Conceptual user interface design for the analysis of running techniques
Roessingh Research and Development

The Runner Assist is a run-tracking technology currently in development at Roessingh Research and Development and collaborating companies, and can collect information on the user's running technique. The aim of this thesis is to research the user's desires, and to develop a conceptual user interface for the Runner Assist system based on these desires. Therefore, the formulated main question is:

How can a conceptual user interface for the Runner Assist be designed with respect to the user's desires?

To answer this question, it first needs to be established what data is useful to the user, and at which moment. To gain knowledge on this subject, a market analysis is executed, experts are consulted, and a questionnaire is send out. The market analysis helps in determining frequently used metrics, categories, and icons. It is a dominant factor in deciding which primary data, that other products present, should be presented by the Runner Assist too. The experts and questionnaire responses on the other hand provide indications as to which novel data, that is Runner Assist-specific, should be presented. It is concluded that during running the data should be limited to a few standard metrics, as opposed to after running when runners appreciate having lots of data available. The questionnaire respondents are suspected to not have understood the significance of the novel data due to the use of jargon. Therefore expert opinions and later research lead to the selection of novel data, which are impact on different parts of the body and foot strike pattern during running. After running, all data can be shown as long as the presentation is understandable.

After learning what data should be presented and at which moment, the next challenge that arises is how to present this data to the user. On the one hand this sub-question concerns the general aesthetic of the user interface. The style for this is determined by analysing what the product should convey, and basic elements are selected to fit this style. On the other hand, the data itself needs to be presented correctly. Useful presentation of the data is researched by testing preferences through user discussions. Runners are presented with several visualisations, and the results of the ensuing discussions are used to develop data presentations for the conceptual user interface. One important outcome is that the larger part of runners prefer visual presentations as opposed to textual or numerical, especially during running. Furthermore, during running the cognitive load should be kept low. The preferred type of presentation by a runner, visual or textual, is also the type that they consider to cause the lowest cognitive load. After running, runners appreciate seeing numbers and text as well as visuals.

To conclude, a conceptual user interface for the Runner Assist is designed with respect to the user's desires by keeping data presented during running limited, and by providing most data postliminary. Moreover, during running the cognitive load should be kept low, but a single type of presentation that promotes this for every runner cannot be distinguished. After running, runners appreciate a combination of numbers, text, and visuals.