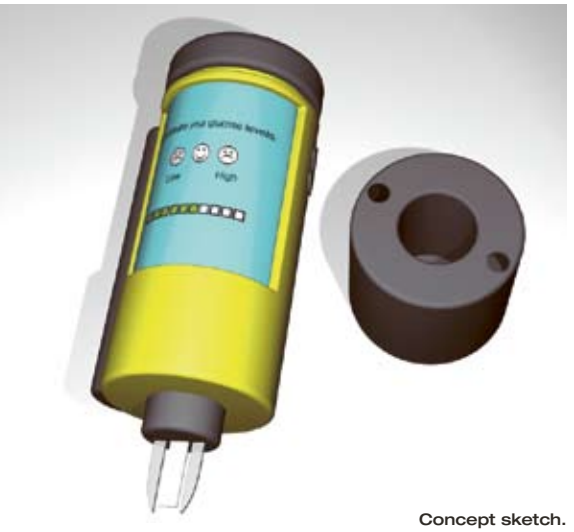
Abbott
Re-thinking the user interface of blood glucose monitoring

The project is a global collaboration between LTU and Stanford University. Four students from each university formed the global design team, whose goal was to generate innovative solutions and create a concept for an intuitive blood glucose monitoring system for children with diabetes.



Concept sketch.

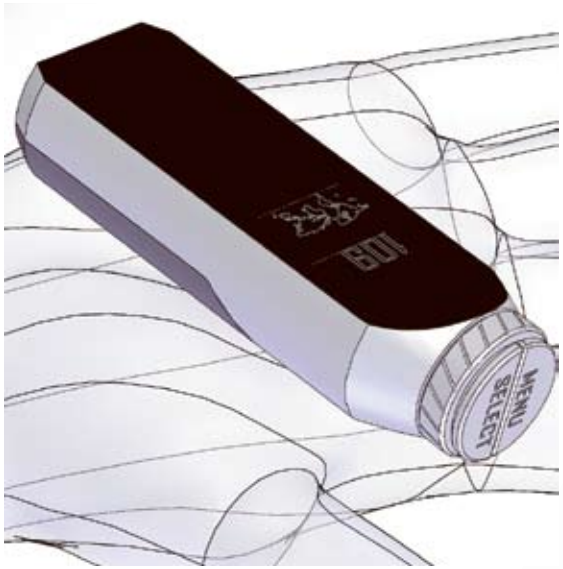
Background

The project was initiated by Abbott Laboratories and performed with their close collaboration. Abbott Laboratories, based in Alameda, California, is one of the largest companies in the diabetes care sector. Today's market is moving towards usability and design.

Assignment

The assignment was to re-think the user interface of blood glucose monitoring systems, including generating design concepts and prototypes that consider mechanical inputs, the graphic design, human factors and data management.

Abbott Laboratories sells their products worldwide – an important consideration in the design



Concept sketch.

process. Another difficulty was the large spectrum of diabetics, ranging from children with diabetes type I to elderly people with diabetes type II.

Design process

Since large distances separated the team, the cooperation relied greatly on communication technology. The work was conducted with the Sirius master plan and Stanford's deadlines side by side. Based on the initial need finding, the team chose to concentrate on child diabetics.

Focus of the process was on need finding to understand the user's view of glucose meters and diabetes. Interviews and surveys were used to collect knowledge and opinions from diabetics and healthcare professionals, providing an understanding of the disease and everyday problems related to diabetes. The knowledge was transformed into software features, interface solutions and several design concepts.

In February, two Stanford group members visited Luleå and the LTU members visited Stanford in April.

To achieve collaboration over large distances, videoconference systems, instant messaging and shared virtual working environments were extensively used.

Engineering software, such as Alias StudioTools and Unigraphics NX3, was used simultaneously with traditional techniques like clay modelling and sketching to illustrate concepts throughout the design process.

Result

The decision regarding the final concepts was done after meeting Abbott Laboratories representatives in California. The result is a blood glucose monitoring system that targets primarily children followed by their parents during the transition phase when child diabetics begin to take responsibility for their own care. Knowledge about conditioning and positive reinforcement was implemented into a medical device with the purpose to improve the overall diabetes performance of children. Several features were included to improve the children's knowledge of their disease. The global design team created a design that considers children and their parents.

The Team: Ihab Daouk, David Yao, Karthik Manohar, Maria Marklund, Elin Karlsson, Maria Hedin, Erik Mossing. Nick Reddy is absent.