ABSTRACT

During product development, ideas are narrowed down to a single one by the designers in order to satisfy the customers’ needs. This process is called concept selection and is crucial to the development of new products because, from this point onward, the design team is committed to a concept whose modification implies delays and additional costs.

Decisions made during the concept selection phase are often difficult due to the uncertainty caused by the lack of objective data. However, it is possible to reduce this uncertainty assessing each concept’s expected costs and benefits.

Medical devices, before entering the market, are scrutinized by several agencies around the world to assess their clinical- and cost-effectiveness. In order to reduce the uncertainty associated with concept selection, the parameters evaluated by the multiple agencies should be used to support the idea to pursue. However, as that data is not available yet, in this paper, several parameters are identified to evaluate each concept and, for each metric, the most adequate measurement technique is described. This paper also presents a specific implementation of the design process for a new stent-graft.