Customer needs analysis: a prerequisite for effective Axiomatic Design

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Target Audience
Designers of products, processes, software and business strategies.

Value Proposition
A common problem observed in developing working axiomatic design processes to solve product, process, software and business problems is that designers were working with inaccurate assumptions about customer needs and related functional requirements. This tutorial instructs practitioners on a systematic approach to analyzing customer needs and developing the functional requirements that will maximize the probability that the proposed solution will meet actual stakeholder needs.

Abstract
Axiomatic design identifies the first domain as the Customer Needs domain, and argues that the Functional domain is mapped from these customer needs. Most project problems and related delays and cost overruns have their roots in erroneous assumptions about customer needs. How does a designer reliably define the customer needs domain in order to initiate an optimal Axiomatic Design requirements decomposition?

This tutorial session reviews a systematic process, using case studies, that is deployed in several Fortune 200 firms to solicit and analyze customer needs and then to convert these needs to functions for functional decomposition. The steps covered are:

- Identifying stakeholders
- Soliciting needs
- K-J analysis (Affinity grouping) of needs
- Prioritization of need categories
- Employing a House of Quality (HOQ) to convert needs to functions with measures
- Developing top level functions