

A Group Decision Support System Framework for the Optimal Selection of Services From Assortments

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Abstract: Product rationalization or “decomplexing” of a multitude of services offered by an organization is vital in minimizing hidden complexity costs and maximizing opportunities. Additionally managers would want to assign the organization’s finite resources from non-revenue generating streams to revenue generating. This problem generally spans multiple decision makers with varying personal preferences and constrained resources with problems on cannibalization effects and over-rationalization. Furthermore, existing methodologies mainly focus on decomplexing physical products. Hence, this paper proposes a Group Decision Support System (GDSS) framework using the Analytic Hierarchy Process (AHP) and Integer Linear Programming (ILP) to assist decision makers in rationalizing service alternatives. Compared with traditional product rationalization methods, the proposed methodology has three distinct characteristics. First, the proposed GDSS addresses the rationalization of service products. Second, the weights of evaluation criteria are determined using Group AHP, addressing the problem of multiple decision makers while reducing decision bias and adding objectiveness. Finally, the ILP is formulated which takes in the results of the group AHP to reduce occurrences of undesired cannibalization effects and over-rationalization of assortments. The framework is applied in a local telecommunications company for validation.

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