

國際企業建構供應商評選系統之研究：以被動元件為例

陳燕美、蘇奉信

E-mail: 9608163@mail.dyu.edu.tw

摘要

全球高科技迅速發展，製造業面臨技術創新、降低成本、提昇品質、縮短交期的壓力下，如何掌握商機取得市場領導地位，唯有建立有效的供應商評選機制才能創造優勢競爭力。而被動元件在電子產品應用範圍廣泛，是不可或缺的零件，供料來源眾多產業競爭激烈，其供應商的優劣會影響企業的形象及生產計劃研擬與策略。本研究經由文獻探討及資料彙整以品質、技術、成本、交貨供應及回應服務等為評選五個構面，再以專家意見選取出各構面的準則，透過篩選有接觸被動元件的實務經驗之對象做問卷調查，運用層級分析法(Alytic Hierarchy Process, AHP)計算各準則權重，綜合問卷分析結果排列出第二層構面及第三層準則的權重，經由本研究的架構建立，以提供被動元件供應商評選之指標更具準確性，以達到公平客觀的參考依據。

關鍵詞：供應商評選；被動元件；層級分析法

目錄

中文摘要	iii	英文摘要	iii
iv 誌謝辭		v 內容目錄	
vi 表目錄		viii 圖目錄	
x 第一章 緒論	1	第一節 研究背景	1
1 第二節 研究問題	3	第三節 研究目的	3
4 第二章 文獻探討	6	第一節 供應商選擇規範	6
6 第二節 供應商評選準則	8	第三節 供應商評選方法	19
19 第三章 研究方法	22	第一節 研究範圍與對象	25
25 第二節 研究架構與流程	25	第二節 層級分析法之應用	32
30 第三節 實證研究結果分析	39	第四節 選定評選準則架構	37
39 第二節 AHP 問卷調查	39	第一節 專家推導評定評選層級架構	39
45 第四節 綜合評估結果分析	56	第三節 問卷資料分析	45
62 第一節 研究結論	62	第五章 結論與建議	62
63 第三節 研究限制	64	第一節 研究貢獻	63
65 第四節 後續研究建議	65	第二節 參考文獻	65
67 附錄A 研究問卷	79	附錄B 第二層權重及CI 值	79
89 附錄C 評鑑表	90		

參考文獻

今岡善次郎，2005，圖解101例瞭解供應鏈管理(初版)(王慧娥譯)，台北市:向上出版公司。朱延智，2003，企業危機管理(二版)，台北市:五南圖書出版公司。余佩佩，2002，全面品質管理、供應商選擇、供應商參與、資訊運籌管理與組織績效關係之研究---台灣、香港之比較分析，國立成功大學工業管理研究所碩士論文。李玉雯，2004，台灣資訊系統商對供應商表現之評比，淡江大學國際商學碩士論文。李宏文，2002，結合層級分析法、模糊理論與灰色系統理論建構供應商評選模式之研究，國立台北科技大學生產系統工程與管理研究所碩士學位論文。林羿君，2005，資訊系統整合能力、物流能力、夥伴關係緊密度對供應鏈管理績效、競爭優勢及財務績效影響之分析-以台灣高科技製造業為例，國立東華大學碩士論文。林恩鶴，2003，邏輯測試產業關鍵設備與部品供應商評估及管理，國立清華大學工業工程與工程管理研究所碩士論文。徐啟明、李堯賢、曾南鈞，2002，電子連接器產業供應商管理之研究---層級分析法之應用，2002年兩岸商學與管理學術研討會論文集(B組)。翁振益、周瑛琪，2007，決策分析方法與應用(初版)，台北市:華泰文化事業股份有限公司。張舜傑，2005，應用層級分析法與灰關聯建構台灣IC設計業供應商評比模式，雲林科技大學工業工程與管理研究所碩士論文。張簡尚偉、顏榮慶，2003，決策準則選擇方法-應用於供應商選擇，協同合作之工業工程研討會論文集。產業情報-電子業產業關聯圖大全-下，2006，台北市:聚富文化有限公司。畢威寧，2005.06，結合AHP與TOPSIS法於供應商績效評估之研究，科學與工程技術期刊，1:1，頁75-83。許振邦 中華採購管理協會，2005，採購與供應管理(初版)，台北市:智勝文化事業有限公司。許漢昇，2003，結合層

級分析法與資料包絡分析法之績效評估模式---以某背光模組公司之供應商評選為例, 清華大學工業工程研究所碩士論。 陳啟政, 2002, 運用總品質成本分析之供應商績效評估模式, 中原大學工業工程研究所博士論文。 陳靖妙, 2004, 供應鏈架構下之供應商評估 - 以光電產業為例, 國立臺北大學企業管理學系碩士論文。 陳曉琪, 2001, 供應商遴選之決策支援系統之研究, 義守大學工業工程研究所碩士論文。 最新綜合電子電組件百科全書, 1985, 台北市:協進圖書有限公司。 黃弘毅, 2002, 智慧型供應商選擇支援系統, 國立成功大學資訊管理研究所碩士論文。 黃偉智, 2000, 供應鏈管理下供應商評估之研究-以臺灣地區中衛體系之汽機車業與電腦資訊業為例, 國立雲林科技大學工業工程與管理研究所碩士論文。 黃營杉、齊德彰, 2003.10, 臺灣自動化產業廠商對上游供應商選擇因素之研究--工具機產業之例, 文大商管學報, 8:2, 頁25-48。 溫迪興, 2005, 由供應鏈夥伴關係探討手機製造廠評選供應商之研究, 中原大學企業管理學系研究所碩士論文。 董國隆、喬國平, 2001, 模糊加權平均法於供應商選擇之應用, 第二屆管理創新與實務研討會論文集(二)。 劉建良, 2003, 以商業智慧觀點探討電腦週邊產品ODM代工供應商關鍵評選因素, 實踐大學企業管理研究所碩士論文。 蔡昆明、林仕泓、蕭珮鈴, 2005, 供應商評選因素及模式之探討-以汽車修理保養業為例-, 大葉大學企業管理學系專題製作報告。 蔡淑芳, 2004, 綠色供應鏈之評選模式研究 以IC封裝業為例, 國立中山大學企業管理學系研究所碩士論文。 鄭智中, 2004, 供應鏈之供應商評選方法研究, 國立成功大學工學院工程管理專班碩士論文。 鄧振源、曾國雄, 1989, 層級分析法(AHP)的內涵特性與應用(下), 中國統計學報, 27卷, 7期, 頁1-20。 鄧振源、曾國雄, 1989, 層級分析法(AHP)的內涵特性與應用(上), 中國統計學報, 27卷, 6期, 頁5-22。 工研院產業情報網[線上資料], (2007), 來源: <http://ieknet.itri.org.tw/index.jsp>。 台灣經濟研究院產經資料庫[線上資料], (2007), 來源: <http://www.tier.org.tw/>。 二. 英文部分 Akarte, M. M., Surendra, N. V., Ravi, B., and Rangaraj, N. (2001) Web based casting supplier evaluation using analytical hierarchy process. *Journal of the Operational Research Society*, 52, 511-522. Barbarosoglu, G., and Yazgac, T. (1997). An Application of the Analytical Hierarchy Process to the Supplier Selection Problem. *Production and Inventory Management Journal*, Vol. 38, No. 1, 14-21. Barut, M., Faisst, W., Kanet, John J. (2002) Measuring supply chain coupling: an information system perspective. *European Journal of Purchasing and Supply Management*, Vol. 8, 161-171. Bhutta, S.K., Huq, F., 2002. Supplier selection problem: A comparison of the total cost of ownership and analytic hierarchy process approaches. *Supply Chain Management*, Vol. 7, No. 3, 126-135. Cebi, F., & Bayraktar, D. (2003). An integrated approach for supplier selection. *Logistic Information Management*, 16(6), 395-400. Choi, Thomas Y., and Hartley, Janet L. (1996). An exploration of supplier selection practices across the supply chain. *Journal of Operations Management*, Vol. 14, No. 4, 333-343. Chung, S., Singh, H., Lee K. (2000). Complementarity, status similarity and social capital as drivers of alliance formation. *Strategic Management Journal*, Vol.21, No. 1, 1-22. Cooper M. C. and Lambert D.M., (2000). Issues in supply chain management. *Industrial marketing management*, Vol. 29, 65-83. Dickson G. W. (1966), An Analysis of Vendor Selection: Systems and Decisions. *Journal of Purchasing*, Vol. 1, No. 2, 5-17. Donaldson, B. (1994). Supplier selection criteria on the service dimension. *European Journal of Purchasing and Supply Management*, Vol. 1, No. 4, 209-217. Dowlatshahi, S. (2000). Designer-buyer-supplier interface: Theory versus practice. *Int. J. Production Economics*, Vol. 63, No. 2, 111-130. Duffy, Rachel and Fearue, Andrew (2004). The impact of supply chain partnerships on supplier performance. *The International Journal of Logistics Management*, Vol. 1, No. 1, 57-71. Dulmin, R., and Mininno, V. (2003). Supplier selection using a multi-criteria decision aid method. *Journal of Purchasing and Supply Management*, Vol. 9, No. 4, 177-187. Florez-lopez, R. (2007). Strategic supplier selection in the added-value perspective: A CI approach. *Information Sciences*, Vol. 177, 1169-1179. Goffin, K., Szwajczewski, M. and New, C. (1997). Managing Suppliers : When Fewer Can Mean More. *International Journal of Physical Distribution and Logistics Management*, Vol. 27, No. 7, 422-436. Graham, T. S., Daugherty, P. J., and Dudley, W. N. (1994). The long-term strategic impact of purchasing partnerships. *International Journal of Purchasing and Material Management*, Vol. 30, No. 4, 13-18. Hemaida, R., and Schmits, J. (2006). An Analytical Approach to Vendor Selection. *Industrial Management*, 18-24. Houshyar, A., and Lyth D. (1992). A systematic supplier selection procedure, *Computer and Industrial Engineering*, Vol. 23, No. 1-4, 173-176. Hutt, Michael D., Stafford, Edwin R., Walker Beth A., and Reingen Peter H. (2000). Case study defining the social network of a strategic alliance. *Sloan Management Review*, Winter, 51-62. Kannan, Vijay R., and Tan, Keah C. (2002). Supplier Selection and Assessment: Their Impact on Business Performance. *Journal of Supply Chain Management*, Vol. 38, No. 4, 11-21. Katsikeas, Constantine S., Paparoidamis, Nicholas G., and Katsikea, Eva (2004). Supply source selection criteria: The impact of supplier performance on distributor performance. *Industrial Marketing Management*, Vol. 33, No. 8, 755-764. Krause, D.R., Pagell, M. and Curkovic, S. (1998). Purchasing Strategy: An Empirical Analysis. *Proceedings 1998 of the Decision Science Institute*, 1998, 1227-1229. Krause, Daniel R., Pagell, Mark, and Curkovic, Sime. (2001). Toward a measure of competitive priorities for purchasing. *Journal of Operations Management*, Vol. 19, 497-512. Lambert, D. M., Emmelhainz, M. A., and Gardner, J. T. (1996). Developing and Implementing Supply chain Partnerships. *The International Journal of Logistics Management*, No. 2, 1-17. Lehmann, D. R. and O' Shaughnessy, J. (1982). Decision Criteria Used in Buying Different Categories of Products. *Journal of Purchasing and Materials Management*, spring, 9-14. Lehmann, Donald R. and O' Shaughnessy, John, (1974). Difference in Attribute Importance for Different Industrial Products. *Journal of Marketing*, Vol. 38, 36-42. Linn, Richard J., Tsung, F., and Ellis L. W. C. (2006). Supplier selection based on process capability and price analysis. *Quality Engineering*, Vol. 18, 123-129. Maloni, Michael J. and Benton, W.C. (1997). Supply Chain Partnerships: Opportunities for Operations Research. *European Journal of Operational Research*, Vol. 101, 419-429. Maurizio B., and Alberto P. (2002). From Traditional Purchasing to Supplier Management: A Fuzzy Logic-based Approach to Supplier Selection. *International Journal of Logistics: Research and Applications*, Vol. 5, No. 3, 235-255. Muralidharan, C., Anantharaman, N., and Deshmukh, S. G. (2002) A multi-criteria group decisionmaking model for supplier rating. *Journal of Supply Chain Management*, Vol. 38, No. 4, 22-33. Narasimhan, R., Talluri, S., and Mendez, D. (2001). Supplier evaluation and rationalization via data envelopment analysis: an empirical examination. *The Journal of Supply Chain Management*, Vol. 37, No. 3, 28-37. Olhager, Jan., and Selldin, Erik. (2004). Supply chain management survey of Swedish manufacturing firms.

International Journal of Production Economics, Vol. 89, No. 3, 353-361. Pearson, John N., and Ellram, Lisa M. (1995). Supplier selection and evaluation in small versus large electronics firms. *Journal of Small Business Management*, Vol. 33, No. 4, 53-65. Petroni, A., and Braglia, M. (2000). Vendor Selection Using Principal Component Analysis. *The Journal of Supply Chain Management*, Vol. 36, No. 2, 63-69. Pi, W-N. and Low, C. (2003). Supplier evaluation and selection via Taguchi loss functions and an AHP. *The International Journal of Advanced Manufacturing Technology*. (in press). Saaty, Thomas L.(1971). A Scaling Method for Priorities in Hierarchical Structure. *Journal of Mathematical Psychology*, Vol. 15, No. 3, 234-281. Sarkis, Joseph., and Talluri, Srinivas (2002). A Model for Strategic Supplier Selection. *Journal of Supply Chain Management*, Vol. 38, No. 1, 18-28 Shin, H., Collier, David A., and Wilson, Darryl D. (2000). Supply management orientation and supplier/buyer performance. *Journal of Operations Management*, 18, 317-33. Simpson, Penny M., Siguaw, Judy A., and White, Susan C. (2002). Measuring the Performance of Suppliers: An Analysis of Evaluation Processes. *Journal of Supply Chain Management*, Vol. 38, No. 1, 29-41. Spekman, R. E. (1988). Perceptions of Strategic Vulnerability among Industrial Buyers and Its Effect on Information Search and Supplier Evaluation. *Journal of Business Research*, Vol. 17, 313-26. Stevenson William J. (1999). *Production/Operations Management* (6th ed.). U.S.A.: McGraw-Hill Companies, Inc.,. Swift, Cathy O., (1995). Preferences for single sourcing and supplier selection criteria. *Journal of Business Research*, Vol. 32, No. 2, 105-111. Talluri, S., and Narasimhan, Ram (2004). A methodology for strategic sourcing. *European Journal of Operational Research*, Vol. 154, No. 1, 236-250. Takeishi, A.(2001), Bridging inter- and intra-firm boundaries:Management of supplier involvement in automobile product development, *Strategic Management Journal*, Vol.22, No.5, pp.403-433 Tan, Keah C., Kannan, Vijay R., and Handfield, Robert B. (1998). Supplier Chain Management: Supplier Performance and Firm Performance. *International Journal of Purchasing and Material Management*, Vol, 34. No. 3, 2-9. Tan, Keah C., Kannan, Vijay R., Handfield, Robert B. (1998). Sipply chain management: Suppler performance and firm performance. *International Journal of Purchasing and Materials Management*, Vol. 34, No. 3, 2-9. Tracey, M., and Tan, Chong L. (2001). Empirical analysis of supplier selection and involvement, customer satisfaction, and firm performance. *Supply Chain Management*, Vol. 6, No. 3/4, 174-188. Tseng, Yuan-Jye and Lin, Yu-Hua (2005). A model for supplier selection and tasks assignment. *The Journal of American Academy of Business*, 2, 197-207. Vonderembse, Mark A., and Tracey, M. (1999). The impact of the supplier selection criteria and supplier involvement on manufacturing performance. *The Journal of Supply Chain Management*, Vol. 35, No. 3, 33-39. Weber, Charles. A., Current, John. R., and Benton, W. C. (1991). Vendor Selection Criteria and Methods. *European Journal Of Operational Research*, Vol. 50, No. 1, 2-18. Wilson, Elizabeth J. (1994). The Relative Importance of Supplier Selection Criteria:A Review and Update. *International Journal of Purchasing and Materials Management*, Vol. 30, No. 3, 35-41.