

# Using Evolutionary Psychology to Explore the Behavior of the Network Communication Platform Conversion

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## ABSTRACT

Information systems (IS) plays an important role in a business organizations. Organizations are increasingly dependant on IS in order to resolve operating difficulties and provide problem solutions. This study aims to explain IS usage behavior, that portrays two important psychological traits (least effort and social interaction) from an evolutionary psychology perspective. Based on these two psychological traits, a new evolutionary theory, namely technology interaction theory. Self-efficacy theory is integrated into this new theory to explain the different behaviors among individuals who have the same psychological traits. Two propositions are provided by this study: (1) Increases in the degree of interaction within a system/technology lead to decreases in the degree of cognitive effort required from an individual to use the system/technology to accomplish a task. (2) Increases in the degree of cognitive adaptation to a system/technology lead to decreases in the degree of cognitive effort required from an individual to use the system/technology to accomplish a task. We collect qualitative data through ZMET of users that use the network communication platform conversion and derive mutual usage consensus within users.

Keywords : evolutionary psychology、least effort、social interaction、technology interaction theory、cognitive adaptation

## Table of Contents

封面內頁 授權書 中文摘要.....	iii	英文摘要.....	iv	誌謝.....	v	目錄.....	vi
圖目錄.....	ix	表目錄.....	xi	第一章 緒論 第一節 研究背景與動機.....	1	第二節 研究目的.....	4
第三節 研究範圍.....	4	第二章 文獻探討 第一節 科技接受模式的演化背景和缺點.....	6	一、科技接受模式的演變.....	6	二、科技接受模式的缺點.....	12
第二節 演化心理學.....	12	一、逐步演化的心理特徵.....	13	二、訓練效能增強和身心共同演化.....	14	三、最小努力原則.....	14
四、社交互動.....	15	五、最小努力原則與社交互動的研究背景.....	16	第三節 以演化心理學為基礎的資訊系統理論.....	20	第四節 互動.....	22
一、人與電腦的互動.....	22	二、人與人的互動：社會互動.....	23	第五節 即時通訊軟體.....	24	一、即時通訊的定義.....	24
二、即時通訊的溝通功能.....	24	三、即時通訊的發展歷史與現況.....	25	第六節 社群網站.....	26	一、社群網站的定義.....	26
二、社群網站的分類.....	26	三、社群網站的發展歷史與現況.....	28	第三章 研究方法 第一節 發現現行理論的不足.....	30	第二節 發展新的演化心理學理論.....	32
一、新的演化理論：科技互動理論.....	34	第三節 結合舊有理論.....	35	一、自我效能理論.....	36	二、整合自我效能理論.....	37
第四節 測試新結合的理論模式.....	39	一、ZMET隱喻抽取技術.....	39	二、研究對象.....	40	三、凱利方格法.....	40
四、ZMET隱喻抽取技術的研究步驟.....	41	第四章 研究結果 第一節 受訪者基本資料.....	45	第二節 訪談結果.....	46	第三節 訪談結果統計.....	195
第五章 結論 第一節 研究結論.....	222	第二節 研究貢獻.....	226	第三節 管理意涵與學術意涵.....	227	第四節 後續研究建議.....	228
參考文獻.....	229						

## REFERENCES

- 中文部分 1.王彥程(2000)。臺灣企業員工 interpersonal communication 能力之衡量及其量表發展之研究。私立長榮管理學院經營管理研究所碩士論文。 2.古明泓(2004)。探討即時通訊之使用動機、使用行為與滿足之關係。國立政治大學。 3.吳純慧(2010)。以演化心理為基礎探索資訊系統使用之行為。國立雲林科技大學資訊管理系博士班。 4.辛莉萍(2010)。以網路社群使用者的知覺價值探討持續使用行為意向：以Facebook為例。中華大學資訊管理學系碩士班。 5.沈碩彬(2009)。論校園合作與衝突：以演化心理學的觀點，初等教育學刊，第32期，55-74。 6.周季穎(2005)。電腦中介傳播對口碑行為的影響。東吳大學商學院企業管理學系碩士班。 7.施雅今(2010)。個人社群網站使用行為之探討。國立高雄第一科技大學國際管理碩士學位學程。 8.洪筱華(2001)。國內兒童網站互動性初探。2001年台灣區學術網路研討會暨網路學習與繼續專業教育國際會議論文集上冊。 9.張耿益(2001)。資料庫行銷模式之研究-以ASP教學網站為例。中國文化大學資訊管理研究所。 10.劉穎潔(2000)。入口與社群網站之創業模式比較與動態策略發展。國立臺灣大學國際企業學研究所。

11.鮑珏蓉 (2011)。Facebook使用意圖影響因素之探討-科技接受模式與社會資本整合性觀點。國立成功大學經營管理碩士學位學程。英文部分

- 1.Adams, J.S., 1963, "Towards an understanding of inequity", *Journal of Abnormal and Normal Social Psychology*, Vol. 67, pp. 422-436.
- 2.Adams, J.S., 1965, "Inequity in social exchange", *Advances in Experimental Psychology*, New York: Academic Press, pp. 267- 299.
- 3.Bagozzi, R.P., 2007, "The legacy of the technology acceptance model and a proposal for a paradigm shift", *Journal of the Association for Information Systems*, Vol. 8, No. 4, pp. 244-254.
- 4.Bandura, A., 1977, "Self-efficacy: Toward a unifying theory of behavioral change", *Psychological Review*, Vol. 84, pp. 191-215.
- 5.Boomsma, D. I., Willemsen, G., Dolan, C. V., Hawkey, L. C., & Cacioppo, J. T., 2005, Genetic and environmental contributions to loneliness in adults: the Netherlands twin register study. *Behavior Genetics*, 35(6),745-52.
- 6.Buss, D.M., 1999, *Evolutionary Psychology: The New Science of the Mind*, Needham Heights, MA: Allyn and Bacon.
- 7.Buss, D.M., 2009, "The great struggles of life: Darwin and the emergence of evolutionary psychology", *American Psychologist*, Vol. 64, No. 2, pp. 140-148.
- 8.Compeau, D., Higgins, C., 1995, "Computer self-efficacy: Development of a measure and initial test", *MIS Quarterly*, Vol. 19, No. 2, pp. 189-211.
- 9.Confer, J.C., Easton, J.A., Fleischman, D.S., Goetz, C.D., Lewis, D.M.G., Perilloux, C., Buss, D.M., 2010, "Evolutionary psychology: controversies, questions, prospects, and limitations", *American Psychologist*, Vol. 65, No. 2, pp. 110-126.
- 10.Cosmides, L., Tooby, J., 1997, "Dissecting the computational architecture of social inference mechanisms", *Characterizing human psychological adaptations. Ciba Foundation Symposium208*, pp. 132-161.
- 11.Davis, F., 1989, "Perceived usefulness, perceived ease of use, and user acceptance of information technology", *MIS Quarterly*, Vol. 13, No. 3, pp. 319-340.
- 12.Davis, F.D., 1986, "A Technology Acceptance Model for Empirically Testing New End-user Information Systems Theory and Results", Ph.D. dissertation, Sloan School of Management, Massachusetts Institute of Technology.
- 13.Diener, E., Seligman, M., 2002, "Very happy people" *Psychological Science*, 13, 81-84.
- 14.Fishbein, Ajzen., 1975.*Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research Reading.* Addison- Wesley Pub.
- 15.Ghiselin, Michael T., 1973, "Darwin and evolutionary psychology: Darwin initiated a radically new way of studying behavior." *Science*, Vol 179(4077), Mar 1973, 964-968.
- 16.Hagel III, J., Armstrong, A., 1997, "Net Gain: Expanding Markets Through Virtual Communities", Boston, MA: Harvard Business School Press. ([http://books.google.com.tw/books?id=\\_PI5mfbP5JgC&printsec=frontcover&dq=Net+Gain&hl=zh-TW&sa=X&ei=a6baT468GIGfiQf05-WfCg&ved=0CDUQ6AEwAA#v=onepage&q=Net%20Gain&f=false](http://books.google.com.tw/books?id=_PI5mfbP5JgC&printsec=frontcover&dq=Net+Gain&hl=zh-TW&sa=X&ei=a6baT468GIGfiQf05-WfCg&ved=0CDUQ6AEwAA#v=onepage&q=Net%20Gain&f=false))
- 17.Hewett, T., Baecker, R., Card, S., Carey, T., Gasen, J., Mantei, M., Perlman, G., Strong, G. & Verplank, W., 2009, "Human-computer interaction. In Hefley", B. (ed.), *ACM SIGCHI* (<http://old.sigchi.org/cdg/cdg2.html>)
- 18.Karatepe, O.M., Uludag, O., Menevis, I., Hadzimehmedagic, L., and Baddar, L., 2006, "The effects of selected individual characteristics on frontline employee performance and job satisfaction", *Tourism Management*, Vol. 27, No. 4, pp. 547-560.
- 19.Kock, N., 2004, "The psychobiological model: towards a new theory of computer-mediated communication based on Darwinian evolution", *Organization Science*, Vol. 15, No. 3, pp. 327-348.
- 20.Kock, N., 2009, "Information systems theorizing based on evolutionary psychology: An interdisciplinary review and theory integration framework", *MIS Quarterly*, Vol. 33, No. 2, pp. 395-418.
- 21.Lee, Y., Kozar, K.A., and Larsen, K.R.T., 2003, "The technology acceptance model: Past, present and future", *Communications of the Association for Information Systems*, Vol. 12, pp. 752-780.
- 22.Liu, Z. and Lang, Z.Y., 2004, "Factors influencing distance-education graduate students' use of information: A user study", *Journal of Academic Librarianship*, Vol. 30, No. 1, pp. 24-35.
- 23.MacEachren, A., Cai, G., Sharma, R., Brewer, I., and Rauschert, I., 2005, "Enabling collaborative geoinformation access and decision-making through a natural", multimodal interface, *International Journal of Geographical Information Science*, Vol. 19, No. 3, pp. 293-317.
- 24.Marchewka, J.T., Chang L., and Kostiwa, K., 2007, "An application of the UTAUT model for understanding student perceptions using course management software", *Communications of the IIMA*, Vol. 7, No. 2, pp. 93-104.
- 25.Muirhead, B., and Juwah, C., 2004, "Interactivity in computer-mediated college and university education: A recent review of the literature", *Educational Technology & Society*, Vol. 7, No. 1, pp.12-20.
- 26.Nardi, B., Whittaker, S., and Bradner, E., 2000, "Interaction and outeraction:instant messaging in action", Paper presented at the Computer Supported Cooperative Work,New Orleans, Louisiana, USA.
- 27.Nicholson, S., 2002, "Socialization in the 'virtual hallway': Instant messaging in the asynchronous Web-based distance education classroom", *Internet and Higher Education*, 5(4), pp.363 – 372.
- 28.Pinker, S., 1999, "How the Mind Works", WW Norton & Co. New York, pp. 386-389.
- 29.Romm N. C., Pliskin, and Clarke R., 1997, "Virtual Communities and Society: Toward and Integrative Three Phase Model. International," *Journal of Information Management*, pp.261-270.
- 30.Short, J.A., Williams, E., and Christie, B., 1976, "The social psychology of telecommunications", New York: John Wiley & Sons.
- 31.Shute, N., 2008, "Why loneliness is bad for your health", *U.S. News and World Report* (<http://health.usnews.com/health-news/family-health/brain-and-behavior/articles/2008/11/12/why-loneliness-is-bad-for-your-health>)
- 32.Venkatesh, V., 2000, "Determinants of perceived ease of use integrating control, intrinsic motivation, and emotion into the technology acceptance model", *Information Systems Research*, Vol. 11, No. 4, pp.342-365.
- 33.Venkatesh, V., and Davis, F.D., 2000, "A theoretical extension of the technology acceptance model: four longitudinal field studies", *Management Science*, Vol. 46, No. 2, pp. 186-204.
- 34.Venkatesh, V., Morris, M.G., Davis, G.B., and Davis, F.D., 2003, "User acceptance of information technology: Toward a unified view", *MIS Quarterly*, Vol. 27, No. 3, pp. 425-478.
- 35.Zaltman, G., 2002, "Hidden minds", *Harvard Business Review*, Vol. 80, No. 6, pp. 26-27.
- 36.Zipf, G. K., 1949, "Human Behavior and the Principle of Least Effort: An Introduction to Human Ecology", Addison-Wesley, Mass.

網站資料 1.創市際市場研究顧問 [http://www.insightxplorer.com/news/news\\_04\\_20\\_11.html](http://www.insightxplorer.com/news/news_04_20_11.html) <http://news.ixresearch.com/?p=4299> 2.資策會find網站 <http://www.find.org.tw/find/home.aspx?page=many&id=314>