

企業服務創新力競爭實證研究：以台灣百大品牌服務業 為例

Competitiveness of Business Innovative Services Model: An Empirical Study on Taiwan's Top 100 Service Brands

第一作者 施伶蓁 Ling Chen Shih

財團法人資訊工業策進會

Institute for Information Industry

leslielcs@iii.org.tw

第二作者 莊順斌 Shun Pin Chuang

財團法人資訊工業策進會

Institute for Information Industry

pinzai@iii.org.tw

第三作者 劉芳梅 Julia Liu

財團法人資訊工業策進會

Institute for Information Industry

julialiu@iii.org.tw

第四作者 林玉凡 Harriot Lin

財團法人資訊工業策進會

Institute for Information Industry

Harriot@iii.org.tw

摘要

科技與服務創新的結合是近年重要趨勢。過去文獻對於服務創新認知的研究，以及科技融合服務創新傳遞所創造的效益較少著墨。本研究從顧客觀點，探討品牌導入科技，對創新服務傳遞的認知程度，及其後效益。

本研究建立服務創新競爭力模式，檢視創新服務傳遞流程的現況與顧客行為趨勢。採質量化並進，研究台灣百大品牌服務業。服務創新競爭力模式，包含創新投入、創新服務傳遞流程、關係品質及品牌認同度。經結構方程模式驗證，各項間存在正向顯著影響。品牌服務業者透過顧客導向服務創新競爭力模式，可累積品牌服務創新能量，亦可深化顧客對業者服務創新的有感性。

關鍵字：服務創新、百大品牌服務業、創新服務傳遞流程、關係品質、品牌認同度

Abstract

For the past few years, combining technology with service innovation has been a dominant trend. However, cognition of service innovation and the benefits of service innovation transfer were only sketchily described in early literature. So this study tries to examine customers' cognition and companies' benefits when brand operators introduce technology to service innovation.

This study develops a competitiveness of business innovative services model and uses quantitative and qualitative research methods to validate the real-life experience and the trend of customers' behaviors among Taiwan's top 100 service brands.

This model includes innovation input (investment), process (delivery), and output (result). Each variable's correlation is significantly positive. Service providers continue to accumulate experience about service innovation and arouse customers' feeling toward this model.

Key words: Service Innovation, Taiwan's top 100 service brands, delivery process of innovative services, relationship quality, brand identity levels

1. Introduction

1.1 Research Background and Motive

The service industry plays a pivotal role in Taiwan's economic development, and its production to the Gross Domestic Product (GDP) ratio has been on the rise over the years. According to the World Trade Organization (WTO), this ratio climbed to 68% in 2011, with the production value of Taiwan's service industry going up from NT\$9.4 trillion to NT\$9.6 trillion in 2011-12. And the trend of service experience economy featuring "interaction and experience" that emerged from the introduction of technology has effectively enhanced service standards, facilitating an integration of technology elements into the overall service thinking, process, and interaction interface of experience innovation.

The prevalence of mobile devices led by the cell phone and the popularization of the Internet have helped change the consumer behavior in use and also helped abandon the now-defunct practice of using computers for connection. A survey from Ipsos MediaCT, 2013, made known by Google shows that more than half, or 51%, of the people in Taiwan owned smart mobile phones at the end of 2013, a 20% growth from the preceding year. Most of them used the smart device for networking, such as seeking product information, linking social media, and shopping online. They also employed the phone to watch TV, read books, log onto the web, listen to the music, and even to multitask when seeing the movies. All these indicate that the extensive use of the smart phone has become an indispensable part of the daily life.

Another focal point is Facebook. Nearly 67.8% of the people in Taiwan used FB, with the number of this social utility users surpassing that of all other Asian countries, according to Cereja Technology, 2014. With an integrated functional system, FB users, in connection with mobile devices, are able to not only conduct GPS tracking, upload photos, and pass on messages but also synchronize personal schedules to improve their performance of activity executions. As far as brand operators are concerned, the power of social media, together with fans pages, can be explored to expand the networking of existing consumers as well to spread information about brands, services, products, and promotions, a commercial potential worth further tapping.

The use of smart phones and the enhancement of networking quality has not only changed the habit of people using the cell phone but also increased their dependence on technology, and further heightened their expectations of more applied services. Therefore, the value and intensity of technology-added innovation is becoming an important task for the businesses to make differentiation through comprehensive strategies in order to gain business competitiveness. Having a big advantage in technology advancement, Taiwan may try to bring in technology elements to the process of service delivery so as to help the service industry contribute much more greatly to the economic development of the country.

As more and more business operators are seeking ways to improve services for the betterment of the future life, technology has obviously exerted enormous influence on service offerings and interaction with consumers. For example, food and beverage operators are thinking of how to combine the communication channel with the device used by the consumer by use of such approaches as social media and QR code aiming to extend their services or integrated marketing communication through apps in hope of directing the online buzz to trading channels. Banks are using technology to improve their services by way of high speed, immediacy, and efficiency. The same goes for e-commerce players who are keen on using technology to create experience-type shopping environments through personal experiences, in addition to deepening their interaction with consumers. As for aviation operators, they are usually early adopters of technology, and therefore their customers are more receptive of technology applications provided. For this reason, the operators are highly active in using technology to increase the sense of value in experience among customers in order to strengthen their services to the recipient.

As the phenomenon of change is found both among business consumers and operators, the researchers of this study, by establishing a new gauge model, decided to conduct a research on this subject with a view to examining the recognition difference between the two ends of the service industry and to helping service brand operators create greater value.

1.2 Research Objective

In the view of Joseph Alois Schumpeter (1934), “innovation” referred to new production methods adopted by the entrepreneurs to meet the needs of consumers and, at the same time, to enlarge the benefits of the businesses. Stephen Robbins (Lee Ching-fen, Lee Ya-ting, and Chao Mu-fen, 2006) maintained that innovation was a new idea to be used for improving production, process, and service. Furthermore, Crowe and Brennan (2007) was of the opinion that innovation was tantamount to a strategic approach able to help the enterprises gain benefits. It had a high correlation with business competitiveness and innovation capability. Taking the definitions given by various scholars into consideration, this study came up with a theory that innovation can be used in different industries, be it for product creativeness, modification, or the needs based on requirements, to improve service and process, with an ultimate feedback for better benefits for the enterprises.

To the enterprises, service operators in particular because of the nature of keen competition, “service innovation” is now a matter of strategy thanks to the behavior change caused by the introduction of technology and the impact created by experienced economy and customer-oriented thinking introduced from overseas. As a result, consumers give a high appraisal of “interaction satisfaction” and “true appreciation.” Since 2010, a lot of scholastic research institutes as well as management consulting firms have put into study and introduced theories about innovation methodology aimed at helping the service industry transform to a higher level of operation and gain higher value

through product differentiation.

In comparison with various assessment systems for service innovation introduced by scholastic research institutes both at home and overseas, this study found out that the Service Sector Innovation Index (SSII) and the European Innovation Scoreboard (EIS) developed by the European Commission, 2008, are targeted at both the national and industry levels (Hugo Hollanders, 2008). As for the Innovation Capacity Index (ICI) adopted by the European Business School (EBS), it is also set at the national level with a view to helping governments work out strategies to upgrade industries of the national level (Augusto Lopez-Claros Yasmina N. Mata, 2011). In addition, a preparedness level for service innovation created by the Service Research & Asia Pacific (SriiAP) (Gao Yi-fan, 2010) is a technique for helping its members exam their current innovation capacity.

It is discovered from the research in the field of service innovation that service innovation occupies a decisive position in the competitive edge of a nation as well as an industry. However, since “human beings” are the core of the service industry, emphasis must be placed on the true feeling at the “touch point of interaction” as the maintenance of the customer relationship thereafter, an experience that is the source of brand value the key to brand management. In view of this, the feeling felt by customers during the “actual consumption process” is taken much more seriously by the service industry, compared with that from the national and the overall industry perspectives.

A study of relative researches on Taiwan’s current service industry shows that most concentrated on their description of the efforts made by the enterprises on service quality, customer satisfaction, or image innovation and that rarely touched upon were assessments of the consumer awareness of “service innovation.” As the “feeling level” of consumers during the course of a real-life experience is the key to the success in evaluating the effects, the researchers of this study established a model for “the competitiveness of business innovation services” aiming to proposing a clear and definite direction for the industry to stimulate service innovation. The model came about through a series of studies starting in 2012 on the trend of the service innovation field, case observations, research findings from scholars at home and overseas, discussions with and advice from domestic scholars, and opinion exchanges with concerned industry representatives. To appraise the workability of this model, a survey on the consumption in the end-use sectors was conducted to understand the essential consumer needs in innovation on which the service providers could be based in producing their service design.

2 Literature Review

2.1 Competitiveness of Business Innovative Services Model

The competitiveness of business innovative services must be built from within

through a sense of common identity, translated into strategy, expanded into part of the customer service, so as to establish recognition among customers and obtain feedback from brand identity. Homburg, Workman, and Jensen (2002) held that this is a mechanism to be worked bottom up and processed from within to without. Heskett, Jones, Loveman, Sasser, and Schlesinger (1994) maintained that there is a direct link between a company's internal service quality, external customer value, and its capability for profit making. Based on this theory, they came up with a service profit chain model, which establishes relationships between profitability, customer loyalty, and employee satisfaction, loyalty, and productivity. This model has been testified for its workability in many industries and enterprises. In view of the above theories advanced by many scholars, various parts within a system are linked, resulting in a cause and effect relationship. Therefore, the researchers of this study first developed a basic systematic model under the form of input, process, and output (IPO) and then extended it into a model for the competitiveness of business innovative services (See Figure 1). Research concept and content of this study are described as follows:

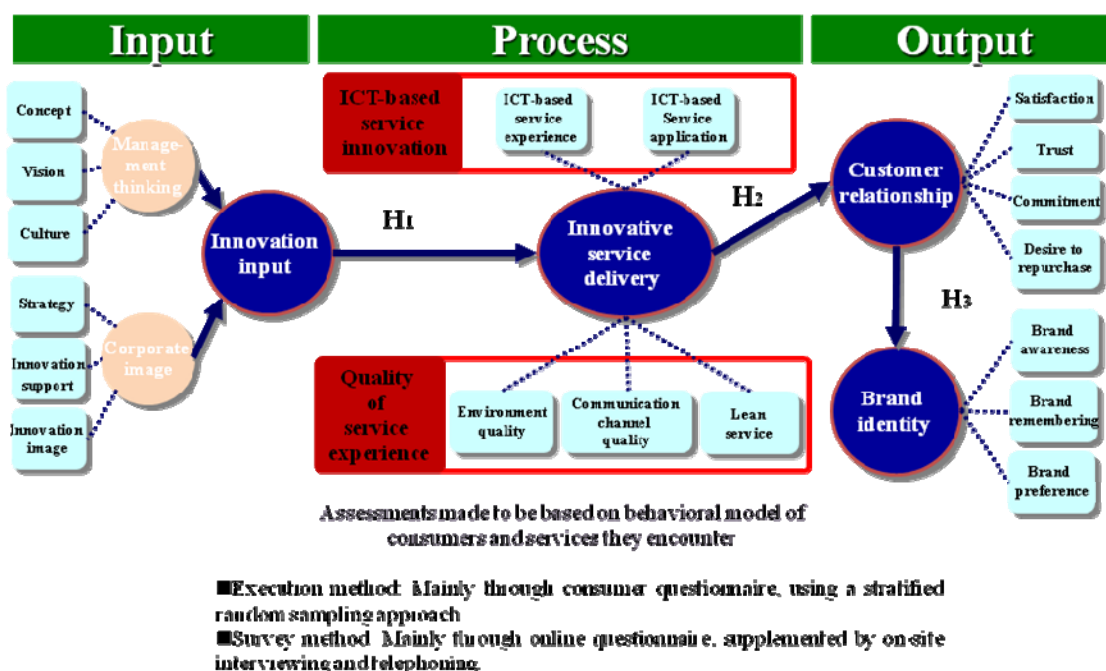


Figure 1 Competitiveness of business innovative services model
Source: This study

2.2 Innovation Input (Investment)

Homburg et al. (2002) was of the view that when devising their organizational structures, service-oriented retailers should translate the innovation concept into their corporate culture and strategy so that a sense of direction can be built. Many scholars

believe corporate culture would exercise enormous influence on organizational performance (Moorman, Deshpande, & Zaltman, 1993; Hurley & Hult, 1998) . According to the definition provided by Deshpande and Webster (1989), organizational culture refers to common beliefs and values that will help employees understand organizational operations and functions as well as behavioral norms they should follow. Thus, if a company is positioned as one embracing innovation as part of its culture, its innovation capability can be enhanced, and so is its adaptability to market changes. Consequently, the potential of this company for delivering a better business performance is greater. In other words, the practice is able to help consumers be aware of, and understand, the appeal of the company from the information announced so as to boost their support of the brand leading to a better performance for the firm. For this reason, in the category of innovation input, corporate culture with a touch of innovation is defined as part of “management thinking.”

Besides, literature on corporate image indicates that consumers would form their impression about a certain company through various kinds of information. Be it positive or negative, strong or weak, detailed or vague, this piece of information would affect the behavior of consumers toward the company. Keller and Aaker (1998) held that corporate image would reduce the inherent risk involved in service, a phenomenon that would help customers gain positive perceptions – a sense of trust and quality – about the company, resulting in an effect on consumers’ purchasing intentions. Walter and Paul (1978) even defined corporate image in terms of its attributes, including subjectivity, filtering, elaboration, and changeability, with its major dimensions comprising company image, function image, and brand image. In view of this, this study, when dealing with innovation input, included in its assessments both “corporate image” and “management thinking.”

2.3 Innovation Process (Delivery)

Looking at the development track of the industry and the key quality customers are concerned with, one discovers that the “real feeling during the process of service experience” is a focal point to be carefully assessed. Accordingly, dividing the concept into three service stages of before, middle, and after, the researchers of this study placed their emphasis on the five touch points facing consumers during their service experience process, namely information collection before the service, management of official websites and social media fans pages, marketing approaches and items, personal interaction during the service process, and the building of environment atmosphere. Based on this approach, the researchers, after consulting a statement made by Brady and Cronin (2001), came up with a three-dimensional scheme to assess the service quality perceived by customers – interaction quality, environment quality, and result quality.

In addition, notes and commentary made by Spenner and Freeman (2012) were taken into account. Extending the concept of lean service from the manufacturing industry to the service industry, Spenner and Freeman stressed that clear and instant

response is the key issue for the service industry. Further on the line, Dixon, Freeman, and Toman (2010) reiterated that if a service company wants to win support from its customers, it must deal with customer complaints in a serious, speedy, and comprehensive fashion in order to create a sense of satisfaction on the part of its customers. The scholars developed a customer effort score index to measure various physical and online channels gone through by customers, service approaches, and key service assessment elements. This study developed a three-dimensional structure in the process of innovative service delivery covering environment quality, communication channel quality, and lean service by integrating the experience-oriented service quality with the effort level for customers and the factual content of service.

Moreover, the ICT-based service concept can be incorporated. Gallouji (2002) mentioned that more and more research documents are dividing service innovation into three categories, one of which being service innovation through technology applications. Miles (1993) believed that the user-friendly feature of ICT would play a key role in the rapid development of the service industry because ICT had changed the cost input of the service industry, the building of its service environment, and the quality displayed in the interaction service. This statement has been recognized by the Organization for Economic Cooperation Development (OECD), confirming it to be a future development trend for the service industry.

With the progress of the Internet and information technology, a new type of interaction channels that helps change the consumer behavior has been established (Kwak, Fox & Zinkhan, 2002). And therefore the combination of technology with service innovation has been regarded as an important trend and issue, despite of a cross-boundary support question concerning the technological scopes and service fields between the two. Den Hertog and Bliderbeek (1999) proposed a supplemental type relationship among the four driving factors of the ICT-based service innovation, service concept, client interface, and the system innovation for service streaming. Because of the change in the behavioral model as a result of the introduction of technology, there are more and more research projects falling into this field, such as the study of the effects of the IT-based service on service quality and customer satisfaction to be made by Zhu, Wymer, and Chen (2002). From the perspective of the management capability of service innovation, Den Hertog et al. (2010) probed into the relationship between ICT and service innovation in six dimensions under the theory of a resource-based view and from a mobile resource management perspective. Four other scholars, Liang, Ho, Li, and Turban (2011) made a study using technology and social groups as the cause to examine the customer relationship quality. Based on the various studies by scholars on the role technology is playing and its effects in the delivery of service, positioning, and assessment, this study decided to include the two factors of “the ICT-based service application” and “the ICT-based service experience” in its examination of the innovative service delivery.

2.4 Innovation Output (Result)

As for the innovation output, there are two aspects, namely customer relationship and brand identity. Since the service industry has the common traits and its market entrance barrier is low, its is easier for customers to change brands with less costs. Therefore, how to establish a special position in the mind of customer under keen competition has become a prime consideration among the enterprises. It is found in cases concerning the service industry that “uniqueness,” “customization,” and “attachment of importance to clients” are the guidance the enterprises are looking to and that establishing and maintaining an indispensable atmosphere is the core. If a company wants to reap long-lasting and stable benefits from the relations with its customers, it must bear in mind that the combination of customer and quality is the key to the realization of mutual benefits. The advantage of managing a good customer relationship can be gained from a higher efficiency of purchase on the part of customers, in addition to substantial profits for the company.

The three concepts of satisfaction, commitment, and trust are the connotation of relationship quality shared by most scholars, both at home and overseas, when doing research on the field of customer relationship and relationship quality (Crosby, Evans, & Deborah, 1990; Dorsch, Swanson, & Kelley, 1998; Dwyer & Oh, 1987; Kumar, Scheer, & Steenkamp, 1995; Walter, Muller, Helfert, & Ritter, 2003). This study has taken into consideration of the real benefits to the industry that are testified in the various empirical studies. Also included in this study is the concept of “relationship,” a term used in the marketing management to demonstrate the repurchase intention of customers and its substantial contributions to the businesses.

The customer’s primary feedback in the establishment of the model for the competitiveness of business innovative services is the customer’s support of the “brand.” As the enterprises deem brand management a highly important issue concerned with benefits and profits, this study also included the item of brand value and benefits into its research when dealing with the aspect of innovation output. Speaking of the customer-based brand value and benefits, Keller and Aaker (1998) pointed out that they come from brand awareness and brand image. Awareness refers to the recognition level for brands and the remembering level. In recent years, researchers have placed emphasis on brand preference when studying brands or doing market research. For this reason, brand preference was also included in this study.

In compiling related literature for the establishment of the model for the competitiveness of business innovative services, this study proposed the following three hypotheses:

H₁ : Innovation input has a positive effect on the delivery of innovative services

H₂ : The delivery of innovative services has a positive effect on customer relationship

H₃ : Customer relationship has a positive effect on brand identity

3 Research Methodology

3.1 Data Collection

This study adopted both quantitative and qualitative approaches simultaneously and used Taiwan's top 100 services brands as its research target. In the qualitative approach, eight firms with the index significance were picked for in-depth interviews. What this study did was to do in-depth investigations after the results of the quantitative analyses were produced. As for the quantitative approach, online questionnaires were used, with a total of 10,000 valid samples collected. Depending on the attributes of brand operators and their customers, those answering the questionnaires were strictly chosen, defining them as responders that had "used, accepted or experienced a specific brand in the recent period of time" so that the quality level of correctness and strictness was ensured.

3.2 Gauge Development

The gauge for the innovation input used by this study was the result in reference to the viewpoint on the customer-oriented businesses made by Homburg, Hoyer, and Fassnacht (2002) and the statement on innovation climate and corporate image made by Bharadwaj and Menon (2002) as well as Walters (1978). Since their assessments were based on the feeling and recognition of customers, their gauge system was adopted by this study to be transformed as a customer perspective for survey questions. The gauge for the innovative service delivery was developed to be based on the definitions of various sub-dimensions given by Dixon, Freeman, and Toman (2010). The customer relationship demonstrated in the innovation output was established in reference to the assessment variables used by ACSI and JCSI for customer satisfaction and other existing measurers, with public praise and the gauge for repurchase intention used by Reichheld (1996), Heskett et al., Bearden and Tell (1983), and Oliver (1997). As for brand identity, the definition and the gauge developed by Keller (1993) and Aaker (1996) were adopted.

3.3 Tools for Quantitative Analysis

About quantitative statistical analysis, descriptive statistics were employed, in addition to exploration-oriented factor analyses, inspection-oriented factor analyses, and structural formula models. Tools for statistics purposes included SPSS20.0 and Amos18.0.

4 Data Analysis and Hypothesis Verification

4.1 Sample Description

In terms of gender, male constituted 49.4% while female representing 50.6%. Age wise, 19.2% were 45 and above, the highest, followed by 17.1% for those aged 25-29 and 17% for those aged 30-34. More than half, or 53.5%, had college degrees, followed by those owning master's degrees or higher, at 23.5%. As for occupation, office workers were the majority at 42.5%, followed by students, 20.4%. Monthly income per person was correspondent with the attributes of age and occupation, with the range from NT\$30,001 to NT\$40,000 representing the highest, or 19.8%, followed by that between NT\$20,001 and NT\$30,000 at 17.2%.

4.2 Testing on Trust and Effectiveness Levels of All Dimensions

The measurement basis for the unified trust level analysis was formed in accordance with the a coefficient adopted by Cronbach (1951). At the suggestion of Nunnally (1967), Cronbach's a coefficient must be at least 0.7 to ensure being trustful. The trust level for the five dimensions of the model for the competitiveness of business innovative services herewith all reached 0.9. The level was heightened when deleting one question item, and so was decided to do in this study. As a whole, the dependability of this study is extraordinarily high. The trust levels for innovation input, customer relationship and brand identity are good (more than 0.7 when referring to the Cronbach coefficient), so their level in this regard are quite acceptable, in line with the general threshold index adopted by scholars.

4.3 Model Hypothesis Testing

The structural formula model was used to testify the hypothesis for a structural relationship aiming to exam and confirm if data support the cause and effect of the hypothesis. Assessments of the index for the appropriateness level showed that GFI (0.900), CFI (0.958), NFI (0.957), and IFI (0.958) met the standard threshold while those of RMSEA (0.06), AFGI (0.882) did not meet the threshold suggested by scholars but pretty close. Besides, the results of the hypothesis testing also indicated that innovation input exerted a positive influence on innovative service delivery while innovative service delivery giving a positive influence over customer relationship, and that customer relationship exercised a positive influence on brand identity. Accepting H1-H3, this study firmly believes that the testing results are identical to the statements made by scholars both at home and overseas.

5 Conclusion

5.1 Research Results

In the past, scholars had endorsed a theory advanced by Miles (1993) that ICT was to be the key to the rapid development of the service industry's service quality and

environment building. In his empirical studies, Liang et al. (2011) stated that technology and social groups were the cause of customer relationship. Testified under the structural formula model, the model for the competitiveness of business innovative services developed by this study was proved to be quite positive among the various dimensions. The higher input the brand service operators provided the greater identity level the customers had toward innovation service delivery. Accordingly, the identity level for innovative service delivery would affect a positive relationship with brands, including intention, trust, and commitment. A high cohesiveness in customer relationship would help raise customers' brand identity levels. By promoting the above-mentioned customer-oriented service innovation model, brand service operators are able to accumulate their capacity for brand building continuously and deepen customers' feeling levels for service innovation provided by brand service operators.

An analysis of the performance on innovative service delivery by the top 100 service brands shows that consumers speak highly of environment quality, lean service level, and communication channel quality. The three are classified as features that have "service experience quality," indicating the achievement made in the promotion of experienced economy and the importance service providers attach to the concept of actuality. Compared with a similar survey conducted in 2012, it is discovered that consumers have given a greater approval of the practice taken by brand service operators in technology experience and usage. Preliminary testing reveals that both the trust level and appropriateness index have reached an adequate standard, meaning the dimensions and gauge systems used in the innovative service delivery herewith have been in consistency with high trust levels. The results can be used for future studies, and this is the most notable contribution this study has made.

The customer relationship and brand identity level is the key to success in corporate management. Because of the intrinsic nature of the service industry, satisfaction and loyalty alone will only make a modest contribution in terms of substantial effects for the businesses. Nevertheless, technology can help elevate the service quality and even extend the management of interaction and relationship from real world to virtual world. Taking the operation of the Facebook fans pages for example, if consumers organize a fans page for a certain brand on Facebook, the identity level for customer relationship associated with that brand is quite obvious. The results of the analysis done by this study prove the existence of the influence on this relationship.

5.2 Management Connotation

The findings summarized from qualitative interviews with brand operators and quantitative surveys on customers show that the trend reflecting the change of consumer behavior has once again built up the service thinking and that the experienced economy developed since 1999 has stimulated an economy that can be designed, arranged, and felt by customers with a sense of participation. The physical service touch point that has long been attached with importance is now expanded to a virtual environment for experience thanks to the high penetration of the Internet, with an increase in the site design for a

24-hour service interaction. Another important change is the diversity of platforms for consumer interaction and channels for communication, a development that helps produce direct beneficial results through a combination of e-commerce and the web-based cash flow.

The impact brought in by intelligent life and technology applications not only has effected the use by consumers of the terminal carrier but also has prompted the needs for service and interaction through the terminal carrier that can be geologically positioned and instantly connected with the web. Multi-channel mobile app service design used in Location Based Service (LBS), such as Facebook API for location tracking and map guide, or provision of shopping instructions on designated locations through connection with information on product and promotion activities offered by nearby stores, is a good case in point.

A further look into the habit of consumers using technology finds that the finger stickiness level for Facebook is higher than that for other applications. Be it fellow travelers identifying, photos or graphics uploading, or messages sharing, the practice on the online social networking service has become a common habit for interpersonal communication and chatting in real life. Because of the frequent use by consumers of Facebook, many enterprises are making efforts to establish their interactive relations with consumers on the virtual network through the management of their fans pages on Facebook. This operation has even been spread to the app platform trying to cement their relations with consumers through brand apps for all possible commercial transactions.

In addition to Facebook and brand apps, brand management using the official accounts on LINE is becoming a new central focus. For example, Le Tien (?) Market of Taiwan is using LINE and Facebook to try to transform customer flow into opportunities with profit-making potential, creating a new type of online social commerce groups. Uniqlo, a Japanese casual wear designer, manufacturer, and retailer, is using LINE to deliver information on products on favorable terms whereby customers can get a 10% discount in its physical stores by presentation of official LINE account numbers, hoping to maximize its advertising effects on direct communication so as to strengthen the relations with its customers.

5.3 Research Findings

Four findings can be summed up in this study:

- Managing social network, a main medium, has exerted eminent effects on brand management and customer relationship building.
- The link between social media and e-commerce as a result of the stickiness of fans groups and the aggressive marketing through connecting social groups with brands has expedited the conversion between people flow and business flow,

establishing a new business model of social commerce. At the same time, mobile paying that is extended from social commerce is bound to turn out to be a future trend.

- For the social fans management by travel agents and international-standard hotels, deepening interaction, establishing closer networking, and making efforts to win public praise of brands are strongly suggested.
- As the customer approval of technology applications adopted and technology experiences offered by banks is stronger, influence drawn from customer impression with brands is greater.

It is also discovered that heated discussions between social fans are not equal to a strong customer loyalty. This has something to do with brand operators' attitudes toward, and positioning about, social fans pages. Although travel agents are highly interested in social groups discussions, the brand loyalty expressed and the maintenance of physical customer relationship carried out by social fans are not high. The phenomenon indicates that consumers consider information provided by social groups is more on promotion activities through advertising and less on favorable buying terms specifically for their fans. Besides, consumer surveys also show a lack of information on food recommendations, travel logs, and arrangements for scenic spots.

Topics and discussions touched off on the Internet and among social groups generally provide four types of information: Firstly, consumers may feel satisfied after experiencing and then make recommendations or want to share experiences; secondly, consumers may express interest in products or services offered by a specific brand; thirdly, consumers may raise questions because of doubts arising from a lack of brand information; and fourthly, consumers may pass on negative information because of dissatisfaction during the experience. For this reason, to brand operators, heated discussions on the omnipresent web must be properly controlled and carefully observed, a move that would facilitate the management of brand image and develop the commercial potential available on the Internet and among social groups.

Acknowledgements: Thanks go to the preliminary research on a cloud platform for 3D printing. Without its support this study would not have been successful.

References

- 李青芬, 李雅婷, 趙慕芬 (譯) (2006)。Lee Ching-fen, Lee Ya-ting, Chao Mu-fen (Translated, 2006) 組織行為學 Organizational Behavior (原作者 Original author : Stephen P. Robbins)。台北市 Taipei : 華泰文化 Hwa Tai Publishing。
- 高宜凡 (2010年1月) Gao Yi-fan (January 2010)。國內首次「服務創新準備度」調查 台灣產業必須的改變：服務創新。遠見雜誌, 283。First Preparedness Level of Service Innovation – Taiwan Industry Must Make a Change: Service Innovation. Global Views Monthly. 取自Source http://store.gvm.com.tw/article_content_15729_7.html
- Cereja Technology (2014年8月13日)。アジア各国の8月Facebook推定ユーザ数を発表しました。取自<http://www.cereja.co.jp/press/>
- Aaker, D.A. (1996) . Measuring brand equity across products and markets. *California Management Review*, 38 (3) , 102-120.doi: 10.2307/41165845
- Augusto López-Claros Yasmína N. Mata (2011) . *Policies and Institutions Underpinning Country Innovation: Results from the Innovation Capacity Index*. Retrieved from http://www.innovationfordevelopmentreport.org/papers/101_LopezClaros_Mata.pdf
- Bearden, William O. and Jesse E. Teel (1983) .Selected Determinants of Consumer Satisfaction and Complaint Reports. *Journal of Marketing Research*, 20 (1) , 21-28.doi: 10.2307/3151408
- Bharadwaj, S. & Menon, A. (2000) .Making Innovation happen in Organizations: Individual Creativity Mechanisms, Organization Creativity Mechanisms or Both?. *Journal of Production Innovation Management*, 17, 424-434. doi: 10.1016/S0737-6782 (00) 00057-6
- Boulding, K. E. (1956) . *The image: knowledge in life and society*. Michigan,MI: University of Michigan Press.
- Brady, M. K. & Cronin, J. J. (2001) . Customer orientation: effects on customer service perceptions and outcome behaviors. *Journal of Service Research*, 3 (3) , 241-251. doi: 10.1177/109467050133005
- Cronbach, L. J. (1951) . Coefficient alpha and internal structure of test. *Psychometrika*, 16,297-334. doi: 10.1007/BF02310555
- Crosby, L. A., Evans, K. A., & Deborah, C. (1990) . Relationship quality in services selling: an interpersonal influence perspective. *Journal of Marketing*, 54 (3) , 68-82. doi: 10.2307/1251817
- Crowe, D., & Brennan, L. (2007) . Environmental considerations within manufacturing strategy: an international study. *Business Strategy and the Environment*, 16 (4) , 266-289. doi: 10.1002/bse.482

- Den Hertog, P., & Bilderbeek, R. (1999). Conceptualising service innovation and service innovation patterns. *Research Programme on Innovation in Services (SIID) for the Ministry of Economic Affairs, Dialogic, Utrecht.*
- Den Hertog, P., van der Aa, W., & de Jong, M. W. (2010). Capabilities for managing service innovation: towards a conceptual framework. *Journal of Service Management, 21* (4), 490-514. doi: 10.1108/09564231011066123
- Deshpande, R., & Webster, F. E. (1989). Organizational culture and marketing : defining the research agenda. *Journal of Marketing, 53* (1), 3-15. doi: 10.2307/1251521
- Dorsch, M. J., Swanson, S.R., & Kelley, S. W. (1998). The role of relationship quality in the stratification of vendors as perceived by customers. *Journal of the Academy of Marketing Science, 26*(2), 128-142. doi: 10.1177/0092070398262004
- Dwyer, F. R., & Oh, S. (1987). Output sector munificence effects on the internal political economy of marketing channels. *Journal of Marketing Research, 24* (4), 347-359. doi: 10.2307/3151382
- European Commission (2008). *European Innovation Scoreboard 2007 Comparative Analysis of Innovation Performance*. Retrieved from http://ec.europa.eu/enterprise/policies/innovation/files/proinno/eis-2007_en.pdf
- Gallouj, F. (2002). *Innovation in the service economy – The new wealth of nations*. Cheltenham, England: Edward Elgar.
- Grönroos, C. (1994). From marketing mix to relationship marketing: towards a paradigm shift in marketing. *Management Decision, 32* (2), 4-20. doi: 10.1108/00251749410054774
- Heskett, J. L., Jones, T. O., Loveman, G.W., Sasser, W. E., & Schlesinger, L.A. (1994, March-April). Putting the service profit chain to work. *Harvard Business Review, 72* (2), 164-174.
- Heskett, J.L., Sasser, W.E. Jr and Schlesinger, L.A. (1997). *The Service-Profit Chain*. New York, NY: Free Press.
- Homburg, C., Workman, J.P., & Jensen, O. (2002). A configurational perspective on key account management. *Journal of Marketing, 66* (2), 38-60. doi: 10.1509/jmkg.66.2.38.18471
- Hugo Hollanders (2008). *Measuring Services Innovation: Service Sector Innovation Index*. Retrieved from http://6cp.net/downloads/2_%20Hollanders.pdf
- Hurley, R. F., & Hult, G. T. M. (1998). Innovation, market orientation and organizational learning: an integration and empirical examination. *Journal of Marketing, 62* (3), 42-54. doi: 10.2307/1251742

- Ipsos MediaCT (2013) . *Our mobile planet: Taiwan – understanding the mobile consumer*. Retrieved from <http://services.google.com/fh/files/misc/omp-2013-tw-local.pdf>
- James H. Gilmore, B. Joseph Pine II, (2002) .Customer experience places: the new offering frontier. *Strategy & Leadership*, 30 (4) , 4 - 11. doi: 10.1108/10878570210435306
- Keller, K. L. (1993) . Conceptualizing, measuring, managing customer-based brand. *Journal of Marketing*, 57 (1) . 1-23. doi: 10.2307/1252054
- Keller, K. L., & Aaker, D. A. (1998). The impact of corporate marketing on a company's brand extensions. *Corporate Reputation Review*, 1 (4) , 356-378. doi: 10.1057/palgrave.crr.1540057
- Kumar, N., Scheer, L. K., & Steenkamp, J. B. E. (1995) . The effects of perceived interdependence on dealer attitudes. *Journal of Marketing Research*, 32 (3) , 348-356. doi: 10.2307/3151986
- Kwak, H., Fox, R. J., & Zinkhan, G. M. (2002). What products can be successfully promoted and sold via the Internet? *Journal of Advertising Research*, 42 (1) . 23-38.
- Liang, T. P., Ho, Y. T., Li, Y. W., & Turban, E. (2011) . What drives social commerce: the role of social support and relationship quality. *International Journal of Electronic Commerce*, 16 (2) , 69-90. doi:10.2753/JEC1086-4415160204
- Matthew Dixon, Karen Freeman, and Nicholas Toman(2010,July).Stop Trying to Delight Your Customers. *Harvard Business Review*.
- Miles, I. (1993) . Services in the new industrial economy. *Futures*, 25 (6) , 653-672. doi: 10.1016/0016-3287 (93) 90106-4
- Moorman, C., Deshpande, R. & Zaltman, G. (1993) . Factors affecting trust in market research relationships. *Journal of Marketing*, 57 (1) , 81-101. doi: 10.2307/1252059
- Nunnally, J. C. (1967) . *Psychometric theory*. New York, NY:McGraw-Hill.
- Oliver, Richard L. (1997) .*Satisfaction: A Behavioral Perspective on the Consumer*. New York, NY: McGraw-Hill.
- Reichheld, F. F. (1996) .The Loyalty Effect: The Hidden Force Behind Growth, Profit and Lasting Value. Boston, MA: Harvard Business School Press.
- Schumpeter, J. A. (1968) . *The theory of economic development: an inquiry into profits, capital, credit, interest and the business cycle*. Cambridge, MA: Harvard University Press.
- Spencer, P., & Freeman, K. (2012, May) . To keep your customers, keep it simple.*Harvard. Business*

Review, 90 (5) , 108-114.

Walter, A., Müller, T. A., Helfert, G., & Ritter, T. (2003) . Functions of industrial supplier relationships and their impact on relationship quality. *Industrial*

Marketing Management, 32 (2) , 159-169. doi: 10.1016/S0019-8501 (02) 00230-4

Walters, C. G., & Paul, G. W. (1978) . *Consumer behavior: an integrated framework*. Homewood, IL: Richard D. Irwin Inc.

Zhu, F. X., Wymer, W., & Chen, I. (2002) . IT-based services and service quality in consumer banking. *International Journal of Service Industry Management*, 13 (1) ,69-90.

doi:10.1108/09564230210421164