New Product Development with Dynamic Decision Support

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Abstract:
The development of new and improved management methods for new product development is important. Existing methods suffer from a number of shortcomings, especially the ability to deal with a mixture of quantitative and qualitative data. The objective of this study is to apply decision support techniques (especially Bayesian Networks) to the area of new product development management in order to address some of the shortcomings. The research approach is one of decision structuring and modelling. A three-step decision structuring framework is used to develop a conceptual model, based on a Bayesian network, to support new product development management. The result is a Bayesian network that incorporates the knowledge of experts into a decision support model. It is shown that the model is requisite because it contains all the essential elements of the problem from which a decision maker can take action. The model can be used to perform what-if analysis in various ways, thereby supporting the management of risk in new product development. This research contributes not only a model to support new product development management but also provides insight into how decision support, and especially Bayesian networks, can enhance technology management methods.