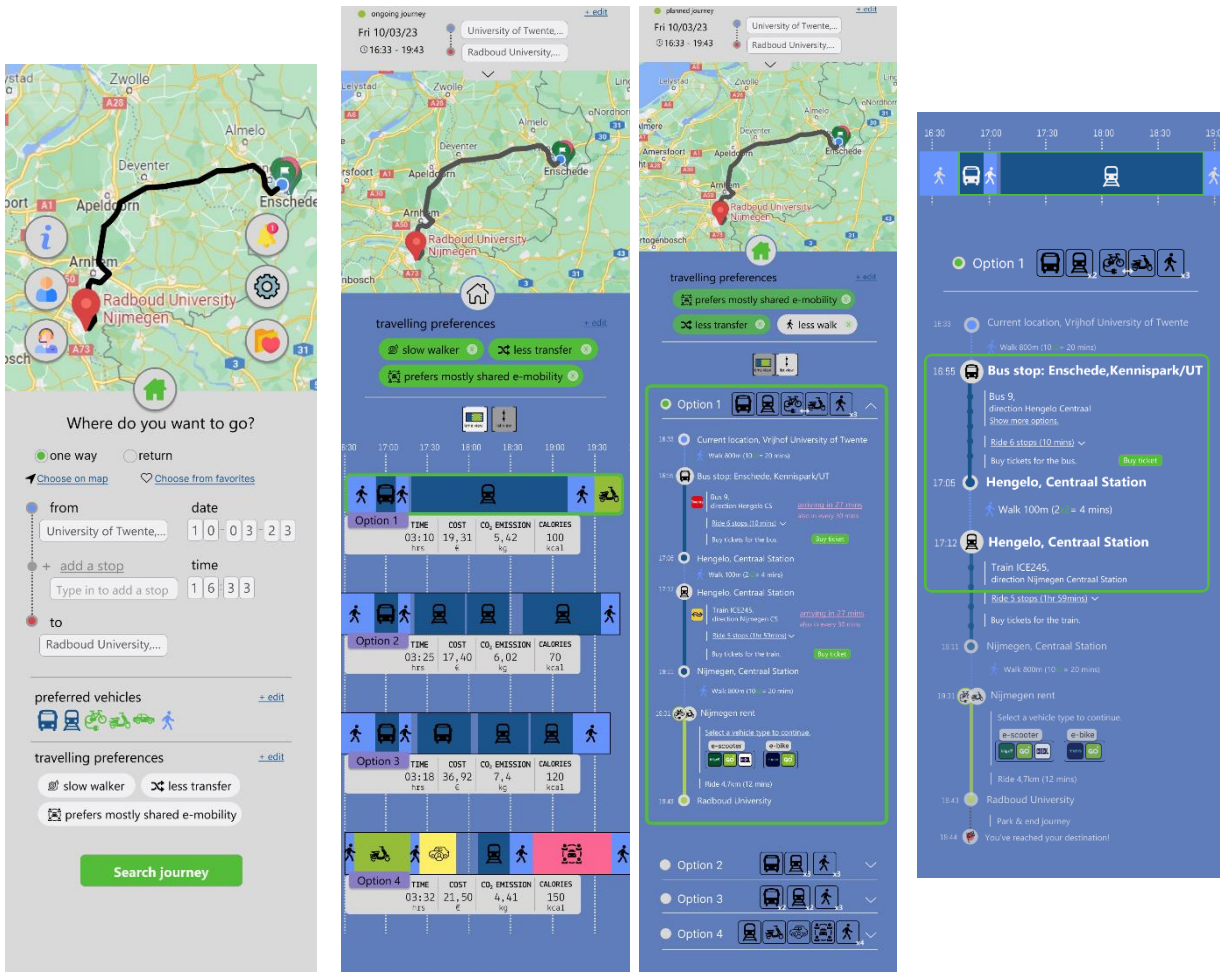


Figure 3: (from left to right) Homepage, journey planning options time-view (1), journey planning options list-view (2) and ongoing journey pages from the eMaaS application prototype

The main goals of user testing were understanding the users' interests, feelings, desires, and preferences towards the eMaaS application prototype made and the general attitude towards eMaaS concept. Two types of tests were conducted: user testing interviews and an online survey. User testing interviews were conducted as one-to-one interviews with a small group of participants for them to use and test the prototype. During testing, their interactions, emotions, and behavior were observed and documented. Their interactions with the user interface were also recorded for further analysis. During and after testing, user reviews and feedback were collected. The online survey aimed to reach a larger group of users so their opinion and comments based on the looks of the pages of the application prototype could be obtained via the survey questions. The questions aim to understand users' understanding and feeling towards the pages of the prototype on how they look and what functions they can see. The survey was filled out by 66 participants. Both the user testing interview and survey results revealed that the prototype succeeded in usability, experience, and content aspects. However, it needed to improve on the aspects of engagement, theme, and font size. Recommendations were given for the further improvement of the designed eMaaS application prototype about the aspects detected lacking during user testing and for future work as the interest of the participants on the eMaaS application concept.