

The Influence of the Technology Gap and the Interaction Mechanism on the Performance of Technology Transfer ---The Case

楊漢民、陳木榮

E-mail: 9314198@mail.dyu.edu.tw

ABSTRACT

Under the promotion of privatising the procurement of military aircraft maintenance, the resources of military defense are being released to the private sector. Given such an environment, means of establishing a sound interaction mode with aircraft manufacturers, that while serves to enhance the military's maintenance technology and bolster combat capability also propel the nation's economic development in creating win-win for the military and the private sector, is the goal of current phase. This study on "aircraft maintenance technical transfer efficiency" arises from the author's concern and duty on the subject being a air force wing level maintenance staff. The study aims to analyse the wing level's current maintenance status via literature gathering, sorting, and interview with the many related predecessors. Literature relevant to technical gap, interaction mechanism and technical transfer efficiency will be applied to examine the technical proficiency gap and technical transfer efficiency between the wing level maintenance crew and the manufacturer technical personnel, and from the perspective of interaction mechanism investigate the state of communication's influence on the technical proficiency gap and the technical transfer efficiency. The study intends to contribute to the improvement of the wing level maintenance system, and through efficient technical transfer abridge the technical capability gap between the wing level aircraft maintenance crew and the manufacturer that may consequently reduce fighter breakdown rate and bolster the maintenance crew's technical proficiency in ensuring wing level maintenance quality and flight safety.

Keywords : Technology Gap ; Interaction Mechanism ; Technology Transfer

Table of Contents

第一章 緒論 第1節 研究背景與動機 第4節 研究限制	第二節 研究目的 第三章 文獻探討 第1節 技術及技術差距之涵義	第三節 研究範圍 第2節 互動機制相關文獻
1.1、技術的定義 1.4、技術差距之涵義	1.2、技術的類型 1.5、小結	1.3、技術移轉之涵義 第3節 技
2.1、互動機制的定義 術移轉績效相關文獻 影響技術移轉績效之因素 單元與個案選擇 第3節 個案撰寫流程及分析	2.2、溝通 3.1、技術移轉績效之定義 3.4、小結	2.3、小結 第2節 分析 第3節 分析
5.2、初級與次級資料來源 6.2、互動機制因素構面 第2節 第二中隊個案	5.3、初級資料取得方式 6.3、技術移轉績效構面 第3節 第三中隊個案	3.2、技術移轉績效衡量指標 第四章 個案敘述與命題推導 第1節 第一中隊個案 第4節 裝配廠家個案
實證 第五章 結論與建議 第1節 研究結論 2.1、理論涵義 2.2、實務涵義	1.1、技術技術差距方面 2.2、實務涵義 第3節 後續研究建議	6.1、技術差距因素構面 第5節 研究命題之推導及 第6節 研究變項說明 第1節 第一中隊個案 第2節 理論與 第3節 後續研究建議

REFERENCES

中文部分 1.Dorothy Leonard-Barton著，王美音譯，知識創新之泉：智價企業的經營，台北：遠流出版社，1998。 2.Stephen p.Robbins著，李青芬、李雅婷、趙慕芬譯，組織行為學，台北：華泰出版社，1994。 3.王威程(1992)，「組織內工作溝通與勞資關係之研究-以食品業為對象」，東海大學企業管理研究所碩士論文。 4.方世杰(1996)，企業技術交易模式影響因素之探討，國立台灣大學商學系研究所未出版之博士論文。 5.行政院國家科學委員會(1994)，「中華民國科學技術統計要覽」，行政院國家科學委員會，台北。 6.李國鼎(1978)，「中美兩國間工業技術的雙向交流」，自由中國之工業，第50卷第2期，頁2-5。 7.李元墩(1999)，「組織溝通研究之回顧與展望」，長榮管理學院學報，第59期，1999年。 8.沈啟(1992)，影響企業技術移轉績效內部因素之研究，國立政治大學企業管理研究所未出版之碩士論文。 9.吳思華(2000)，「策略九說：策略思考的本質」，台北：臉譜。 10.吳青松(2002)，國際企業管理-理論與實務(3版)，台北：智勝文化事業有限公司。 11.林鴻達(1997)，技術移轉之因果模式研究，國立中央大學工業管理研究所未出版之碩士論文。 12.林明杰(1988)「研究發展與製造之介面研究」，國立政治大學企業管理研究所，碩士論文。 13.林明杰(1992)，技術能力與技術引進績效相關研究，國立

政治大學企業管理研究所，博士論文。 14.林明杰(1997)，產業競爭環境、引進技術內涵與技術移轉績效相關之研究，台北:中華民國管理科學學會。 15.林子敬(2000)，技術移轉模式、技術能力與移轉績效關係之研究—以台灣電子資訊廠商為例，私立長榮管理學院經營管理研究所未出版之碩士論文。 16.林志勳(1999)，技術承接者特質與技術移轉績效分析，及其受技術移轉雙方溝通策略與移轉技術特性影響研究，私立中原大學企業管理研究所未出版之碩士論文。 17.尚榮安譯(2001)，「個案研究」，台北:弘智文化。 18.俞慧芸(1994)，「政府科技專案技術移轉模式與移轉績效之研究:以臺灣電子資訊產業為例」，中山大學企業管理研究所,博士論文。 19.郭恒(1999)，技術移轉內涵與製造績效間關係之研究—以台商電子電機業在中國大陸投資為例，國立中央大學企業管理研究所未出版之碩士論文。 20.徐佳士(1987)，大眾傳播理論，正中書局出版。 21.徐佳銘(1983)，「機械工業技術移轉的可行方式」，技術移轉研討會講稿。 22.張如蓮(1996)，高科技事業中創新類型與組織知識創造之研究，政治大學企業管理研究所碩士論文。 23.張森林 (1991)，「國際技術移轉績效影響因素探討 - 以電子業、化學業為例」台大商研所未出版碩士論文，台北。 24.許士軍 (1981)，「管理學」，台灣東華書局股份有限公司，台北。 25.鄒孟文、劉錦添 (1997) ，「外人直接投資對台灣製造業波及效果之實證」，經濟論文叢刊，155-181頁。 26.陳定國、徐金水(1978)，「中外技術合作之有效途徑」，工業技術研究院金屬工業研究所。 27.陳淑儀(1989)，「國際技術移轉與績效相關變數之研究」，中原大學企業管理研究所，碩士論文。 28.陳忠仁(1994)，文化差異程度與國際技術移轉績效關係之研究—以在台外資企業為例，私立中原大學企業管理研究所未出版之碩士論文。 29.陳忠謙(1995)，「企業主管領導型態與員工溝通滿足及組織承諾之關係研究—以台灣石化業為例」，成功大學企業管理研究所,碩士論文。 30.溫元昌(1998)，技術特性、技術能力與技術移轉途徑關係之研究，國立中正大學企業管理研究所未出版之碩士論文。 31.黃家齊(1990)，「技術引進成效影響因素之研究」，中原大學企業管理研究所碩士論文，中壢。 32.趙永明(1991)，高科技產業技術移轉影響因素之研究—以我國積體電路工業為例，國立交通大學管理科學研究所未出版之碩士論文。 33.蔡裕源(1994)，「移轉技術類型、管理機制與移轉績效關係之研究」，國立政治大學企業管理研究所，博士論文。 34.劉瑞圖(1994a)，科技管理(八)—科技企業的技術移轉，工業簡訊，24(7)，37-47。 35.經濟部投資業務處(1988)，「技術合作條例」，經濟部投資業務處，台北。 36.賴榮仁(1986)，美日在台企業管理技術移轉之研究，國立政治大學企業管理研究所未出版之博士論文。 37.賴士葆(1990)，研究發展/行銷/製造三部門互動與新產品開發績效相關之研究，台北:華泰書局。 38.謝文凱 (1993)，「技術移轉過程互動程度與技術移轉績效關係之研究-以共同研發聯盟為例」，中原大學企業管理研究所碩士論文，中壢。 39.鍾興永,實施JIT 「採購的中心廠商與衛星廠商溝通指標績效研究」，台灣工業技術學管理技術研究所工業工程管理學程,碩士論文,1997. 40.蕭大正(1991)，「我國廠商技術引進績效之研究」，國立中山大學企業管理研究所未出版之碩士論文。 41.蕭峰雄，周皎瑜(1985)，我國財團法人研究機構技術移轉之研究—積體電路與機器人之個案研究，未出版手稿。 42.簡俊才(1997)，「互動機制,吸收能力與訓練對技術移轉績之影響—以工研院主導之共同研發聯盟為例」，國立暨南國際大學國際企業研究所未出版之碩士論文。 英文部分 1.Autio,E.,& Laamanen,T.(1995).Measurement and evolution of technology transfer: Review of technology transfer mechanisms and Indicators.Journal of Technology Management,pp.643-664. 2.Bandyopadhyay,S.R.,Robicheaux,A.,& Hill,J.S.(1994).Cross-cultural differences in intrachannel communications: The United States and India.Journal of International Marketing,pp.83-100. 3.Barason,J.(1966), " Transfer of Technical Knowledge by International Corporations to developing Economics ", American Economic Review,pp.259-261. 4.Baranson,J.(1970), " Technology Transfer Through the International Firm ",American Economic Association,Vol.60,pp.435-440. 5.Baron,R.A. (1983) Behavior in organization: Understanding and managing the human side of work.Taipei: Mei-Ya press,pp.313. 6.Beaumont,N.B.,& Schroder,R.M.(1997).Technology, manufacturing performance and business performance amongst Australian manufacturers.Technovation,pp.297-307. 7.Boman,W.C.,& Motowidlo,S.J. (1993) " Task performance and Contextual performance:the meaning for personnel selection research, " Human Performance,pp.99-109. 8.Brown,C.A. (1958) Communication means understanding.Personnel Administration,pp.12-16. 9.Candler,F.G.(1995),Fundamentals of Business communication,Chicago:IRWIN,INC. 10.Capon,N.,& Glazer,R.(1987).Marketing and technology:A strategic coalignment.Journal of Marketing,pp.1-14. 11.Chiou,J.S.,Lee,M.,& Calantone,R.(1996). International technology transfer from the peceipient's perspective: The difference between hard technology pursuers and know-how technology pursuers. Journal of Global Marketing,pp.5-22. 12.Cutler,W.G.(1989), " Acquiring Technology From Outside " ,R&D Management,pp.247-259. 13.Dance,F.E. and C.E.,Larson (1976) The function of human communication:A theoretical approach.N.Y.:Holt, Rinehart and Winston. 14.Davis, K. (1985), Human Relation in Business, N.Y.: McGraw-Hill Inc. 15.Dearing,J.W.(1993).Rethinking technology transfer. International Journal Technology Management,pp.478-485. 16.Derakhsani,S.(1983).Factors affecting success in international transfer of technology. The Developing Economies. 17.Dessler, G. (1977), Organization and Management, Englewood Cliffs, N.J.:Prentice-Hall Inc. 18.Dierdonck, R. V. (1990). The manufacturing/design interfacs. R&D Management,pp.203-219. 19.Eldin,H.K., " Problem of Technology Transfer to Developing Countries ",2nd International Conference for Technology Transfer,Cario,Egypt,May ,Publish in Conference Proceeding,1982. 20.Funk,F.E. and D.T.,Piersol(1954) Business and industrial communication from the viewpoint of corporation president. Speech dep.,Pardue University published,pp.143. 21.Goldhaber, G.M. (1979), Information Strategies: New Pathways to Corporate Power, Englewood Cliffs, N.J.: Prentice-Hall Inc. 22.Gregory, N., & Mohan, V. (2000). A typology of project-level technology transfer process. Journal of Operations Management,pp.719-737. 23.Gupta, A. K. (1987). Management the R&D marketing interface.Research Management,pp.38-43. 24.Harvey,B., " National Science Policy and Technology Transfer " Proceedings of Conference on Technology Transfer and Innovation,Washington DC:NSF,1966. 25.Holatius, K. (1995). Cultural adjustment in international technology transfer. International Journalal of Technology Management,pp.676-686. 26.Jegathesan, J., Gunasekaran, A., & Muthaly, S. (1997). Technology development and transfer: Experiences from Malaysia.International Journal of Technology Management,pp.196-214. 27.Katz,D. and R.L.,Kahn (1978) The social psychology of organization.N.Y.:Wiley and Sons press,P.22. 28.Keller and Chinta,R.T.and Sentron,R.R., " International Technology Transfer ; Strategies for Success " ,Academy of Management Executive,Vol.4 No.2,1990,pp.33-43. 29.Kelly,J.(1969)

Organization behavior. Dorsey press.pp.450. 30.Kokko,A.,1994,"Technology, market characteristics, and spillovers", Journal of Development Economics, Vol. 43, pp.279-293. 31.Kokko, A., R. Tansini and M. C. Zejan, 1996, "Local Technological Capability and Productivity Spillovers from FDI in the Uruguayan Manufacturing Sector",The Journal of Development Studies, Vol.32,pp.602-611. 32.Katz,R.,Rebentisch,E.S.,& Allen,T.J.(1996).A study of technology transfer in multinational cooperative joint venture.IEEE Transaction on Engineering Management, pp.97-105. 33.Lambe,C.J.& Spekman,R.E.(1997), " Alliances,external technology acquisition,and discontinuous technological change ",Journal of production Innovation Management,pp.102-116. 34.Lasserre, P. (1982). Training, key to technological transfer. Long Range Planning,pp.51-60. 35.Lewis,P.V.(1975) Organizational communications:The essence of effective management. Grid press. 36.Macdonald, S., & Williams, C. (1994). The survival of the gatekeeper.Research Policy, 23(1),pp.123-132. 37.Madu,C.N.(1989), " Transferring Technology to Developing Countries-Critical Factors for Success ",Long Range Planning,Vol.22,pp.115-124. 38.Mansfield, E.(1975), International technology transfer: Forms,resources, requirement and policies. American Economic Association,pp.372-376. 39.Mansfield,E.(1982), " Technology Transfer Productivity and Economic Policy ",W.W.Norton & Company,Inc. 40.Martin,M.J.C.(1984), " Managing Technological Innovation and Enterepreneurship ",Reston,Virginia:Reston Publishing Company Inc. 41.Martino,J.P. (1983) ,Technological Forecasting for Decision Making,2nd ed.,New York:North-Holland Publishers. 42.Mascarenhas,B.(1981).Planning for flexibility. Long Range Planning,pp.78-82. 43.McCloskey,G. (1967) Education and public understanding.N.Y.:Harper and Row. 44.Mohr,J.,Rober,J.F.,& Nevin,J.R.(1996).Collaborative communication in interfirm relationships: Moderating effects of integration and control.Journal of Marketing,pp.103-115. 45.Newman,W.H. and C.E.,Summer (1961) The process of management.N.Y.:Prentice-Hall,pp.59. 46.Ounjian, M. L. and Carne, E. B. (1987) " A Study of the Factors which Affect Technology Transfer in Multilocation Multibusiness Unit Corporation ", IEEE Transactions on Engineering Management,pp.194-201. 47.O ' Callaghan,R.,Kaufmann,P.J.,& Konsynski,B.R. (1992).Adoption correlates and share effects of electronic data interchange systems in marketing channel.Journal of Marketing,pp.45-56. 48.Patton,M.Q.(1987).How to use qualitative methods in evaluation.Newbury Park,CA:Sage. 49.Pace,R.W.and Faules,D.F.(1994),Organizational communication third edition,New Jersey:Prentice Hall,Inc. 50.Richman,B.M. and R.N.,Farmer (1975) Management and organizations .N.Y.:Random House press,pp.364. 51.Rogers,E.M.,& Solo,R.A.(1972).Including technological change for economic growth and development. East Lansing, Michigan:Michigan State University Press 52.Robock,S.H.and Simmonds,K. (1983) , " International Business and Multinational Enterprises,3rd ed.. Homewood:Richard D.Irwin,Inc,pp.460-463. 53.Rogers,D.P.(1977) The content of organizational communication.N.Y.:New York University. 54.Rosenberg, N. and Frischtak, C. (1985) , " International Technology:Concepts, Measures, and Comparisons, Pager, New York. 55.Rubenstein, Albert H. (1989) , Managing Technology in the Decentralized Firm. New York:John Wiley & Sons. 56.Ruekert,R.W.,& Walker,O.C.(1987).Marketing ' s interaction with other functional units:A conceptual framework and empirical evidence. Journal of Marketing,pp.1-19. 57.Schon D. A. (1967) , Technology and Change: The new Heraclitus. New .York: Delacorte,. 58.Schramm,W. (1954) The process and effects of mass communication.University of Illinois press,pp.3. 59.Sharif, M.N. and Islan, M.N. (1980) , " The Weibull distribution as a general model for forecasting technological change, " Techno Forecast Social Change,pp.247-256. 60.Sharif,M.N.(1988).Problems, issues and strategies for S & T policy analysis. Science and Public Policy,pp.195-216. 61.Sharif,N.and Ramanathan,K., " A Framework for Technology-Based National Planning " ,Technological Forecasting and Social Change,Vol.32,1987. 62.Shidan,D.(1984).Factors affecting success in international transfer of technology.The Developing Economics. 63.Simon,H.A.(1952)Decision-Making and administrative organization.N.Y.:Free press. 64.Smilor,R.W.,& Gibson,D.V.(1991).Technology transfer in multiorganization environment: The case rand consortia. IEEE Transactions on Engineering Management,pp.3-13. 65.Sounder,W.E. (1987) , Managing New Product Innovation. Lexington,MA:D.C. Health and Company. 66.Stein,L.W. (1989) ,Managing Technology.New York: McGrawHill Book Company. 67.Steven,E.(1983),Communication Through Libraries, Metuchen, N.J.:The Scarecrow,pp.35. 68.Strassman,W.P., " Technological Change and Economic Development:The Manufacturing Experience of Mexico and Puerto Rico " ,New York:Cornell University Press:2,1968. 69.Technology Atlas Team.(1987).Components of technology for resources transformation. Technological Forecasting and Social Chang,pp.19-35. 70.Teece,D.J.(1996), " Firm Organization,Industrial Structure, and Technological Innovation " ,Journal of Economic Behavior & Organization,pp.193-224. 71.Teece,D.J.,Pisano,G. & Shuen,A.(1997), " Dynamic Capabilities and Strategic Management " ,Strategic Management Journal,Vol.18,pp.509-533. 72.Trochim,W.(1989).Outcome pattern matching and program theory.Evaluation and program Planning,pp.355-366. 73.Webster ' s 1989,P.1872 74.Wong, J. K. (1995). Technology transfer in thailand: Descriptive validation of a technology transfer model. International journal of Technology Management,pp.788-796. 75.World Intellectual Property Organization(WIPO)(1977), Licensing Guide for Developing Countries, WIPO Publication No.620, VIII:28. 76.Xie,X.,1999.Contagion through Interactive Production and Dynamic Effects of Trade.International Economic Review,pp.165-186. 77.Yan,Aimin,and Barbara Gray(1994), " bargaining power,Management Contral, and Performance in United States-China Joint Ventures:A Comparative Case Study " Academy of Management Journal,pp.1478-1517.