

Acknowledgement

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Abstract

There is a growing consensus that reverse logistics should be regarded as a portion of business logistics as the green marketing concept emerges. A comprehensive logistics operational framework is proposed and followed by the formulation of an optimization-based model, which is proposed to deal with the integrated logistics operational problems of IT industry.

To start with, research and analyze the channels of IT industry and the relationships among members in it. Next, an integrated logistics model is formulated that maximizes total integrated logistics system operating profit subject to constraints that take into account such internal and external factors as business operating strategies and governmental regulations. The integrated logistics model, the trade-off between those objectives must be considered, is for executives to manage the integrated logistics system in IT industry.

A case study about notebooks makes it clear how the integrated logistics model is employed. Then, several sensitivity analyses have shown the rational ranges of recycle fees and subsidies; how the optimal return ratio responds to the weight. Besides, the results of scenario analyses also reveal that the current policy, governmental involvement, is better for the integrated logistics system. Finally, it is precisely on such comprehensive evaluations that this study claims that Recycling Management Fund of the Environmental Protection Administration should subsidize as much as possible, under rational consideration, to achieve a better performance in the integrated logistics system.

Keywords: Recycling; Reverse logistics; Integrated logistics system; Integrated logistics model; Multiple objectives decision making; IT industry.

摘要

隨著綠色行銷概念的興起，逆向物流逐漸被視應為企業物流的一部份。而為處理整合正逆向物流之後所面臨的營運問題，本研究將針對資訊科技產業提出一個綜合性的物流營運架構，進而構建一個最佳化的物流模式。

在確認研究範圍與目標之後，本研究先是分析現今資訊科技產業的正逆向通路結構，與整合物流系統內之成員互動關係。接著，在考慮企業的內外因素——企業的營運策略與政府的相關規定——之下，構建出一個整合逆向物流與企業物流的整合物流模式，以將整合物流系統內的營運利潤最大化。而針對資訊科技產業所發展的整合物流模式，其最大的特點與用途，即能考慮目標式之間的利益衝突與便於執行者管理整合物流系統。

在模式驗證及校估完畢之後，本研究將選擇一項硬體產品——筆記型電腦——做為本模式應用的對象，以明確地證明此模式的實用性。在此案例研究之中，吾人將分別從企業營利及環保意識的觀點出發，並透過敏感度分析與情境分析，了解整合物流系統內的營運特性及限制，以便提供系統較合適的營運策略。

從敏感度分析之中，吾人可以清楚地知道：回收清除處理費與回收清除處理補貼費的合理範圍，及最佳回收率在不同的權重之下如何反應。而情境分析主要是探討，政府有無介入整合物流系統。而由分析結果吾人意外卻合理地發現：相較於廢資訊物品外包的營運策略，現今政府（資源回收管理基金信託基金管理委員會）介入整合物流系統的政策，是較有利於系統達到最高淨利的作法。

最後，在經過本研究的綜合性評估之後，吾人提出：資源回收管理基金信託基金管理委員會在合理地考量之下，應儘可能地補貼逆向物流系統，以促使整合物流系統達到一個較好的系統績效。

關鍵字：回收、逆向物流、整合物流系統、整合物流模式、多目標決策、
資訊科技產業

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