結合數量折扣型配銷需求計劃(DRP)及時窗限制車輛途程問題(VRPTW)之配銷管理模式

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摘 要

物流配銷系統，主要可分三個層級－供應商、配銷中心及零售商，為尋求整體最佳規劃，減少各階層間衝突，而導致效率無法提升；故將三層次整合規劃，使得總成本得以降低，提高物流配銷效率，進而提升產業競爭力。 本研究主要可分為四階段：第一階段為構建配銷需求規劃數學模式，模式中將導入數量折扣概念，根據每一期間各需求點之毛需求量，經由物料成本、訂購成本及存貨成本之取捨，決定配銷中心應何時訂購、訂購數量及配銷數量；第二階段將先前配銷需求規劃數學模式所求出各需求點相關資訊，輸入時窗限制車輛途程問題數學模式中，在車輛容量限制（Capacity）與時窗限制（Time Windows, TW）下，求出最佳運輸路線及車輛配置；第三階段為結合配銷需求規劃數學模式與時窗限制車輛途程問題數學模式，由於兩模式之結合，使整體多層級配銷系統規劃時考慮的更加周詳，進而降低配銷總成本；最後階段為考量問題規模龐大時，造成求解時間過長，故提出一啟發式演算法，以縮短求解時間。

關鍵詞 : 配銷需求規劃、數量折扣、時窗限制車輛途程問題、啟發式演算法。

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