ABSTRACT

The present trend in supply chain performance measurement demands integrated approach in developing models and strategies that would provide benefits to all the firms along the supply chain. Industry specific or functional specific performance metrics are of narrow scope of improving individual organizational performance which lack in the concept of integration of supply chain elements for the benefit of all entities along the supply chain. In the present research work, maximizing overall delivery performance (operational perspective), minimizing penalty to the entities of a supply chain by finding optimal payment and collection periods that would minimize cash-to-cash cycle time, studying the effect of inventory turnover ratio on cash-to-cash cycle time (financial perspective) and developing framework to assess shareholder facing performance metrics (shareholders’ perspective) have been considered as objectives of research by integrating certain key performance indicators. Data required for analysis of research objectives has been collected from a batteries manufacturing firm.

To maximize the overall delivery performance, the problem is formulated as dynamic programming model and solved to find benchmark values for expected performances from different entities of batteries manufacturing firm and its supply chain. In working capital management, a linear programming model is developed and solved using TORA. The model aims at minimizing cash-to-cash cycle time as well as penalty to a firm, its suppliers and its distributors by finding optimal combination of payment and collection periods among trading partners upstream and downstream. Also, the effect of inventory turnover ratio on cash-to-cash cycle time has been analyzed in case of batteries manufacturing company. In order to provide a basis for assessing the performance of a firm and its supply chain from shareholder’s perspective, a framework is developed to measure performance indicators and graphs are plotted to analyze the results of renovation and supply chain management.