The Study of Decision Problem in Supply Chain Network Design

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ABSTRACT

With the environment change continuously over the world, the problems that enterprise faces are more complicated. Each decision of the manager is a slight move in one part may affect the whole situation to the enterprise, and the role of the enterprise also fight alone for the self benefit, expanding to whole supply chain gradually be in the mode of cooperation to the whole benefit. When the manager faces the supply chain management design problem, he needs to consider many factors at the same time, as the cost, time, reliability…etc. However, most of managers just make decision according to their previous experience, but lack of the standard of quantity. The more complicate problem and the changed environment may blur the manager's focus. So the purpose of this study is solving the manager's difficulty while facing dynamic environment. Based on the label correcting algorithm, the study develops more elastic operation procedure, called the flexible label correcting algorithm, be used for every kind of different enterprise target, as the critical path tracing, shortest path to tracing, maximum reliability path, minimum reliability path. While making decision, managers can make decision to rely on not only their previous experience but also the objective quantity data. Finally, take outsourcing partner selection for example, developing the system embryonic form to identify the feasibility of this procedure.

Keywords : Supply Chain, Decision, Supply Chain Management Design, Flexible Label Correcting Algorithm

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REFERENCES

參考文獻 1. 中華民國產業電子化白皮書編纂工作小組編，產業電子化白皮書，行政院iAeB推動小組，2000。 2. 王信傑，在供需不確定性因素下之製造商作業規劃模式，私立淡江大學資訊管理研究所碩士論文，2002。 3. 王舜傑，無參數李克特氏模糊計分模式之研究，臺中師範學院教育測驗統計研究所，2002。 4. 吳金照，應用模糊理論於火力電廠廠址評選研究，國立台北科技大學生產系統工程與管理研究所碩士論文，2001年6月。 5. 李允中、王小璠、蘇木春編著，模糊理論及其應用，全華科技圖書股份有限公司，2003。 6. 郭崑謨，行銷管理(再版)，台北:三民書局，pp.742-753, 1990。 7. 楊必立，陳定國，黃俊英，劉水深，何雍慶，行銷學，台北:華泰出版，pp.79-97，1999。 8. 劉水深，生產管理-系統方法，華泰書局，1984。 9. 盧舜年、周坤霖，供應鏈管理的第一本書，商周出版，2003年3月初版6刷。 10. Angelica L. and Giovanni S., Shortest Viable Hyperpath in Multimodal Networks. Transportation Research Part B, Vol.36, No.10, pp.853-874, 2002. 11. Angelica L. and Giovanni S., Shortest Viable Path Algorithm in Multimodal Networks. Transportation Research Part A , Vol.35, No.3, pp.225-241, 2001. 12. Chen, C. T., A Fuzzy Approach to Select the Location of the Distribution Center. Fuzzy Sets and Systems, Vol.118, No.1, pp.65-73, 2001. 13. Chopra, S. and Meindl, P., Supply Chain Management: Strategy, Planning and Operation. Upper Saddle River, NJ: Prentice-Hall, 2001. 14. Chuang P. T., A QFD Approach for Distribution's Location Model. International Journal of Quality and Reliability Management, Vol.19, No.8, pp.1037-1054, 2002. 15. Collett, S., Supply Chain Tools for All. Computerworld, February 22, 1999. 16. Copacino, W. C., Supply Chain Management. Boca Raton, St. Lucie Press, Florida, 1997. 17. Degraeve, Z., Labro, E. and Roodhooft, F., A Evaluation of Vendor Selection Models from a Total Cost of Ownership Perspective. European Journal of Operational Research, Vol.125, No.1, pp.34-58, 2000. 18. Delgado, M., Herrera, F., Herrera-Viedma, E. and Martinez, L., Combining Numerical and Linguistic Information in Group Decision Making. Journal of Information Sciences, Vol.107, No.1-4, pp. 177-194, 1998. 19. Dorfman M. J. and Medanic J., Scheduling Trains on a Railway Network Using a Discrete Event Model of Railway Traffic. Transportation Research Part B, Vol.38, No.1, pp.81-98, 2004. 20. Drucker, P. F., Management's New Paradigms. Forbes, pp.152-177, 1998. 21. Dubois D. and Prade H., Operations on Fuzzy Numbers. International Journal of Systems Science, Vol.9, No.6, pp.613-626, 1978. 22. Fisher, M. L., What is the Right Supply Chain for Your Product? Harvard Business Review, Vol.75, No.2, pp.105-116, 1997. 23. Ford, L., and Fulkerson, D., Flows in Networks. Princeton Univ. Press, NJ, 1962. 24. Gayialis, S. P. and Tatsiopoulos, I. P., Design of an IT-driven Decision Support System for Vehicle Routing and Scheduling. European Journal of Operational Research, Vol.152, No.2, pp.382-398, 2004. 25. Ghodsypour, S. H. and O'Brien, C., A Decision Support System for Supplier Selection Using an Integrated Analytic Hierarchy Process and Linear Programming. International Journal of Production Economics, Vol.56-57, pp.199-212, 1998. 26. Gupta, A. and Maranas, C. D., Managing Demand Uncertainty in Supply Chain Planning. Computers and Chemical Engineering, Vol.27, No.8-9, pp.1219-1227, 2003. 27. Hardy, K. G. and Magrath, A. J., Marketing Channel Management: Strategic Planning and Tactics. Illinois: Scott Publishing. 1988. 28. Henriott, L., Transforming Supply Chains into E-chains. Supply Chain Management Review Global Supplement, spring, pp.15-18, 1999. 29. Hickey, K., Java Chain. Traffic World, May 31, 46, 1999. 30. Hutt, M. D. and Speh, T. W., Business Marketing Management. NewYork: Dryden Press, 2001. 31. Kahraman, C., Ruan, D. and Dogan, I., Fuzzy Group Decision-Making for Facility Location Selection. Information Sciences, Vol.157, pp.135-153, 2003. 32. Kalakota, R. and Robinson, M. E., Business: Roadmap for Success. Reading, MA: Addison-Wesley Information Technology Series, 1999. 33. Kotler, P., Marketing Management Analysis, Planning, Implementation, And Control. 9th, ed., Cincinati, Ohio: Southwestern Publishing, 1998. 34. Laabs, J. J., Successful Outsourcing Depends on Critical Factors. Personal Journal, Vol.72, pp.51-60, October, 1993. 35. Lambert, D. M. and Cooper, M. C., Issue in Supply Chain Management. Industrial Marketing Management, Vol.29, No.1, pp.65-83, 2000. 36. Larson, P. D. and Rogers, D. S., Supply Chain Management: Definition, Growth and Approaches. Journal of Marketing Theory and Practice, Vol.6, No.4, pp.1-5, 1999. 37. Lau, H. C., On the Complexity of Manpower Shift Scheduling. Computers Operations Research, Vol.23, No.1, pp. 93-102, 1996. 38. Lee, K. K. and Lee, H., Supplier Selection and Evaluation through Activity Based Approach. Brain Korea 21 Logistics Team, 2000. 39. MacCarthy, B. L. and Atthirawong W., Factors Affecting Location Decisions in International Operations-a Delphi Study. International Journal of Operations and Production Management, Vol.23, No.7, pp.794-818, 2003. 40. Magretta, J., Fast, Global and Entrepreneurial: Supply Chain Management, Hong Kong Style: an Interview with Victor Fong. Harvard Business Review, Vol.76, No.5, pp.103-114, 1998. 41. Min, H. and Zhou, G., Supply Chain Modeling: Past, Present and Future. Computers and Industrial Engineering, Vol.43, No.1-2, pp.231-249, 2002. 42. Minoli, D., Analyzing Outsourcing: Reengineering Information and Communication System. McGraw-Haill, Inc., 1995. 43. Mols, N. P., Bukh D., P. N. and Nielsen, J. F., Distribution Channel Strategies in Danish Retail Banking. International Journal of Retail and Distribution Management, Vol.27, No.1, pp.37-47, 1999. 44. Moon, C., Kim, J. and Hur, S., Integrated Process Planning and Scheduling with Minimizing Total Tardiness in Multi-plants Supply Chain. Computers and Industrial Engineering, Vol.43, No.1-2, pp.331-349, 2002. 45. Moore, E., The Shortest Path through a Maze, Proceedings of the International Symposium on the Theory of Switch, Part II , pp.285-292, 1957. 46. Morgan, J., Integrated Supply Chains: How to Make them Work Purchasing, May 22, pp.32-37, 1997. 47. Park, S. Y. and Keh, H. T., Modeling Hybrid Distribution Channels: a Game-theoretic Analysis. Journal of Retailing and Consumer Services,

Vol.10, No.3, pp.155-167, 2003. 48. Raman, A. and Singh, J., i2 technologies, Inc. Harvard Business School Case, 9-699-042, 1998. 49. Rosenbloom, B., Marketing channels: A Management View. 5th ed., New York: The Dryden Press, 1995. 50. Simchi-Levi, D., Kaminsky, P. and Simchi-Levi, E., Designing and Managing the Supply Chain, 2e, 2003. 51. Skriver A.J.V. and Andersen K.A., A Label Correcting Approach for Solving Bicriterion Shortest-path Problems. Computers & Operations Research, Vol.27, No.6, pp.507-524, 2000. 52. Stevens, G. C., Integrating the Supply Chain. International Journal of Physical Distribution and Materials Management, Vol.19, No.8, pp.3-8, 1989. 53. Tzeng, G. H., Teng, M. H., Chen, J. J. and Opricovic, S., Multicriteria Selection for a Restaurant Location in Taipei. Hospitality Management, Vol.21, No.2, pp.171-187, 2002. 54. Yan, H., Yu, Z. and Edwin Cheng, T. C., A Strategic Model for Supply Chain Design with Logical Constraints: Formulation and Solution. Computers and Operations Research, Vol.30, No.14, pp.2135-2155, 2003. 55. Zadeh L. A., The Concept of a Linguistic Variable and its Application to Approximate Reasoning-I. Information Science, Vol.8, No.3, pp.199-249, 1975. 56. Zadeh L. A., The Concept of a Linguistic Variable and its Application to Approximate Reasoning-II. Information Science, Vol.8, No.4, pp.301-357, 1975. 57. Zadeh L. A., The Concept of a Linguistic Variable and its Application to Approximate Reasoning-III. Information Science, Vol.9, No.1, pp.43-80, 1975. 58. Zwass, V., Electronic Commerce: Structures and Issues. International Journal of Electronic Commerce, Vol.1, No.1, pp.3-23, 1996.