

Based on Customer Value for Building an Evaluation Model of International Airline

江佩馨、張魁

E-mail: 9806301@mail.dyu.edu.tw

ABSTRACT

The airline industry is faced the disadvantageous economic environment, such as the global financial storm, the high petroleum price and the inflated pressure, the fuel oil cost accounts for the total transport business cost the proportion, from 13% rises to today 40%, has amounted to 183,00 million dollars. Under this influence, many middle and small scale international airlines go out of market. And many Airlines utilize reducing weight of airplane, diminishing scheduled flights or canceling flight to control operation costs. However, above methods could only provide the temporary operation for enterprise and useless for long-term market share. Thus, enterprise should base on customer ' orientation and focus on customer ' demand to enhance enterprise's competitive capability. Based on the definition of Marketing by American Marketing Association in 2004, how to create, communicate and deliver value to customers is an important function for organization. Even though Woodruff (1997) has submitted a hierarchical model of customer value which includes attribute-consequence-value (A-C-V) three level. But, the context of each level is not clear and abstract. In fact, as a result of industrial difference, the dimension of customer value will also have a difference. Especially passengers take the international airline and stay long time in the cabin. There is high degree of interaction between passengers and service personnel. Thus, it is necessary to adopt the " experience " as a dimension to increase the integrity of customer value. Therefore, for constructing the complete decision model, firstly, this study reviews previous literature and utilizes in-depth interview with experts and customers and to obtain the actual content which customer expected. Next, Interpretive Structural Modeling (ISM) is utilized to clear the interdependent relationships among criterion and construct an evaluation model of international airlines. Thirdly, Analytic Network Process (ANP) is used to calculate relative weight of criterion. By applying ANP method, the interaction results could be obtained and got more reasonable consequence from customers.

Finally, three well-known international airlines are selected as alternatives to construct an evaluation model of international airline and obtain objective result thought questionnaire analysis. According to research result, top ten passenger ' s service attribute statuses are large scale, well image, prompt response, short check-in, high awareness, friendly attitude, special price, well flight records, comfort seat and low exceptional rate. In addition, marketers should not only use the price as marketing strategy but passing the value of transaction, safety, service and experiential to the customer as well as enhance the mind share of customers. Besides above, marketers should utilize the simulate evaluation before provide the service strategy to discover the valuable service attributes, and provides these service attributes with competitors in advance. According to the results of competition analysis, enterprise would increases successful opportunity in promotion. At the same time, the " negative but afterward " of self-criticism could be transformed into " frontage and forward " forecast.

Keywords : Customer value、 Interpretive structural modeling、 Analytical network process

Table of Contents

中文摘要	iii
英文摘要	iv
誌謝辭	v
Contents	vi
List of Tables	vii
List of Figure	viii
Chapter 1 Introduction	1
1.1 Research background and motivation	1
1.2 Research objectives	3
1.3 Research process	4
Chapter 2 Literature review	6
2.1 Customer value	6
2.2 Service Quality	13
2.3 Means-end Chain	16

2.4	Interpretive Structural Modeling	18
2.5	Analytic Network Process	20
Chapter 3	Establish a evaluation model	23
3.1	Setting up the goal and the hierarchy	23
3.2	Testing and verifying dependency relations	25
3.3	Figuring out the relative weight values	30
3.4	Testing the consistency and integrating opinions	35
3.5	Calculate total weights of service attribute	36
3.6	Calculating the scheme weight values	38
3.7	Investigation process and research samples	40
3.8	Questionnaire design	42
Chapter 4	Analysis and results	45
4.1	Investigation on evaluation cases	45
4.2	Developing airlines assessment framework	46
4.3	Testing and verifying the dependence relations	48
4.4	Calculating the relative weight of the desired value	60
4.5	The dependency relation in the safety value	62
4.6	Utilizing super-matrix to obtain relative weight at	
5.5	ECs level	64
4.7	Calculate total weight of service attributes	69
4.8	Index computation and scheme assessment	71
4.9	The influence of interactions on consumer decision	76
Chapter 5	Discussion	77
5.1	Discussion	77
5.2	Contributions	80
Reference	82
Appendix	A	91
Appendix	B	95
Appendix	C	116

List of Tables

Table 1	The dimensions and definitions of customer value	10
Table 2	The definition of service quality dimensions	15
Table 3	ISM applications	20
Table 4	The first level hierarchical matrix is deconstructed deconstructed	28
Table 5	The second level hierarchical matrix is deconstructed	29
Table 6	The three level hierarchical matrix is deconstructed	29
Table 7	Random index, RI	35
Table 8	List for the professional backgrounds of the Interviewees in this Study	41
Table 9	List for the backgrounds of the evaluation scheme	46
Table 10	The hierarchical matrix of safety value is deconstructed	51
Table 11	The service attributes of WFR, LAR and LER is deconstructed	51
Table 12	The service attributes of LS,HA and WI is deconstructed	51
Table 13	The Relative weights of desired values	60
Table 14	Relative weights of service attributes for airlines	61
Table 15	Pair-wise comparison matrices at ECs between FS and CR	62
Table 16	Pair-wise comparison matrices at Price Preference am-	

ong SP, MB and PLT 64

Table 17 Super-matrix of interdependence before convergence at ECs level 65

Table 18 Super-matrix of interdependence after convergence at ECs level . 65

Table 19 Super-matrix of interdependence before convergence at SAs level . . . 67

Table 20 Super-matrix of interdependence after convergence at SAs level 68

Table 21 The relative weight of service attributes for airlines . . . 70

Table 22 The weight, index and evaluation results of attributes for alternatives 73

Table 23 The comparison between AHP and ANP weight 74

List of Figures

Figure 1 The research process of this study 5

Figure 2 The questions and strategies of international airline service development 25

Figure 3 Hierarchical interaction graph 30

Figure 4 The calculation concept of attribute preference . . . 32

Figure 5 The hierarchy of safety value 52

Figure 6 The hierarchy of transaction value 53

Figure 7 The hierarchy of service value 54

Figure 8 The hierarchy of experience value 55

Figure 9 The hierarchical customer value framework of airlines 59

Figure 10 Evaluation model of Most Valuable 60

REFERENCES

一、中文部分簡禎富(2005), 決策分析與管理:全面品質提升支架構與方法, 台北, 雙葉出版社。Airway世界民航雜誌, (2008), 第135期, 18-19。李家豪(2004), 以結構整合觀點探討組織設計模式 - I.S.M.為分析工具, 私立中原大學企業管理研究所未出版之碩士論文, 15-24。林宜萱譯(1990), 策略行銷管理:發揮產品優勢、打入利基市場的高效策略, 台北, 美商麥格羅希爾出版社, 145-146。林羿吟(2005), 溫泉旅館服務品質評估模式之建構, 私立中華大學科技管理研究所未出版之碩士論文, 12-14。徐村和, 張魁?(2007), 顧客價值導向之保養組合商品評選模式:應用模糊分析網絡程序法, 行銷科學學報, 3(2), 113-135。張寧(2008), 以ISM詮釋結構模式法探討直航對高學整體發展影響之策略, 管理學報, 25(6), 635-649。張魁?(2008), 顧客價值導向的產品組合模式, 國立高雄第一科技大學管理研究所未出版之博士論文。張魁?(2009), Super Decisions軟體操作手冊 - 以ANP突破AHP的研究限制, 台北:鼎茂出版社。許格源(2005), 顧客價值觀點分析旅客選擇航空公司之行為, 國立台灣海洋大學航運管理研究所未出版之碩士論文。

二、英文部分Bagozzi, R. P., & Dabholkar, P. A. (1994). Consumer recycling goals and their effect on decisions to recycle: A means-end chain ana-lysis. *Psychology and Marketing*, 11(4), 313-340.Berry, L. L., (1986). Retail businesses are service businesses. *Journal of Retailing*, 62(1), 3-6.Butz, H. E., & Goodstein, L. D., (1996). Measuring customer value: Gaining the strategic advantage. *Organizational Dynamics*, 24(3), 63-77.Chandon, P., Wansin, B. & Laurent, G. (2000). A benefit congruency framework of sales promotion effectiveness. *Journal of Mar-keting*, 64(10), 65-81.Chaudhuri, A., & Holbrook, M. B. (2001). The chain of effects from brand trust and brand affect to brand performance: The role of brand loyalty. *Journal of Marketing*, 65(2), 81-93.Chipman, S. F., & Brennan, R. L. (Eds.) (1995). *Cognitively diagnos-tics assessment* Hillsdale. New Jersey: Lawrence Erlbaum As-sociates.Claeys, C., Swinnen, A. & Abeele, P. V. (1995). Consumers means-end chains for think and feel products. *International Journal of Research in Marketing*, 12(3), 193-208.Fennell, G. G. (1978). Perceptions of the product-in-use situation. *Journal of Marketing*, 42(2), 39-47.Gale, B. T. (1994). *Managing customer value: Creating quality and service that customers can see*. New York: The Free Press.Garvin, D. A. (1983). Spin-offs and the new firm formation process. *California Management Review*, 25(2), 3-20.Gutman, J. (1982). A means-end chain model based on consumer ca-tegorization processes. *Journal of Marketing*, 46(2), 60-72.Harker, P. T., & Vargas, L. G. (1990). Reply to remarks on the analytic hierarchy process. *Management Science*, 36(3), 269-273.Holbrook, M. B. (1994). The nature of consumer value, in service quality: New directions in theory and practice. Roland T. Rust and Richard L. Oliver, eds. Newbury Park (pp. 21-71). Califor-nia: Sage Publications.Holbrook, M. B. (1999). Introduction to consumer value, In Morris B. Holbrook, (Eds.), *Consumer Value: A Framework for Analysis and Research* (pp. 1-28). New York: RoutledgeHolbrook, M. B., & Corfman, K. P. (1985). Quality and value in the consumption experience: Phaedrus rides again. *Perceived*

Quality, J. Jacoby and J. Olson, (Eds.), Lexington (pp. 31-57). Massachusetts: Lexington Books.

Holbrook, M., & Hirschman, E. (1982). The experimental aspects of consumption: Consumer fantasies, feelings and fun. *Journal of Consumer Research*, 9(2), 132-140.

Hornig, S. C., & Lin, L. H. (1994). A dynamic consumer product classification perspective. *Journal of Management Studies*, 11(1), 25-47.

Hsieh, L. F., Lin, Y. Y., Wang, L. H., & Lin, L. H. (2005). A service quality evaluation model for hot spring hotels in Taiwan. *The XV ACME International Conference*, 338-343.

Kahraman, C., Ertay, T., & Buyukozkan, G. (2006). A fuzzy optimization model for QFD planning process using analytic network approach. *European Journal of Operational Research*, 171(2), 390-411.

Keller, K. L. (2003). Brand synthesis: The multidimensionality of brand knowledge. *Journal of Consumer Research*, 29(4), 595-600.

Kotler, P. (1994). *Marketing management: Analysis, planning, implementation, and control* (8th ed.). New Jersey: Prentice-Hall.

Kwong, C. K. & Bai, H. (2003). Determining the importance weights for the customer requirements in QFD using a fuzzy AHP with an extent analysis approach. *IIE Transactions*, 35(7), 619-626.

Leung, L. C., Lam, K. C. & Cao, D. (2006). Implementing the balanced scorecard using the analytic hierarchy process and the analytic network process. *Journal of the Operational Research Society*, 57(6), 682-691.

Lievens, F. & Highhouse, S. (2003). The relation of instrumental and symbolic attributes to a company's attractiveness as an employer. *Personnel Psychology*, 56(1), 75-102.

Meade, L. M. & Sarkis, J. (1999). Analyzing organizational project alternatives for agile manufacturing processes: An analytical network approach. *International Journal of Production Research*, 37(2), 241-261.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing*, 49(4), 41-50.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Marketing*, 64(1), 13-33.

Park, C. W., Jaworski, B. J., & MacInnis, D. J. (1986). Strategic brand concept image management. *Journal of Marketing*, 50(4), 135-145.

Park, J. W. (2007). Passenger perceptions of service quality: Korean and Australian case studies. *Journal of Air Transport Management*, 13(4), 238-242.

Patterson, P. G., & Spreng, R. A. (1997). Modeling the relationship between perceived value, satisfaction, and repurchase intentions in a business-to-business, service context: An empirical examination. *International Journal of Service Industry Management*, 8(5), 414-434.

Pieters, R., Baumgartner, H., & Allen, D. (1995). A means-end chain approach to consumer goal structures. *International Journal of Research in Marketing*, 12(3), 227-244.

Rhoades, D. L., & Waguespack, B. Jr. (1999). Better safe than service: The relationship between service and safety quality in the US airline industry. *Managing Service Quality*, 9(6), 396-400.

Saaty, T. L. (1996). *Decision making with dependence and feedback: the analytic network process*. Pittsburgh, Pennsylvania: RWS Publications.

Saaty, T. L. (2005). *Theory and applications of the analytic network process: Decision making with benefits opportunities, cost, and risks*. Pittsburgh, Pennsylvania: RWS Publications.

Smith, J. B., & Colgate, M. (1994). Customer value creation: A practical framework. *Journal of Marketing Theory and Practice*, 15(1), 7-23.

Tatsuoka, K. K. (1995). Architecture of knowledge structures and cognitive diagnosis: A statistical pattern recognition and classification approach. (Eds.), *Cognitively diagnostics assessment* (pp. 327-359). New Jersey: Lawrence Erlbaum Associates.

Vaughn, R. (1980). How advertising work: A planning model. *Journal of Advertising Research*, 20(5), 27-33.

Warfield, J. N. (1973). Binary matrices in system modeling. *IEEE Transactions on System, Man and Cybernetics*, 3(5), 441-449.

Warfield, J. N. (1974). Toward interpretation of complex structural models. *IEEE Transactions on System, Man and Cybernetics*, 4(5), 405-416.

Whitaker, J., Terzis, B., Soong, G. E., & Yeh, W. (2005). Stated preference as a tool to evaluate airline passenger preferences and priorities. *Journal of the Transportation Research Board*. 1915, 55-61.

Woodruff, R. B. (1997). Customer value: The next source of competitive advantage. *Journal of the Academy of Marketing Science*, 25(2), 139-153.

Wu, W. W., & Lee, Y. T. (2007). Selecting knowledge management strategies by using the analytic network process. *Expert Systems with Applications*, 32(3), 841-847.

Zeithaml, V. (1987). Defining and relating price, perceived quality, and perceived value (pp. 87-101). Cambridge, Massachusetts: Marketing Science Institute.

Zeithaml, V. (1988). Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence. *Journal of Marketing*, 52(3), 2-22.