

## Optimizing Supply Chain Collaboration Based on Agreement Buyer-Supplier Relationship with Network Design Problem

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### Abstrak

In recent years, the rising competitive environment with shorter product life cycles and high customization forces industries to increase their flexibility, speed up their response, and enhance concurrent engineering designs. To integrate these prospects, supply chain collaboration becomes a pertinent strategy for industries to strengthen their competitiveness. The network design problem is used to implement supply chain collaboration. In the buying and selling process, sharing information between buyer and supplier are important to obtain a transaction decision. The optimum supply chain profit can be identified by mathematical model of network design problem. The Mathematical Model takes into consideration the uncertainty in negotiation of supply chain, transportation problems, and location allocation of products from supplier to buyer in the planning based on the time value of money. The results show that the model can be used to optimize the supply chain profit. The supplier gets a profit because income were received in the initial contract, while the buyer profit comes from lower pay.