

Dissertation title:

Functional-based Approach for Idea Generation of Hybrid Products in the Early Phases of Product Development

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In the rapidly changing business environment, companies do not have many opportunities to break away from competition. In these times of uncertainty, companies can only exist if they recognize the needs of the market at an early phase and have the skills, structures and resources to adapt to these changing conditions. Companies are forced to bring innovations regularly to the market. The shortening of product life cycles, rapidly successive technological change, global competition, as well as political and social changes are just four of the biggest challenges faced by companies.

A possible solution for companies to meet these challenges is to act no longer only as a pure product provider, but to evolve towards a solution provider. This can be done by offering hybrid products - a combination of products and services. Thus, the offer is no longer restricted purely to the product and a holistic view is taken, which is particularly important in innovation management.

The aim of this research is to design an approach for the systematic support of idea generation for hybrid products in the early phases of product development. The approach aims to bring together different departments by a common language, thus utilizing the internal knowledge within the company. The procedure is based on the problem solving process, and is based on the idea to analyse intensively the problem itself. By using the functional language that is based on the functional analysis according to VDI 2803, a simple language for the approach is implemented.

To summarize, it can be concluded from the application in two companies that the developed approach can support companies to generate ideas for hybrid products. The results of the survey, which was conducted with all participants, show that all would use the approach again and see the system to be very helpful.

