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Decision-based design. Integrating consumer preferences into engineering design. (English)

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Publisher's description: Building upon the fundamental principles of decision theory, Decision-Based Design: Integrating Consumer Preferences into Engineering Design presents an analytical approach to enterprise-driven Decision-Based Design (DBD) as a rigorous framework for decision making in engineering design. Once the related fundamentals of decision theory, economic analysis, and econometrics modelling are established, the remaining chapters describe the entire process, the associated analytical techniques, and the design case studies for integrating consumer preference modeling into the enterprise-driven DBD framework.Methods for identifying key attributes, optimal design of human appraisal experiments, data collection, data analysis, and demand model estimation are presented and illustrated using engineering design case studies.

The scope of the chapters also provides: * A rigorous framework of integrating the interests from both producer and consumers in engineering design, * Analytical techniques of consumer choice modelling to forecast the impact of engineering decisions, * Methods for synthesizing business and engineering models in multidisciplinary design environments, * Examples of effective application of Decision-Based Design supported by case studies, * Guidance for computer implementation of the methods presented using open-source software tools.

No matter whether you are an engineer facing decisions in consumer related product design, an instructor or student of engineering design, or a researcher exploring the role of decision making and consumer choice modelling in design, Decision-Based Design: Integrating Consumer Preferences into Engineering Design provides a reliable reference over a range of key topics.

MSC:

90-02	Research exposition (monographs, survey articles) pertaining to operations research and mathematical programming	Cited in **1** Document
90B06	Transportation, logistics and supply chain management	
90B50	Management decision making, including multiple objectives	

Full Text: DOI