Exploring the Relationships among Innovation Diffusion Roles, Brand Communities Engagement Effect on Virtual Brand Communities

I-Ping Chiang, National Taipei University, Taiwan
Shou-En Tu, National Taipei University, Taiwan

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Abstract
In recent years, the number of people using online communities continued to rise. The study found that more and more consumers find and evaluate desired goods through social media networks, as marketers also continue to improve their marketing skill, not only to promote brand recognition, but more importantly, to increase user engagement. However, the link between the brand community and the social media has become the focus of the marketing staff and the public. But the academic research of the brand community and the social media in the past focused on the research of brand loyalty. There is less report on the innovation diffusion and brand community. Thus, this study aims to exploring the relationships among innovation diffusion roles and social media engagement on virtual brand communities. This study will use a web survey from customers from Insightxplorer's CyberPanel who intend to adopt a social network service. Factor analysis will be conducted to confirm the induced factors from literature review. Furthermore, will be also analysis of variance analysis to determine the variation between the role of innovation diffusion roles and social media engagement. Finally, based on the findings, in-depth discussions and conclusions will be provided to further researches and practices.

Keywords: virtual brand community,innovation diffusion role,social media engagement

1 Introduction

With the recent rise of the Internet, social media has become the most popular method of communication, and it has changed the way people interact. According to eMarketer, in 2015, 196 million users worldwide were recorded on social networking sites, constituting 27.1% of the global population, and this number is projected to reach 2 billion by next year, offering a strong indication of the worldwide popularity of social media. The present study observed that consumers increasingly discover and evaluate desired goods through social media networks, with marketers also continuing to improve their marketing skills not only to promote brand recognition, but more importantly, to increase user engagement. According to a survey conducted by eMarketer regarding the use of social media as a marketing application by US businesses in 2015 (Figure 1-1), approximately 88.2% of enterprises have used social media as a marketing tool in the past 5 years, and this figure is expected to grow to 89.4% by 2017. Accordingly, social media marketing continues to grow as more companies consider it an indispensable marketing tool.

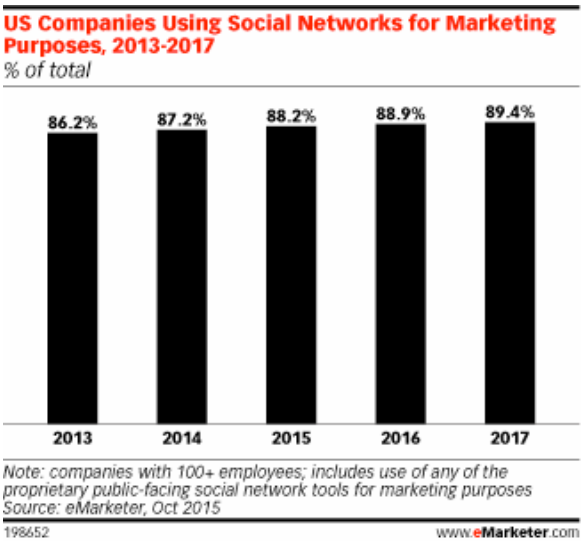

Figure 1-1 US companies using social networks for marketing purposes
sourc: eMarketer(2015)

Some scholars believe that the social media platform Facebook, registering more than one billion users, is not only for consumers, but also the most popular social networking platform among electronic retailers. Facebook is favored by e-tailers on other social media platforms such as Google+, Instagram, and Pinterest, because it is a popular marketing channel that enables direct interaction with potential customers and offers an unprecedented platform for customers to openly share product reviews (Nadeem, Andreini, Salo, & Laukkanen, 2015). According to Social Media Examiner's 2015 Social Media Marketing Business Report, among social media platforms such as Facebook, Twitter, LinkedIn, Google+, YouTube, and Pinterest, which are the most commonly used by marketers, Facebook continues to dominate as the major social media platform for marketing, in that the vast majority of marketers use Facebook. As can be seen from the report, most companies or advertisers tend to choose Facebook as their primary social media platform for promoting product or brand information.

Although the link between a brand community and social media has become the focus of both marketing staff and the public, previous academic studies regarding the brand community and social media emphasized more on brand loyalty. Studies concerning innovation diffusion and the brand community are scant; thus, studying the link between these two represents an opportunity for further investigation. In light of this, the present study proposed the following objective:

1. Through the literatures, the paper explored the concept of innovation diffusion and brand community engagement, with an attempt to establish a measurement framework to measure the relevance of these constructs.
2. Using ANOVA to determine variations between the roles of innovation diffusion and community engagement.

2 Theoretical background

2.1 Diffusion of Innovation

Rogers (1995) defined innovation as "a concept, time, or thing that is perceived by individuals or other adopters as novel." Innovation diffusion refers to a basic social process in which subjective feelings regarding new verbal information are spread. In addition, through social construction processes, the significance of an innovation gradually emerges. However, several scholars have offered the following interpretations for innovation diffusion in different fields: (a) in terms of marketing, it referred to affordability, profitability, disposable income, market penetration, media advertising, and the relationship of supply and demand; (b) in terms of network organization, it referred to the influence on internal organizations through social media and public compliance; (c) in terms of cultural organization, it referred to culture, value, and identity changes within an organization or professional group; and (d) in terms of communication, it referred to the interpersonal impact on structure, communication channels, and network operations (e.g., the effect of decision-making on experts and peer groups) (Greenhalgh et al., 2005).

Rogers (1995) proposed the diffusion curve to divide users into innovators, early adopters, early followers, late followers, and laggards.

1. Innovators: As the name suggests, innovators are pioneers who have the courage to promote a novel idea or object. Innovators play a vital role in the process of innovation exchange. They obtain information before a new product launches, and they share the information on social media websites.
2. Early adopters: Early adopters are the leaders of public opinion and social status who are willing to lead fashion trends and try new things, but they behave cautiously. After receiving information through word of mouth, they buy new products within a month of the product launch and share their experiences.
3. Early Majority: The early majority users are thoughtful, cautious people, but they are more willing to accept change than members of the general population are. After receiving information through word of mouth, they buy new products within a month of the product launch.
4. Late Majority: The late majority users are a group of skeptics who adopt new things when the general public accepts them. After receiving information

through word of mouth, they browse experiences and comments to purchase new products within 6 months after launch.

5. Laggards: Laggards are old-fashioned, particular about new things, and only passively accept a new product after it has broken into the mainstream market. Laggards are not concerned about comments or experiences, which do not affect their decisions regarding product purchase.

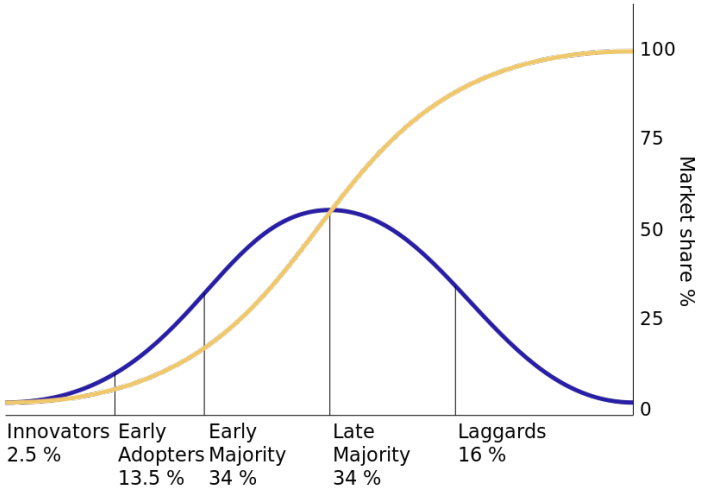

Figure 2-1 diffusion curve
source: Wikipedia

2.2 Brand Communities Engagement

Consumer engagement refers to the main objective of cocreation and interaction to create consumer experiences that engender specific mental states. Because a product cannot be directly experienced online, the role of network media such as e-retailer websites, intermediaries, and social networking sites is a key factor (Brodie, Hollebeek, Juric, & Ilic, 2011; Nadeem et al., 2015). Evans (2010) suggested a four-story engagement ladder with low to high degrees of engagement, curation, creativity, and collaboration, enabling users to advance from simple earned and paid media to word-of-mouth media. For its part, the study of Forrester (2007) applied a social science and technology consumption questionnaire to design a set of categories for participant segmentation, including creator, communicator, commentator, collector, joiner, bystander, and inactive user. The current study summarized the aforementioned literature and activity indicators to organize the following five brand community engagements and activities: join, browsing/consume, comment, sharing, and creation.

(1) Join

The activity of joining a social media network entails a user opening an account on the network to create a profile in order to connect with others. Users can also join groups of people with similar interests (Frost & Strauss, 2013). Users who join social networks generally focus on specific topics (e.g., interests, concerns, or programs); for example, on LinkedIn, users can join groups focusing on business activities or common interests (Zaglia, 2013).

(2) Browsing/Consume

Regarding the activity of browsing/adopting, users who engage in such an activity on social media platforms only absorb content such as blogs, videos, podcasts, or status updates, and they collect information to make decisions, learn from others, or find entertainment (Li, 2011). According to Evans and Dave (2010), building strong customer engagement primarily relies on the process of reception. In the context of social media, reception refers to downloading, reading, browsing, or listening to digital content. Reception is the basic starting point for almost all online activities, especially community activities.

(3) Comment

Concerning the activity of commenting, Fournier and Avery (2011) indicated that online consumers have become enthusiastic brand commentators in providing authoritative judgment and criticism to enterprises and brands. Social media platforms have empowered consumers to connect, share, collaborate, and create, and this has radically influenced and changed marketing methods (Hanna, Rohm, Crittenden, & Singh, 2005; Walmsley, 2010). On Facebook, consumers can click the "Like" button to indicate support. On social media platforms, people comment on other people's content, such as blogs, news, status updates, or product evaluations. Individuals actively participate, support, and contribute to the ideas and opinions of others (Li, 2011).

(4) Sharing

The activity of sharing involves people with the same interests in a community converging to exchange contact, build relationships, and share or discuss ideas (Zaglia, 2013). In a brand community, members who share interests can not only develop affinity, but also establish contact, thereby empowering the consumers. Sharing personal information, knowledge, and experience is an activity or cognitive dimension that reflects consumer engagement through active contributions made through shared knowledge within a social network (Brodie, Ilic, Juric, & Hollebeek, 2013).

(5) Creation

The activity of creation entails a user writing or uploading original multimedia content to a website, such as uploading a video to YouTube, a photo to Facebook, or music and podcasts to iTunes. Consumers write reviews of their products, open blogs, leave comments on other people's blogs, and write Wikipedia articles, thereby contributing more to social media content than others do (Frost & Strauss, 2013). Franzia, Piliang, and Saidi (2015) argued that images and note posting are examples of public engagement in new media and cyberspace, representing a focus on cultural identity. Members of the virtual community base their interests and attention on culture to participate in a discussion.

3 Research Methodology

The present study referred to the scales proposed by previous scholars with the primary objective of designing brand community activities and spreading information regarding new innovations.

Hurt and Katherine (1977) asserted that the theory of innovation diffusion could be applied to a variety of diffusion studies. In a previous study, 20 items were listed to measure the scale of innovation diffusion conveyed by the subjects, and Roger's innovative diffusion curve was employed to classify subjects into five individual categories. Based on Hurt's innovation scale, De and Maia (2013) listed 10 scales to test the innovativeness of respondents, which was graded on a 5-point scale: The pioneer of innovation received 80 points or more; the early adopter received 69 to 80 points; the early majority user received 57 to 68 points; the late user received 46 to 56 points; and the unaware user received less than 46 points. Based on the preceding discussion, the study was fundamentally based on Hurt's research (1977), but it also integrated the research of Goldsmith in selecting 10 listed items as a test measure for innovation levels among respondents.

3.1 Data collection and sample

The present study was based on the aforementioned literature review, research hypotheses, and expert interviews. Through basic scales from the literature and organized comments from expert interviews, this study established the operational definition of various measurement variables and tested the degree of innovation diffusion; a total of 25 items were designed. The pretest samples were collected through a stratified quota sampling method, and 391 effective samples were obtained after the removal of those containing incorrect data or incomplete basic information. The age distribution of the samples is presented in Table 3-1.

Table 3-1、Sampling profile (N=391)

Gender	Frequency	Proportion(%)
Male	194	49.6%
Female	197	50.4%
Age	Frequency	Proportion(%)
20-29 years old	137	35.0%
30-39 years old	137	35.0%
Over 40 years	117	29.9%

The study based on Hurt's innovation scale, listed 10 scales to test the innovativeness of the respondents, which would be graded on a six-point scale in Table 3-2: the innovators received 50 points or more; early adopter received 41 to 49 points; early majority user received 31 to 30 points; late Majority user scored 20 to 30 points; and laggards user would received less than 19 points.

Table 3-2、innovation scale

Diffusion Curve	Points	Frequency
Innovators	50~60	53
Early Adopters	41~49	92
Early Majority	31~40	177
Late Majority	20~30	59
Laggards	10~19	10

4 Data analysis and results

Analysis of variance(ANOVA) was conducted to determine variations between the roles of innovation diffusion and community engagement (Table 4-1). This study determined significant differences in the role of innovation diffusion between the joining, browsing/receiving, commenting, sharing, and creating aspects in a community activity.

Scheffe's posttest revealed that in the joining, browsing/receiving, sharing, and creating activities, the innovator exhibited earlier recognition and awareness than the early adopter, early majority, late majority, and laggard did. Moreover, the early adopter had higher awareness than the early majority, late majority, and laggard did. The early majority exhibited superior awareness to only the late majority and laggard.

Similar to the aspect of commenting, Scheffe's posttest indicated that the innovator exhibited earlier recognition and awareness than the early adopter, early majority, late majority, and laggard did. The early adopter exhibited higher awareness than the early majority, late majority, and laggard did. The early majority exhibited superior awareness to only the late majority and laggard.

Table 4-1、the roles of innovation diffusion and community engagement

		Innovators	Early Adopters	Early Majority	Late Majority	Laggards	F value	p-value	Post-hoctest
Join	N	53	92	177	59	10			
	Mean	4.7799	3.8804	3.4162	2.8870	2.3000	33.781	.000	1>2345, 2>345, 3>4.5
	SD	.86712	.85817	1.01599	1.18194	1.23178			
Browsing/Consume	N	53	92	177	59	10			
	Mean	4.8428	4.1449	3.6064	3.1243	2.4667	31.791	.000	1>2345, 2>345, 3>4.5
	SD	.87120	.78338	.96341	1.21280	1.49237			
Comment	N	53	92	177	59	10			
	Mean	3.9245	3.1812	2.5593	2.0339	1.2000	26.986	.000	1>2345, 2>345, 3>5
	SD	1.41216	1.29657	1.13614	.95832	.42164			
Sharing	N	53	92	177	59	10			
	Mean	4.2013	3.3333	2.6817	2.1412	1.3000	36.027	.000	1>2345, 2>345, 3>4.5
	SD	1.39954	1.14621	1.05398	.91853	.50796			
Creation	N	53	92	177	59	10			
	Mean	3.6792	2.9167	2.4256	1.8362	1.1000	28.598	.000	1>2345, 2>345, 3>4.5
	SD	1.52747	1.15325	.99222	.75398	.31623			

$^{*}p < .05$

5 Conclusion

The results of this study reveal a significant difference in the role of innovation diffusion between the joining, browsing/receiving, commenting, sharing, and creating activities in a community activity. However, on average, statistical significance was present. Regarding the aspect of joining, the innovator and early majority had an average greater than 3.5. Considering browsing/receiving, the innovator, early adopter, and early majority exhibited an average of greater than 3.5. Considering commenting, sharing, and creating, only the innovator exhibited an average of greater than 3.5. Accordingly, innovation diffusion roles differ between various levels of community engagement.

From the results of this study, we can verify that the innovation diffusion role and brand community activity can be employed as references for theoretical research and practical decisions. The results also suggest key combination elements and implementation methods for an enterprise's brand marketing, to create a model for evaluating brand community effects for a corporation, in which the outcome of improving the brand could be tested as a basis for decision-making in regard to the sustainable development of a brand enterprise.

References

Brodie, R. J., Ilic, A., Juric, B., & Hollebeek, L. (2013). Consumer engagement in a virtual brand community: An exploratory analysis. *Journal of Business Research*, 66(1), 105-114.

Evans, D. (2010). Social media marketing: the next generation of business engagement. John Wiley & Sons.

Fournier, S., & Avery, J. (2011). The uninvited brand. *Business Horizons*, 54(3), 193-207

Franzia, E., Piliang, Y. A., & Saidi, A. I. (2015). Manifestation of Minangkabau Cultural Identity through Public Engagement in Virtual Community. *Procedia-Social and Behavioral Sciences*, 184, 56-62.

Greenhalgh, T., Robert, G., Macfarlane, F., Bate, P., Kyriakidou, O., & Peacock, R. (2005). Storylines of research in diffusion of innovation: a meta-narrative approach to systematic review. *Social science & medicine*, 61(2), 417-430.

Hanna, R., Rohm, A., & Crittenden, V. L. (2011). We're all connected: The power of the social media ecosystem. *Business horizons*, 54(3), 265-273.

Hurt, H. T., Joseph, K., & Cook, C. D. (1977). Scales for the measurement of innovativeness. *Human Communication Research*, 4(1), 58-65.

Nadeem, W., Andreini, D., Salo, J., & Laukkanen, T. (2015). Engaging consumers online through websites and social media: A gender study of Italian Generation Y clothing consumers. *International Journal of Information Management*, 35(4), 432-442.

Rogers Everett, M. (1995). Diffusion of innovations. New York:Free Press.

Zaglia, M. E. (2013). Brand communities embedded in social networks. J*ournal of business research*, 66(2), 216-223.

Contact email: ipchiang@mail.ntpu.edu.tw
grace05026@gmail.com