Summary

Hereby, my graduation project for the Master's program in Strategic Product Design on the TUDelft. The research has been formulated from my interest in both customer-centric design and the automotive industry.

This research started with the aim to introduce short-cycle feedback loops in pre-development departments to enable customer feedback in the early development stages to enable designers and developers to validate their product concept. The departments that will be targeted are the UI/UX pe-development departments of BMW, to be exact teams and departments that work on Natural User Interactions. The BMW Group introduced the term BMW Natural User Interaction (NUI)*, at the Mobile World Congress 2019 in Barcelona. The NUI combines advanced voice command technology, gesture control and gaze recognition to enable more real-world interaction between the user and product. Earlier gained knowledge and insights enabled me to see many benefits of implementing customer feedback as early as possible. To analyze the possibilities of customer feedback, literature research was combined with a company analysis. From an outsider's perspective, it seemed that the automotive industry is a bit careful and hesitant to involve customers in development processes. Therefore, the motivation of this industry could still benefit from novel customer feedback implementations. Both the customer side and the business side, benefit from streamlined customer feedback implementation in product development. Therefore, this research aims to validate if customers would sense an ability to influence the end products of BMW.

The company analysis started from researching how departments function and interact with each other, to their development processes and finally the data gathering analysis. From the company analysis, the assumption of potential for early customer feedback was validated.
From this point onwards a search for suitable customer feedback methods was started, after considering and analysing many combinations from contemporary methods with new user interaction technologies, a 3-step method was designed to test my proposed VUI IN-Car method.

I am proud to say that promising results have been found from the 3-step test method. Interacting with a speech interaction while giving feedback on speech functions, results in a higher amount of creative ideas from participants. And adding a more realistic context to this setup results in more creative input. These results were compared to a contemporary questionnaire with the same content. The detailed steps I took will be explained in this report.

Design and implementation of a strategy that introduces customer feedback in the early pre-development phase of Natural User Interactions in BMW car products.

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