

# Redefining the sleeping experience

There has been minor development of new technology in the field of spring units. The first spring unit, made with Bonnell springs, was introduced in late-19th century and over 100 years later, only a few innovations have emerged.

What will the next generation of spring units look like?

## Background

IKEA has developed a wide range of mattresses throughout the years. They previously had a basic range of mattresses as a complement to the bed frames. Their mattresses are today sold worldwide and spring units are one of the main components. It is and always has been a goal for IKEA to exceed the expectations of their customers regarding comfort, quality and price. This is where we, the Sirius IKEA Comfort group, come in.

## Assignment

The assignment from IKEA of Sweden AB was to develop an IKEA-unique spring unit for mattresses. The new spring unit should have improved comfort and quality and permit a cost reduction.

## Analysis

What is comfort? Very little research has been done on sleep and sleeping quality because the sleeping environment is



considered to be private. Hence, to find out more, a mattress blind test was performed. The research done by the SIRIUS Comfort group showed that comfort is perceived to be rather individual. Since a huge quantity of mattresses will be produced, manufacturing and storage are also important factors. Is it possible to satisfy all the different needs in one spring unit?

The results from the Needfinding served as a basis when specifying the design requirements. Design concepts were generated through various brainstorming sessions and other creative methods, and mock-ups were built to illustrate and evaluate the characteristics of the different concepts. After several evaluation steps based on the design requirements, the number of concepts was reduced in preparation for concept selection in consultation with IKEA.

### **Results**

After the selection, three of the concepts remained for the final stage, where digital models of the design were evaluated in a virtual environment and real live tests were performed to investigate the durability of different materials used in the concepts.

At the end of May 2007, the complete and optimized design concepts were presented to IKEA of Sweden. It is not yet known if this is the next generation of spring units, but you might be sleeping in a bed partly developed by the SIRIUS Comfort group in the future.

The close cooperation with an international company such as IKEA has provided the students with valuable insight into the complexity of a product development process.

