

Managerial Insights Statement

for

Integrated Procurement Planning in Multi-division Firms

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In the strategically important area of procurement, enterprise integration has enabled multi-division firms to leverage company-wide purchasing power by coordinating the procurement policies across divisions. To take advantage of corporate volume discounts, firms have established corporate procurement organizations that are responsible for developing tactical plans specifying the vendors that each division must use. Such supplier assignment decisions, if based solely on maximizing the vendor discounts, can result in high order management costs for divisions. Motivated by the experience of a large industrial products manufacturer, the authors propose a new integrated procurement planning model that incorporates both the firm's annual net purchasing costs, after discounts, and divisional order management costs. This model provides a unifying tactical planning framework for procurement managers. Since the large-scale optimization problem is very difficult to solve using general purpose solvers, the authors develop an advanced polyhedral solution approach based on theoretical results and insights about the structure of the problem. Computational tests for problems with varying characteristics show that solution method generates near-optimal solutions quickly, and demonstrate that the integrated model can provide significant cost savings compared to autonomous sourcing decisions by individual divisions or using manual decision rules for supplier assignment.