

# The design and development of a testing prototype for a tea brewing accessory.

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There are many factors which influence the taste and strength of a cup of tea thus, it is often hard to consistently replicate the “perfect” cup of tea. WeLLDesign, a Utrecht based industrial design company which specializes in the health, living and food sectors (Over Ons - WeLLDesign, 2015), along with a separate 3<sup>rd</sup> party client, have set out to solve this issue by developing a product which alerts users when a cup of tea has reached the user’s optimal conditions of taste and temperature. While a base technology for the product was envisioned by the client, further development, testing, and casing design was required. To that end, this project focused on the development of a testing prototype to act as both a proof of concept and a tool for further development and commercialization. Challenges related to this project included (but were not limited to): electronic control, miniaturization, housing design, moisture tightness and user experience.

The process through which this project was completed saw the division of fourteen workweeks into five overlapping and interdependent segments (Figure 1). This division allowed for an iterative design process, with a research phase followed by three stages of prototype development and a final phase for conclusions and production considerations. Each phase was designed to end with the definition of points of improvement or development to act as focus points for later stages.

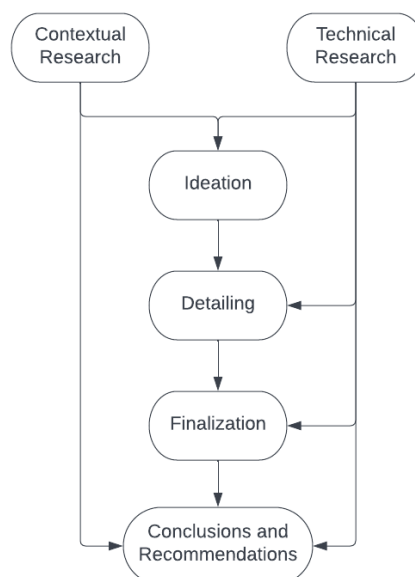


Figure 1: Project Structure

Throughout the research phase, contextual user and stakeholder research was performed, utilizing both primary research in the form of interviews and focus groups, and secondary research through papers and internal documents. This research resulted in the definition of primary and secondary stakeholder requirements which guided development and were later used to evaluate the success of the prototype. Contextual research was followed by a series of relevant technical tests to gain a full understanding of the underlying technology, its limitations, and its areas for improvement. The findings from this research phase were the basis, not only for the ideation phase which directly followed, but for all subsequent segments of the project. The ideation, detailing and finalization sections built upon each other, using iterative design methods such as basic parametric CAD modelling and 3D printing to efficiently and effectively evaluate changes in both aesthetic and functional design. Though these design phases, six initial aesthetic concept directions were expanded, and later refocused, to produce the final prototype. Along with the aesthetic design, these phases also concentrated on the development of the technical design of the product, both through electrical components and with software development. The combination of research and iterative design led to the successful development of a functional testing prototype which the client aims to use for further testing and development towards a fully commercialized product. Along with the functional testing prototypes, the conclusion of this project explores possible future improvements and production methods. With further explorations of production price estimates and potential target groups, suggestions were made to help guide the commercialization process.

## Bibliography:

- Over ons—WeLLDesign. (2015, July 21). <https://welldesign.com/en/over-ons/>