Summary of the BSc thesis for Thuiswerktafel

In the shifting environment of the workspace, remote work is getting increasingly more common, leading to an increase of the need for convenient home office setups. This is what the Thuiswerktafel plays into, with their product that can transform the living room into home office, creating ergonomic and productive workspaces in the comfort of one's living room. This summary provides a comprehensive overview of the Thuiswerktafel redesign report, a study performed to identify and propose solutions to the challenges and opportunities related to the scalability and usability of the product. By examining the current product and indicating points of improvement, the main focus of the project is determined, focussing on the monitor attachment and working tray mechanism, as well as the ease of assembly such that it can be done by the users themselves. The key factors for the product that have to be kept in mind when the solutions are proposed in the ideation phase, consisting of both new and existing solutions to be applied, are aesthetics, safety, ergonomics and costs.

To gather the relevant knowledge for the project, the first phase, the analysis, focussed on gaining insight into the product and relevant related information. As a result from this, the list of requirements is composed to guide the next ideation phase. The ideation resulted in three concept directions, each with different solutions to the main initial points of improvement. Based on a decision matrix and rational factors, a concept direction is selected. For the monitor attachment, the concept which utilizes a slat board is chosen, which comes down to T-profiles being milled horizontally, integrated in the insides of the rotating tabletop for monitor attachment. This provides a thin yet flexible solution for the monitor attachment, conveniently allowing users to position the monitors to the tabletop. For the rails system, a standard linear rails can be used, and the redesigned hinge allows users to easily adjust the positioning to assemble the hinge to the table. Optionally, users can add a gear/linking system to combine the action of opening or closing the table with the movement of the working tray, choosing to automatically extend or retract the working tray, or leaving the working tray in the stationary front position for protection of the monitors. This is up to the user to decide, as it largely depends on the dimensions of the hardware that is used. The assembly process is simplified by making the positional adjustments easier where necessary and providing more accurate guidance for the user with the use of threaded inserts. Allowing the user to assemble the table themselves reduces the costs of the product and allows the table to be sold via different channels, being able to expand the market and reach a larger audience. The easier assembly also has the advantage of being more sustainable, since parts can be easily replaced, leading to an extended life of the table.

During the detailing phase, the concept is modelled in CAD, leading to a more accurate vision of how the elements can be realised. This resulted in a partial redesign of several components, resulting in a product that mainly requires some minor finishing before it can be taken on in the testing phase. When prototyping the redesign, the features that will be applied to the final design can be selected, as it is not required to apply all the redesign propositions. The monitor attachment, rails system, linking motion and assembly can be applied separately, allowing the freedom to select the optimal configuration.

In the end, the redesign of the table will create a greater user satisfaction, while implementing several cost-reducing principles and allowing the product to be more customisable and possible to be positioned more flexibly by allowing sales through different channels.