The Influence of New Product Development on Industry Competitiveness — A Case of Automobile Industry

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ABSTRACT

After 50 years of development, the auto industry in Taiwan has been limited not only by its rather small market size, but also restrictions on technology imposed by parent makers. The problem has been further compounded by overproduction in the international auto market that resulted in mergers and alliances as well as globalization of auto manufacturing groups, not to mention the unfavorable impact upon the auto industry following accession to the World Trade Organization (WTO). For all of the reasons mentioned above, there is no doubt misfortunes have been added to Taiwan's auto industry that has been already unfortunate for almost half a century. Under this unfavorable environment, Taiwan 's auto industry has been forced to aggressively seek a living space for survival. As a result, it started to expand into the export market, marching toward globalization as well. After years and years of efforts that the auto industry has exerted, manufacturing of Taiwan autos has reached the level of the international standards insofar as quality is concerned. In recent years, the industry has spent huge amount of money in R&D and design, making differential products to meet local demand. In addition, the industry has spared no efforts in enhancing the level of customer satisfaction to make locally made auto popular among local residents. Acceptance of locally made auto has gradually increased its market share, peaking at 86.54% in 2002. But expansion in the domestic market has never been that easy. And that has prompted the industry to aggressively join the international division of labor system, setting up shops on Mainland China and Southeast Asia so as to break through the bottleneck of survival and development. 1.Domestic auto makers have organized research centers one after another, aggressively developing new high-quality models at reasonable price to remove the bad impression on home made cars that people used to have in the past. Needless to say, the market competitiveness of the product has been upgraded in the process. 2.To solidify the domestic market, the industry further differentiates the deluxe interior setup and accessories, applying humanized hi-tech on high-class luxurious cars to make them popular in the first place, and, secondly, create high value-added product in order to win the hearts of consumers. 3. Creation of own brand name: The market size of Taiwan's auto industry is rather small and, moreover, the key technology has been in the hands of the parent manufacturer. That makes it hard for the industry to take the initiative to engage in R&D and have its own brand name. Consequently, Taiwan must rely on international division of labor to make itself a major supply base for auto body and chassis components and, in addition, assist domestic component makers in expanding the scale of production so as to elevate their operating benefit.

Keywords: Auto industry; New product; Competitiveness

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REFERENCES

一、中文部份 1.鍾國貴 & 伍家德(1995),新產品開發完整程度對新產開發績效影響,東海學報36 卷。 2.曾光華(1998),行銷學,三民書局出版社。 3.陳耀茂譯「新產品開發入門」日經品管文獻賞叢書 (1989)。 4.陳怡芬譯「不流淚的品管」天下遠見出版公司(2002)。 5.司徒達

賢著「策略管理」遠流出版公司(1981)。 6.賴士葆「科技策略與新產品發展績效相關之研究」台北科技管理論文集,大葉文教基金會 , (1990) 7.李宜軒, 「企業創新策略、經營績效與競爭優勢關係之研究-以台灣地區製造業為例」, 國立東華大學國際企業研究所碩士論 文,民國89 年。 8.林美如,「新產品開發策略與企業競爭策略暨運作結構相關性之研究-以台灣區資訊電子業為例」,靜宜大學管理科 學研究所碩士論文,民國86年。 9.朱桐和,廠商競爭對抗之研究 - 以國內汽車產業為例,中山大學企管研究所碩士論文1998 年。 10.李 明軒譯,波特著,競爭策略,天下文化,1998年1月。 11.李柏毅,廠商獨特競爭情勢下之競爭互動研究-以台灣國產汽車業為例,國立 中山大學企業管理學系碩士論文,民國87年6月 12.經濟部技術處2002年汽、機、自行車產業現況與趨勢分析民國88年。 13.工研院經資 中心ITIS 報告,「2001 年汽車產業綜論」,2001。 14.楊燕枝,加入WTO 對我國汽車工業之影響分析,工研院經資中心ITIS 計劃 ,2001 年9 月19 日。 15.溫曼英,吳舜文傳,台北:天下文化,1993。 16.汽車產業經營與展望研討會記要,2001 年9 月14 日。 17.台灣 區車輛工業總會月刊 ,第107 期 ,2002 年12 月。 18.小島敏彥,新產品開發管理,日刊工業新聞社,1996 年7 月(蔣永明譯,新產品 開發管理,中衛發展中心,2002 年)。 19.王文英,廖韻淳,新產品開發之管理與績效評估及獎酬制度,會計研究月刊第178、179 期 ,2000 年9 月、10 月。 20.李克華,新產發展成敗關鍵之研究--台灣高科技企業實證,台灣大學商學研究所碩士論文,1984 年。 21. 行政院國家科學委員會,「中華民國科學技術統計要覽」90年版,行政院國家科學委員會,2001年。 22.汎奇國際顧問管理公司,新產 品開發流程標竿學習調查報告,汎奇國際顧問管理公司,1996年。 23.孫康倫,新產品開發之動態系統與管理,台灣大學商學研究所碩 士論文,1997 年。 24.陳秀敏,企業新產品開發、成本管理與經營績效之研究,中山大學企業管理研究所碩士論文,1993 年6 月。 25. 黃福生,台灣高科技電子產業新產品開發流程管理之探討,交通大學高階主管管理學程碩士班,2001 年。 26.鍾志明,新產品發展過程 之資源配置與績效之關係--以國內製造業為例,政治大學企業管理研究所博士論文,1999 年7 月。 27.鍾元鋒,電子成品業研發管理過程 對量產績效影響之研究,台灣科技大學管理研究所碩士論文,2000 年。 二、英文部份 1.Booz - Allen and Hamilton(1982), New Products Management for the 1980 's, NY: Booz, Allen and Hamilton Inc. 2.Cooper, R.G. (1983b), "A Process Model for Industrial New ProductDevelopment "IEEE Transactions on Engineering Management, 3.Griffin, A. and J.R. Hauser(1992), "Patterns of Communication AmongMarketing, Engineering and Manufacturing- A Comparison Between Two NewProduct Teams, "Management Science, 4.Cooper, R.G. and Kleinschmidt E.J. " An Investigation into thenew product process: Steps, Deficiencies and Impact " Journal of Product Innovation Management I. 3 No.2(1995)。 5.Guieford J.P., "Fundamental Statistic in Psychology and Education", 4th ed. New York: McGraw-Hill, (2003), 6.Betz, F., (1997) Managing Technological Innovation Competivities Advantagefrom Change, JOHN WILEY & SONS, INC, (p.5 ; p.282; p.314; p.14) 。 7.Booz, A. J., Allen B. C. and Hamilton, P. J., New Products Management for The 1980s, New York: Booz, Allen and Hamilton Inc., 1982. 8. Cooper, R.G. and Kleinschmidt E.J. An Investigation into thenew product process: Steps, Deficiencies and Impact " Journal of Product Innovation Management Vol. 3 No.2P71-85,(1986). 9.Guieford J.P., "Fundamental Statistic in Psychology and Education ", 4th ed. New York: McGraw-Hill, (1983). 10. Hong and Daguang "Manufacturing Science and Engineering American Society of Mechanical Engineers, Manufacturing Engineering Division ", MED V2-2. New York NY: USA P827-841,(1995). 。 11.John E. Ettlie "R&D and Global Manufacturing Performance "Management Science/Vol. 44,No 1, January Page48.McGrath M.E.and Romeri M.N, "From experience the R&Deffectiveness index: A metric for product development performance ", Journal of Product Innovation Management Vol.11 No. 3 P213-220, (1994). 12. Sounder, W.E. "Managing New Product Innovation", Lexington books, Massuchusetts, Tornto, (1987). 13. Stefan Thomke "Product Development at Dell computer Corporation" Boston: Harvard Business School, February 22(1999). . 14.Clark & Wheelwright, Managing new product and process development, New York, 1993, 15.Crawford, C.M., New Products Management, 4th Editions, Irwin, 1994. 16.R. G. Cooper & Kleinschmidt, E. J., Benchmarking firms, Engineering Management Review 23, 3, Fall 1995 。 17.Robert G. Cooper,Product Leadership,Perseus Books,1998(巫宗融譯,新產品完全開發手冊,遠流,2000 年)。 18.Robert J. Thomas, New Product Development, John Wiley & Sons, Inc., 1993 (鄭三俠譯,新產品研發,智勝文化,1995年。19. Samuel C.Johnson and Conrad Jones, How to Organize for New products, Havard Business Review, 1957。 20. Jeffery K. Pinto and Dennis P. Stevin , Critical Success Factors In R&D Projects, Research — TechnologyManagement, January-February 1989。 21. Shahid L. Ansari, Jan E. Bell & the CAM-I Target Cost Core Group, Target Costing: The Next Frontier in Strategic Cost Management, IRWIN Professional Publishing , 1997。