Public summary

Nowadays, more and more people are getting mobile with their bicycle. Due to rising environmental awareness and an expanding infrastructure, choosing a bicycle to get to a destination is becoming tempting. However, even though some might want to travel with their bicycle, they are restricted due to not having the right means to transport the load they need to carry. One of these groups are craftspeople and hobby crafters that, because they are restricted by the tools they have to transport, mostly choose a car as their choice of transport. This report was set up for this reason.

The objective of this report was finding a convenient and mobile solution for an eco-friendly transportation of tools. Eco-friendly means that a solution needed to be found for a specified target group that enables them to transport tools by bicycle. However, it had to be ensured that a possible solution guarantees the safety of the environment and the user itself. Therefore, the main research question was oriented towards the feasibility of a solution that enables a convenient and mobile transportation of Wera tools by bicycle.

To find a solution for this problem, the Double Diamond design method was used to come up with a solution that had a human-centred focus. This method consisted of four phases, of which each result helped progress the next phase. The four phases were: Discover; Define; Develop and Deliver.

Discover phase

In the Discover phase, the company and the design problem were examined. Here, Wera's vision on broadening their horizons was described and the core of the problem was defined. This problem was the need for an eco-friendly and safe solution of tool transportation for craftspeople and hobby crafters.

Define phase

In the Define phase, requirements connected to the problem were defined and a PACT Analysis which focuses on the target group and existing product solutions, was conducted. The target group, which consists of craftspeople and hobby crafters, were examined and described in terms of their activities and their current contextual situation and motivations. At the end of the Define phase, a company research was performed on Wera's overall style and their pre-existing product line for tool transportation.

Develop phase

With these results in mind, the Develop phase concerned itself with finding plausible ideas that could help to solve the problem and fulfil the beforehand defined requirements. These ideas were based on results of previous phases and are focused on the possibilities and limitations of transportation by bicycle. It was determined that all of the ideas would be oriented towards the form of a bag. This way, three concepts were generated through the synthesis of previous ideas, which resulted

in concepts that are all similar to bags but differentiate in the way of attaching the bag to the bicycle. These different ways of attaching also resulted in secondary functions of how the bags are being transported off the bicycle. At the end of the Develop phase, these concepts were compared and assessed with the requirements, resulting in one final concept.

Deliver phase

The final concept with a representational prototype are presented in the Deliver phase. Details about the material and production process of the concept were defined here and how the overall solution works was explained. Validating this concept based on the requirements showed that there is room for improvement, but it was perceived as a plausible solution.

At the end of the report, the results of the process and the design itself were discussed. Here, it was reflected that the design method worked well for this assignment, as a solution could be achieved within the given time span. The evaluation of the research resulted in determining that the biggest challenges were a shift in focus during the project, the creation and consideration of every aspect for a survey and the creation of a prototype during a pandemic. However, in the end, a satisfactory result to the company could still be delivered.

As a result of this research a concept and a representative prototype of this concept was delivered. These components were able to answer the beforehand defined research question positively, since a feasible solution for convenient and mobile tool transportation could be found. However, what needs to be kept in mind, is that before the implementation of this concept in form of a product, some further research needs to be conducted, especially in terms of verification with the target group, cost estimations and production processes.

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