

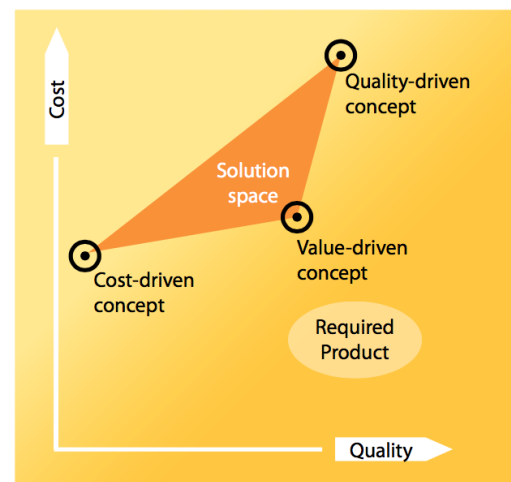
<b>Research theme</b>	Design Methodology
<b>Research title</b>	Value-based feasibility: Case study on a car interior
<b>Researcher</b>	Karlo Finkers
<b>Research period</b>	From sept 2015 to april 2016
<b>Company</b>	University of Twente/ gCar B.V.
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## Background

Several worldwide established product design methods have been developed in order to guide designers, typically starting with requirements or constraints, leading to solutions or concepts. It is quite common in industry and education to aim for either quality, low-cost or high value for money during a design process. But what if it is suspected that a solution within the given constraints does not exist? As there theoretically exist an infinite number of possible designs solutions, this assumption is hard to prove.

## Assignment

A generic, exploratory, value-based method is composed that enables the composition of concepts that describe the boundaries of the solution space in terms of customer satisfaction and cost for a given set of constraints. Three concepts mark out the hypothetical boundaries of the solution space: a customer satisfaction-driven, cost-driven and a value-driven concept. The purpose of the method is to investigate whether the solution space and the required solution overlap. As an addition the method provides insight into the effect that changing one or more constraints has on the solution space.



The method is applied in a case study on a car interior. gCab was a taxi company that distinguished itself in the market using electric micro cars. This made their services relatively cheap and less polluting. The company decided to develop a vehicle itself because of dissatisfaction with their purchased micro cars. A couple of constraints had to be respected, such as a batch size of twenty, production in the Netherlands and the use of custom-made moulded parts. Prices for the car should start from € 6500 excl. batteries and the budget for the interior was defined at € 1400. The design of this interior was taken as a case for applying the method developed.

## Results

The conclusion of the case is that it is unlikely that the relatively low budget for the interior will be met with the given constraints. Even after the removal of some expensive constraints it does not seem likely that the solution space will overlap with the required product.

Although the method was supporting in the task of exploring the solution space, it is hard to measure or quantify the effect of the support, and to validate the conclusion.

## Personal experience

I enjoyed that I was asked to work for projects in the automotive industry as a direct result of the master assignment.