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信任與溝通意願對網路口碑傳播之影響

Using Trust and Willingness to Influence the Spread of Electronic Word-of-Mouth

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摘要：現代消費者時常使用網路為尋找商品資訊的管道。網路上的購物心得或商品使用感想成了增加產品知名度的有效方式。網路口碑的重要性就在於能夠打響一個產品的知名度並增加顧客忠誠度。這不但是最省錢，也是最能快速達到成效的一個手段。如今在網路發達的社會，除了傳統的面對面的口碑傳播，我們更想要了解網路口碑的影響與傳遞。本研究對於人與人之間分享網路口碑的原因作了一個探討，去測量個人的信任程度，是否會影響他願意去溝通以及對話的結果。另外，本研究也將關係強度當作一個重要的變數納入研究範圍。在統計方法上，本研究採用結構方程模式針對 257 名受測者所填寫的問卷進行分析。研究結果顯示，信任與網路口碑活動及正面網路口碑有顯著的負向關係。又，溝通意願與網路口碑的三個不同構念皆有顯著的關係。最後，本研究在管理意涵上提出網路口碑行銷如何研究的發現應用在實務上，進而達到網路口碑活動的綜效。

關鍵詞：網路口碑；信任；溝通意願

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Abstract：Modern consumers use the Internet as a ubiquitous channel for seeking information and sharing experiences prior, during, and after purchasing. Post-purchase statements made by electronic word-of-mouth have become a quick and efficient means to increase product awareness among consumers. Using electronic word-of-mouth is important for developing brands, increasing e-commerce website loyalty, and cuing consumer behavior. This research demonstrates how willingness to communicate and individual trust influences electronic word-of-mouth. Tie strength is the construct used to measure interactions between trust and willingness among 257 survey respondents. Structural equation modeling was applied to test the model and hypotheses. The research results support the hypothesis that there is a significant relationship between trust and electronic word of mouth. The results also show that willingness to communicate has significant relationships with electronic word-of mouth-activity, positive electronic word-of-mouth, and negative electronic word-of-mouth. Finally, the study presents the managerial implications of using electronic word of mouth for Internet marketing and maintaining consumer loyalty.

Keywords: Electronic Word-of-Mouth; Trust; Willingness to Communicate

1. Research Background

The Internet provides a means of communication that substitutes traditional ways of promoting products, brands, and services. Passing information and sharing experiences through word-of-mouth (WOM) is well known as an efficient means of spreading commercial messages. Bone (1995) notes a growing research interest in measuring WOM antecedents and effects. She assumed that consumer's pre-usage attitudes toward a product are significantly influenced by WOM messages. WOM effects have become increasingly important with the emergence of the Internet and frequently referred to as electronic word-of-mouth (eWOM) effects. Stauss (1997) first studied the topic and defined eWOM as Internet based customer communication that is categorized as a type of WOM behavior. A clear and specific definition was provided by Hennig-Thurau *et al.*

(2004) who used Stauss's discussion to define the term. Thus, electronic word-of-mouth (eWOM) is any post-purchase statement made by former customers about a product or company, which is available to a multitude of people and institutions via the Internet.

The relationship and tie strength between the message spreader and message recipient has emerged as an important consumer research topic. Wirtz and Chew (2002) conducted a study on tie strength as an antecedent of WOM. Results showed a significant main effect between tie strength and WOM. A study by Van Hoye and Lievens (2007) pointed out that tie strength levels influence how the recipient perceives messages. WOM from a strongly tied person tends to be perceived as more reliable than messages from random sources. There are many questions to be answered and applications to be developed by applying tie-strength to electronic content. Marketing practitioners are particularly interested in how eWOM works and deriving new methods for determining behavioral antecedents.

This research evaluates Internet based eWOM communications and measures trust and willingness to communicate in relation to electronic messaging. Both factors are hypothesized to influence consumer behaviors across a very broad range of commercial messages including product likes and dislikes, favorite fashions, complaints, and future purchase intentions. Varying among industries, the strength of WOM is hypothesized to significantly influence the purchase intentions of consumers. The Internet provides a unique platform for measuring eWOM in comparison to traditional WOM (where information is passed between personal physical communication). Since electronic messages are spread instantaneously among a large and global network of people and are stored online, eWOM eliminates geographic distance, time barriers, and social groups. A new and boundary-free venue to express opinions, structure beliefs and attitudes, and often, experience pleasure by casually chatting with others on Internet is also provided by eWOM. The eWOM activities are often multi-tasked with other online activities. Since consumers willingly share their personal views about products purchased using the Internet, willingness to communicate should influence the frequency to spread messages electronically. Consumers often

disclose information about their shopping behavior if they trust the online media site or if they are communicating with friends in a familiar social network. Therefore, trust should be relevant to the analysis of eWOM. This research examines whether willingness to communicate is a significant mediator between trust and eWOM to determine if there is theoretical support for explaining and predicting the effects of eWOM.

2. Literature Review

The literature review provides the foundation for the research questions and includes a review of the constructs used in previous studies. The constructs of this study build upon the focal aspects of each domain which includes electronic word-of-mouth, willingness to communicate, trust, and tie strength. The literature review defines these constructs and relates these terms to a research framework.

2.1. Electronic Word-of-Mouth (eWOM)

Word-of-mouth (WOM) communications exist across different cultures and countries and facilitate information flow (especially product and service related information) between people. From a marketing and advertising perspective, WOM is one of the most important mechanisms used to influence the purchase intentions of consumers. WOM is thought to be an outcome of consumer experiences with products and services (Buttle, 1998). Both positive and negative WOM significantly influence consumer decision making and is experienced at least daily in developed societies where choice prevails. For example, friends or family may provide information that influences a purchase decision or a consumer may take a stance toward a product, company or brand and aggressively spread the message through social networks. WOM is dynamic and unpredictable but there are several explanations for the phenomena. Hirschman (1970) was one of the first to explain that a disappointed consumer will typically react in one or a combination of three ways. The consumer might break the relationship, complain to others, or make their dissatisfaction known to the suppliers or company. Out of

these three, complaining to others about an unsatisfied product experience, which is known in the literature as negative WOM (Buttle, 1998), has the greatest impact on a company's reputation and sales. A consumer's desire to purchase leads to a search of shared experiences which influences the outcome of the purchase (Harrison-Walker, 2001). According to Flynn, Goldsmith, and Eastman (1996), individuals usually keep 10% of their good or bad emotional experiences to themselves whereas the majority of the experience will be shared with others through conversations. After acquiring WOM information, consumers may exclude their own opinions and adopt the attitudes and opinions of others (Godes and Mayzlin, 2004). The WOM effect is stronger when consumers are faced with ambiguous information while making purchase decisions (Bone, 1995).

New media platforms such as the Internet offer different ways to spread word-of-mouth (Table 1). The Internet is the main portal for eWOM and has greatly changed marketing communications. Similar to traditional WOM, eWOM has a higher reliability for changing consumers' attitudes than other marketing activities on the Internet (Bickart and Schindler, 2001). The Internet provides different channels for consumers to communicate through social interfaces, such as e-mail, blogs, forums, and websites. The traditional spread of WOM is limited by barriers such as distance, time, and cost of disseminating information (e.g., long distance phone calls). The Internet enables consumers to share their opinions and experiences with a multitude of other consumers and most importantly, the message is stored (Hennig-Thurau *et al.*, 2004). Stored information on websites and blogs enables consumers to gather shared experiences and learn more about a product before making a purchase decision (Doh and Hwang, 2009).

For traditional WOM, the source of information is tangible and people communicate in person. For electronic word-of-mouth, there are more channels and formats for information communication. One of the most popular channels in Taiwan is the Bulletin Board System (BBS) where users exchange ideas and opinions (Wu and Lee, 1999). The most popular BBS in Taiwan is called PTT, which hosts over 800,000 users per day. The BBS is a useful online network system that combines online chat, news, and discussion articles (Chen *et al.*, 1998). Text messages were originally circulated among large numbers of students

but grew in number and popularity and gradually started to include general segments of the population. Registered users often access different boards to share their purchase experience for products such as digital cameras, makeup, furniture, books, and food.

Weblogs are personal web pages that are frequently updated with new articles by bloggers (electronic message senders) who include photos, music, personal comments, and links to other Internet sites (Nardi, Schiano, and Gumbrecht, 2004). New forms of micro-blogging simplify functions and make it easier for users to share their status, post short messages, and upload pictures through mobile phones or the Internet. Micro-blogs lower the required time to share information and increases the frequency of postings. A traditional weblog might add one or more articles per day, whereas micro-bloggers renew their status several times a day. In addition, instant messaging is a type of technology on the Web that allows users to send and receive short text based messages and check the status of friends who are online and available for conversations (Cameron and Webster, 2005).

Table 1

Traditional and Electronic Word-of-Mouth

Different types of word-of-mouth	Communication platforms
Traditional Word-of-Mouth	Person to Person Contacts, Traditional Phone
Electronic Word-of-Mouth	Bulletin Board System, Blogging, Micro-blogging, Email, Websites, Internet Phone

2.2. Willingness to Communicate (WTC)

Written and spoken words are the most important ways people communicate with each other. Each person has different tendencies to speak, write, or communicate with others. People speak when they are willing to communicate (McCroskey and Baer, 1985). Willingness to communicate is defined as a personality trait that underlies the communication process (MacIntyre, 1994).

Individuals that are highly willing to communicate will have enhanced listening comprehension and more frequent conversations. Also, people who are more willing to communicate are better liked by family and friends compared to those who are quiet and keep to themselves. The research of Rocca and Martin (1998) shows that this is especially prevalent in workplaces where those more willing to communicate are favored by coworkers and supervisors.

Willingness to communicate was first proposed by McCroskey and Baer in 1985 and as a means to measure the predisposition towards verbal communication. They define this construct as the intention to initiate communication when given the opportunity. Willingness to communicate is also positively related to whether a person chooses to listen and interact with others. In Morgan and Miller's (2002) study concerning organ donations, willingness to communicate with family members about the subject was used to predict organ donation behavior. Different cultural environments influence the formation of communication behaviors (Barraclough, Christophel, and McCroskey, 1988). Willingness to communicate is dependent on the situation and the mood of the listener to whom the speaker is speaking to. The most frequently referenced scale used to measure willingness to communicate was developed by McCroskey and Richmond (1987). The scale measures an individual's communication behavior under four situations and for three different types of listeners. Although other personality variables impact one's communication and speaking behavior, willingness to communicate is believed to be the focal factor. Communication is considered ubiquitous with the Internet and individuals are now more willing to communicate with others, even strangers, using the new electronic communication tools. For instance, the younger generation in particular appears to consider texting as important as talking with the prevailing attitude that is no longer necessary for most conversations to be face to face.

2.3. Trust

Trust defines whether one chooses to believe another's words or advice. Therefore, trust can be used as a variable to model whether WOM is accepted by

consumers or not. One of the classical definitions of trust is that it is a generalized expectancy held by an individual that the word of another can be relied on (Rotter, 1971). When reliable information is consistently provided by others, our trust is strengthened. The willingness to share information and the expectancies underlying the communication are the foundation of trust. The role of trust is an important factor for understanding consumer behavior. Schurr and Ozanne (1985) describe trust as the belief that one's word is reliable and that the individual will fulfill obligations in an exchange. A feeling of fear for negative outcomes or loss may occur if there is lack of trust.

Trust is a complex and multi-dimensional construct that has been studied by different disciplines including psychology and sociology. As long as risk and information sharing exists, the issue of trust will exist because of its importance in interpersonal and business relationships. According to Rempel, Holmes and Zanna (1985), there are four conclusions that best define trust. First, trust is built upon past experience and a series of events that strengthen the feeling. Second, dispositional behaviors are tests of trustworthiness. The third conclusion is that one must be willing to accept risk, whether it is the risk of being hurt, or the potential to lose present benefits for future gains. The last conclusion is that trust can be measured by the degree of closeness between individuals.

The method for modeling trust includes how trust is defined, the origin of trust, and why trust changes over time (Chanley, Rudolph, and Rahn, 2000; Mayer, Davis, and Schoorman, 1995; Smeltzer, 1997). Trust begins at time zero when there are strangers and a lack of communications. Trust experiments are used to explain and explore how initial trust develops into relationships. Several studies show that trust develops over time (Wilson, Straus, and McEvily, 2006), and when people evaluate the circumstances and the individuals before developing trust (Salam, Iyer, Palvia, and Singh, 2005). This research focuses on trust as defined by Rotter (1967) which is the expectancy held by an individual or a party that the word, promise, verbal or written statement of another individual or party can be relied on. Trust defined in this manner focuses on the interaction between two individuals. Since the transfer of eWOM encompasses personal

experience (Richins and Root-Shaffer, 1988), it is included in the formation of the research questions.

2.4. Tie Strength (TS)

Tie strength defines the social relationship of individuals and categorizes the frequency of contact, how well others in the network are known, and the potency of the bonds between members of a network (Granovetter, 1973). Strong tie sources are found among family and friends, whereas weak ties are found among strangers (Duhan, Johnson, Wilcox, and Harrell, 1997). The influence of tie strength can affect consumer decision making, WOM, and intergroup interactions (Mittal, Huppertz, and Khare, 2008). WOM communication is a social behavior that includes the exchange of information between individuals. Previous research shows that tie strength influences the flow of information and individuals who are strongly tied have more opportunities to interact and share information (Gotlieb, Grewal, and Brown, 1994). On the contrary, individuals in weakly tied relationships have few chances to speak directly. People with weak ties however are more likely to build networks with other social groups to gain information (Granovetter, 1973).

Granovetter (1973) proposes a theory of strength-of-weak-ties, meaning that weak ties are more wide ranging and therefore more likely to act as communication mediators than strong ties. This theory was initially used to study employment in workplaces and show how weak ties assist individuals in the process of job hunting where there is an overlap in information. Weak ties help individuals gain access to information that is beyond their social network, whereas strong ties are useful for task-oriented needs (Haythornthwaite, 2001). Drawing upon Granovetter's (1973) results on the strength of weak ties, Levin and Cross (2004) produced research results showing that weak ties provide non-redundant information. Further, having strong bonds of trust towards another individual allows the individuals to share complaints or negative comments since they are confident the listener will not perceive the news in a bad way. Based on these results, the research framework for this study proposes that strong ties have a positive effect on negative eWOM.

3. Research Framework

In this section, the proposed research framework is constructed based upon the results cited in the literature review. A total of ten hypotheses are proposed and tested in this study. The research framework defines the hypotheses and the initial causal relationship model to be tested.

3.1. Proposed Research Framework

The proposed research framework explores the interaction between electronic word-of-mouth, willingness, trust, and tie strength. Past research supports relationships between these constructs. In Ben-Ner and Putterman's (2009) study on trust and communication, the results show that if one desires to establish a relationship, then individuals must take the communication process seriously. Thus, the depth of communication promotes trustworthy behaviors. Anderson and Weitz (1989) have demonstrated the interaction between trust and communication across different fields of study and state that communication is critical to building a trusting relationship which will create stability. Studies in communication between siblings show that solidarity has a strong and positive relationship with the depth of communication (Rocca and Martin, 1998). One of the items on the solidarity scale of Rocca and Martin (1998)'s study measures how much the other person is trusted. Siblings with high levels of trust are willing to communicate across deeper and wider ranges of subjects, they conclude that trust between individuals will also affect the depth of communication. However, few studies explore the relationship between the level of trust and the willingness to communicate. Although the content of communication is not completely associated with personal privacy or other matters, it is reasonable to believe that the more one is willing to be exposed, the more willing they are to share information with others. Therefore this study proposes several related hypotheses to be tested.

H1: Trust has a significant and positive relationship with an individual'swillingness to communicate.

WOM is an initiative action where an individual chooses to express his opinions or share past experiences with others. WOM is an action that depends on the individual's intention to communicate so an individual's willingness to communicate with another person should be positively related with it. As Richmond and Roach (1992) state, willingness to communicate is the communication personality construct that permeates every facet of an individual's life. The following hypotheses are thus derived:

H2a: Trust has a significant and positive relationship with an individual's electronic word-of-mouth activity.

H2b: Trust has a significant and positive relationship with an individual's positive electronic word-of-mouth.

H2c: Trust has a significant and positive relationship with an individual's negative electronic word-of-mouth.

H3a: An individual's willingness to communicate has a significant and positive relationship with electronic word-of-mouth activity.

H3b: An individual's willingness to communicate has a significant and positive relationship with positive electronic word-of-mouth.

H3c: An individual's willingness to communicate has a significant and positive relationship with negative electronic word-of-mouth.

WOM is a social behavior that involves communicators with different levels of tie strength (Wirtz and Chew, 2002). An individual might interact with those with whom they hold strong ties (e.g. family members) or weak ties (e.g. a person encountered on Internet). The different levels of tie strength and the relationship to the spread of eWOM have been studied, yet few researchers have adapted Granovetter's theory to explain the power of weak ties and WOM. The strength of social relationships between individuals, or tie strength, also applies to the way the Internet expands our social networks. When exploring the interaction between tie strength and eWOM, Granovetter's (1973) research implies that there should be a negative relationship between tie strength and eWOM activities. Furthermore,

individuals that are weakly tied usually use passive media to contact or share information with each other (Haythornthwaite, 2001). Yet, since negative reviews and complaints about a service or product might lead to negative personal images of the individual to the receiver, online users will likely be more willing to spread negative eWOM with strongly tied individuals whom they trust. In line with this reasoning it is hypothesized that:

H4a: An individual's tie strength with another individual on the Internet has a significant and negative relationship with eWOM activity.

H4b: An individual's tie strength with another individual on the Internet has a significant and negative relationship with positive eWOM.

H4c: An individual's tie strength with another individual on the Internet has a significant and positive relationship with negative eWOM.

Ten proposed hypotheses are derived from the literature review (Table 2). Trust has a positive effect on willingness to communicate and willingness to communicate acts as the mediator between trust and electronic word-of-mouth. Finally, tie strength has a negative and significant effect on electronic word-of-mouth. These foundation hypotheses are used to build the fundamental model constructed for testing how trust and willingness to communicate influences the spread of electronic word-of-mouth (Figure 1).

4. Methodology

In the previous section, the research framework and proposed hypotheses were derived from the literature review. This section focuses on the methodology for model construction and hypotheses testing. The scales used for measurement are adapted from previous research to provide a reliable means to evaluate the constructs of interest. Two pretests were conducted before distributing the final questionnaire to participants.

Table 2

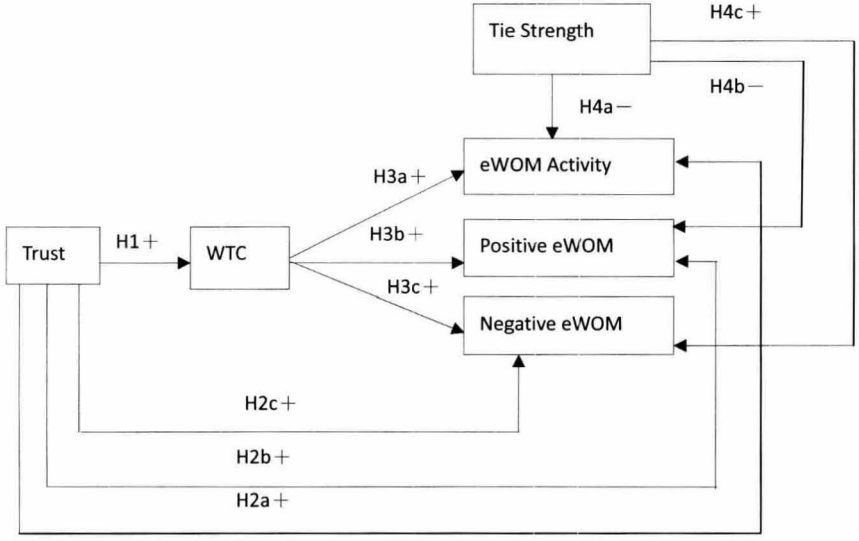
Proposed Hypotheses

Proposed Hypothesis	Content of Hypothesis
Hypothesis 1	Trust has a significant and positive relationship with an individual's willingness to communicate.
Hypothesis 2a	Trust has a significant and positive relationship with an individual's eWOM activity.
Hypothesis 2b	Trust has a significant and positive relationship with an individual's positive eWOM.
Hypothesis 2c	Trust has a significant and positive relationship with an individual's negative eWOM.
Hypothesis 3a	An individual's willingness to communicate has a significant and positive relationship with eWOM activity.
Hypothesis 3b	An individual's willingness to communicate has a significant and positive relationship with positive eWOM.
Hypothesis 3c	An individual's willingness to communicate has a significant and positive relationship with negative eWOM.
Hypothesis 4a	An individual's tie strength with another individual on the Internet has a significant and negative relationship with eWOM activity.
Hypothesis 4b	An individual's tie strength with another individual on the Internet has a significant and negative relationship with positive eWOM.
Hypothesis 4c	An individual's tie strength with another individual on the Internet has a significant and positive relationship with negative eWOM.

4.1. Operational Definitions

Important works related to this study have provided the constructs from which the framework and hypotheses are derived. For example, MacIntyre *et al.* (2001)'s study on willingness to communicate and Rotter's (1971) generalized trust scale are key references for questionnaire construction. The key operational definitions of the constructs are cited in Table 3.

Figure 1
Proposed Research Framework



4.2. Data Collection

Considering that the Internet usage rate is highest among students and teachers, the population of this study targets a sample of respondents in Taipei, Taiwan. Questionnaires were handed out in campus classrooms (including 5 national universities and 3 private universities) with the help of friends and postings on PTT, the largest online chat forum in Taiwan. All items utilized a five-point Likert scale ranging from 1 being "strongly disagree" and 5 being "strongly agree." All items were designed in English and then translated into traditional Chinese by a native speaker fluent in both languages to ensure the content and meanings were consistent. Back translation was provided by another bilingual speaker who compared the translation to the original scale.

Table 3

Operational Definition of Constructs

Construct	Operational Definition	Key References
Trust	The degree to which an individual believes that the sincerity, benevolence, or truthfulness of others can generally be relied on.	Gurtman (1992); Rotter (1971).
Willingness to Communicate	The level of intention an individual has to initiate a conversation when given a choice.	MacIntyre *et al.* (2001); McCroskey and Richmond (1987).
Tie Strength	The closeness of the relationship between two individuals.	Duhan *et al.* (1997); Granovetter (1973).
Electronic Word-of-Mouth Activity	The quantity and frequency of information the sender provides during the electronic word-of-mouth communication process.	Harrison-Walker (2001).
Positive Electronic Word-of-Mouth	Positive statements of praise made by a customer about a product or brand.	Cheung *et al.* (2008); Hennig-Thurau *et al.* (2004).
Negative Electronic Word-of-Mouth	Negative statements or complaints made by a customer about a product or brand.	Cheung *et al.* (2008); Hennig-Thurau *et al.* (2004).

The official questionnaire is divided into 5 sections: electronic word-of-mouth, trust, willingness to communicate, tie strength, and demographic variables. Electronic word-of-mouth activities were measured using Churchill's (1979) word-of-mouth scale which was modified by Harrison-Walker in 2001. Positive electronic word-of-mouth was measured using 3 items from the loyalty scale and electronic negative word-of-mouth used the scale from Liu and McClure's (2001) research on cross-cultural customer complaint behavior. To improve the efficiency and increase the unity of the questionnaire, scales were modified from 7 points to 5 points. Rotter's Trust scale, which was developed in 1967, was used in the study to measure trust. In 1985, McCroskey proposed a

scale to measure willingness to communicate as a personality-based trait that is consistent across different receivers and different communication contexts. This scale uses 20 items, with 8 items acting as fillers. The willingness to communicate scale includes four communication contexts and three different receivers. The study measured each individual's general willingness to communicate. Hansen's 1999 two item scale measured the closeness of working relationships and the frequency of contacts. These measures serve as a measure of tie strength.

4.3. Pretest

Two pretests were conducted before the official questionnaire was handed out to participants. Our study tested the reliability of the scales using a standard Cronbach alpha of 0.70. In the first pretest, many participants responded that the items of the trust scale were too hard to understand and were confusing. Therefore, the internal consistency received a fairly low score of 0.59. The original electronic word-of-mouth scale consisted of 2 dimensions which are word-of-mouth activity and positive word-of-mouth. Along with the replacement of a new positive word-of-mouth scale that consisted of 3 items, 2 items measuring negative word-of-mouth were added to strengthen the results of the study. Willingness to communicate achieved a high alpha of 0.80 and tie strength's alpha was 0.91.

For the second pretest, the revised questionnaire was used. Demographic questions were shown to be too sensitive and decreased the return rate. Therefore, the demographic variables were moved to the end of the questionnaire. Second, electronic word-of-mouth was rated with a total of 8 items including two newly added scales measuring negative electronic word-of-mouth. Furthermore, additional directions were added to each section to help participants navigate the questionnaire and mark responses to the questions. The results for the second pretest passed the bar of 0.70 for internal consistency except for trust. Four items that were negatively correlated with the scale were removed, which resulted in a Cronbach's alpha of 0.71. The final questionnaire distributed to the target sample had a total of 48 questions (Table 4).

Table 4

Measurement Items of Constructs

Construct		Measurement Item
Trust	Trust 1	Hypocrisy is on the increase in our society.
	Trust 2	In dealing with strangers one is better off to be cautious until they have provided evidence that they are trustworthy.
	Trust 3	This country has a dark future unless we can attract better people into politics.
	Trust 4	Using the honor system of *not* having a teacher present during exams would probably result in increased cheating.
	Trust 5	Parents usually can be relied upon to keep their promises.
	Trust 6	The United Nation will never be an effective force in keeping world peace.
	Trust 7	The judiciary is a place where we can all get unbiased treatment.
	Trust 8	Most people would be horrified if they knew how much news the public hears and sees is distorted.
	Trust 9	Even though we have reports in newspapers, radio, and T.V., it is hard to get objective accounts of public events.
	Trust 10	The future seems very promising.
	Trust 11	If we really knew what was going on in international politics, the public would have reason to be more frightened than they now seem to be.
	Trust 12	Most elected public officials are really sincere in their campaign promises.
	Trust 13	Many major national sports contests are fixed in one way or another.
	Trust 14	Most experts can be relied upon to tell the truth about the limits of their knowledge.
	Trust 15	In these competitive times one has to be alert or someone is likely to take advantage of you.
	Trust 16	Most salesmen are honest in describing their products.
	Trust 17	Most students in school would *not* cheat even if they were sure of getting away with it.
	Trust 18	Most repairmen will not overcharge even if they think you are ignorant of their specialty.
	Trust 19	Large shares of accident claims filed against insurance companies are phony.
	Trust 20	Most people answer public opinion polls honestly.
Willingness to Communicate (WTC)	WTC 1	Talk with a train station attendant.
	WTC 2	Talk with a physician.
	WTC 3	Present a talk to a group of strangers.

	WTC 4	Talk with an acquaintance while standing in line.
	WTC 5	Talk with a salesperson in a store.
	WTC 6	Talk in a large meeting of friends.
	WTC 7	Talk with a police officer.
	WTC 8	Talk in a small group of strangers.
	WTC 9	Talk with a friend while standing in line.
	WTC 10	Talk with a waiter/waitress in a restaurant.
	WTC 11	Talk in a large meeting of acquaintances.
	WTC 12	Talk with a stranger while standing in line.
	WTC 13	Talk with a secretary.
	WTC 14	Present a talk to a group of friends.
	WTC 15	Talk in a small group of acquaintances.
	WTC 16	Talk with a garbage collector.
	WTC 17	Talk in a large meeting of strangers.
	WTC 18	Talk with a spouse (or girl/boy friend).
	WTC 19	Talk in a small group of friends.
	WTC 20	Present a talk to a group of acquaintances.
Tie Strength (TS)	TS 1	How close were you with the person you most recently sent an electronic message to?
	TS 2	How often did you communicate with that person?
Electronic Word-of-Mouth Activity (eWOM Activity)	eWOM Activity 1	I mention the products that I use to others on the Internet quite frequently.
	eWOM Activity 2	There are certain products that I talk more about on the Internet than in person to others.
	eWOM Activity 3	When I use the Internet, I seldom miss the opportunity to talk about a certain product.
	eWOM Activity 4	I will use the Internet to recommend a product I like.
Positive Electronic Word-of-Mouth (Positive eWOM)	Positive eWOM 1	On the Internet, I will give positive reviews about a product I like.
	Positive eWOM 2	On the Internet, I will encourage others to buy or use products that I like.
Negative Electronic Word-of-Mouth (Negative eWOM)	Negative eWOM 1	On the Internet, I will share my experience about products that I do not like.
	Negative eWOM 2	On the Internet, I will try to convince others not to use or purchase products I do not like.

5. Research Results and Data Analysis

A total of 257 valid questionnaires were retrieved. Using AMOS version 17 software (Arbuckle, 2008), statistical analysis was conducted to examine and test the hypotheses. Structural equation modeling was used to examine the model goodness of fit and to test the hypotheses.

5.1. Sample Description

The respondents included 113 males and 144 females. The respondents were mostly young people in the age group of 19 to 23 (47%) and 24 to 28(41.63%) which matches the goal of the study to survey students and teachers at 8 universities that host the original community of web-based communications.

5.2. Structural Equation Modeling for Data Analysis

Structural Equation Modeling (SEM) was used to test the model and hypotheses derived from the literature. SEM is a powerful second generation statistical analysis method used for analyzing and creating causal models. This two step approach first tests the measurement model, then the structural model. The aim of the measurement model is to evaluate the reliability, validity, and goodness of fit. Confirmatory Factor Analysis (CFA) relies upon past studies which introduced factor analysis as an extension of maximum likelihood. CFA was performed and the results were used for further analysis (Table 5). Several items were removed since they did not meet the 0.5 criteria for reliability. Twelve items of the trust scale did not meet the loading standard criteria and were removed. Six items of the willingness to communicate scale scored low in the CFA. A total of 20 items were removed before conducting the measurement model analysis. The trust scale yielded a Cronbach α of 0.881, scoring much higher than the 2 pretests conducted. Furthermore, the 12 items for willingness to communicate had an internal consistency of 0.797, while tie strength had the highest internal consistency with an alpha of 0.893.

Table 5

Results of CFA and Validity After Removing Unsuitable Items

Item	Factor Loading	Cronbach Alpha	Composite Reliability	Average Variance Extracted
Trust 1	501	0.251		
Trust 2	870	0.757		
Trust 3	729	0.532		
Trust 6	501	0.251		
Trust 9	831	0.691		
Trust 11	588	0.474		
Trust 15	788	0.621	0.8755	0.5107
WTC[a] 6	546	0.298		
WTC 11	524	0.389		
WTC 14	511	0.373		
WTC 15	578	0.460		
WTC 19	507	0.257		
WTC 20	524	0.389	0.7708	0.3612
Tie 1	885	0.783		
Tie 2	911	0.830	0.8929	0.8066
eWOM act. 1	806	0.650		
eWOM act. 2	833	0.694		
eWOM act. 3	537	0.406		
eWOM act. 4	577	0.458	0.8295	0.5519
Pos. eWOM 1	787	0.619		
Pos. eWOM 2	741	0.549	0.7374	0.5842
Neg. eWOM 1	810	0.656		
Neg. eWOM 2	829	0.687	0.8036	0.6717

Note : [a]WTC is the abbreviation for Willingness to Communicate

Table 6

Discriminant Validity Comparing SQRT AVEs and Correlation Coefficients

	Trust	WTC	Tie Strength	eWOM Activity	Positive eWOM	Negative eWOM
Trust	**0.715**					
WTC[a]	0.030	**0.601**				
Tie Strength	-0.004	0.096	**0.898**			
eWOM Activity	-0.110	0.303**	0.239**	**0.743**		
Positive eWOM	-0.128*	0.282**	0.198**	0.625**	**0.764**	
Negative eWOM	-0.057	0.199**	0.232**	0.455**	0.444**	**0.820**

Note : ** Correlation is significant at the 0.01 level.
* Correlation is significant at the 0.05 level.
[a]WTC is the abbreviation for Willingness to Communicate.

Table 7

Fit Indices for Measurement and Structural Model

	χ^2/*d.f.*	GFI	AGFI	PGFI	TLI	CFI	RMSEA
Suggested Criteria	< 3	0.9	0.8	> 0.5	> 0.9	> 0.9	< 0.08
Measurement Model Results	1.668	*0.895*	0.865	0.697	0.934	0.944	0.051
Structural Model Results	2.278	*0.856*	0.818	0.679	*0.874*	*0.891*	0.070

Note : Italicized figures are indices that do not meet the suggested criteria

Table 8

Results of Path Analysis

Hypothesis	Path	Coefficients	S.E.	P-value
H1	Trust→WTC[a]	0.036	0.065	0.619
H2a	Trust→eWOM Activity	-0.133	0.056	0.047*
H2b	Trust→Positive eWOM	-0.155	0.065	0.034*
H2c	Trust→Negative eWOM	-0.085	0.082	0.194
H3a	WTC→eWOM Activity	0.347	0.080	0.000***
H3b	WTC→Positive eWOM	0.419	0.089	0.000***
H3c	WTC→Negative eWOM	0.221	0.105	0.003**
H4a	Tie Strength→eWOM Activity	0.264	0.039	0.000***
H4b	Tie Strength→Positive eWOM	0.225	0.045	0.005**
H4c	Tie Strength→Negative eWOM	0.270	0.054	0.000***

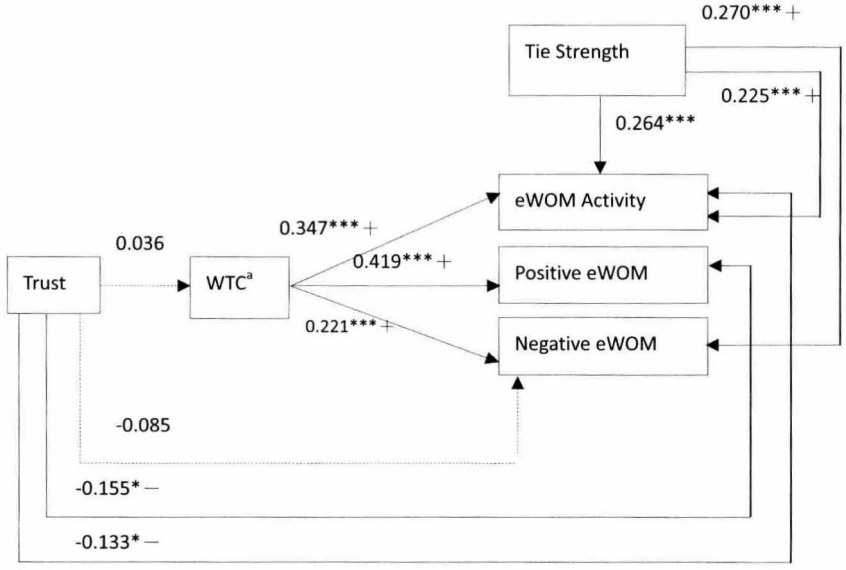
Note : *P-value < 0.05. **P-value < 0.01. ***P-value < 0.001.
[a]WTC is the abbreviation for Willingness to Communicate.
[a]WTC is the abbreviation for Willingness to Communicate.

Discriminant analysis was used to measure the difference between constructs (Kerlinger and Lee, 2000; Premkumar and Roberts, 1999). The results for the discriminant validity analysis are shown in Table 6. Average variance extracted (AVE) represents the amount of variance in the observed items accounted for by

the unobserved variable. The square root of the AVE of each construct should be higher than each of the correlations. The results provide support that the constructs are distinct. After conducting the reliability and validity tests, the measurement model was tested to examine whether the model was a good fit for the sample data in Table 7. Several common indices were applied and the following results were noted: the chi-square/degrees of freedom ($\chi^2/d.f.$ = 1.668), the goodness of fit index (GFI = 0.895), the adjusted goodness of fit index (AGFI = 0.865), the parsimony goodness of fit index (PGFI = 0.697), the Tucker-Lewis index (TLI = 0.934), the comparative fit index (CFI = 0.944), and the root mean square error of approximation (RMSEA = 0.051). The goodness of fit index was below the suggested criteria of 0.05. However, no further modification or changes were made to improve the goodness of fit since changes would be based on statistical data instead of theoretical data. Research should be based on theoretical studies and past literature to ensure trustworthy and concrete results. Therefore, we continued with the second part of structural equation modeling which is the testing of the hypotheses.

The test of the structural model determines whether there are significant relationships in the proposed causal model. The goodness-of-fit indices in Table 7 for the structural model show a slight lack of fit. Table 8 and Figure 2 depict the critical results of this study. Trust has a significant and negative effect on both eWOM activity (β = -0.133, $p < 0.05$) and positive eWOM (β = -0.155, $p < 0.05$) which partially supports Hypotheses 2a and 2b. Willingness to communicate has a significant and positive influence on eWOM activity (β = 0.347, $p < 0.001$), positive eWOM (β = 0.419, $p < 0.001$), and negative eWOM (β =0.221, $p < 0.01$). Therefore Hypotheses 3a, 3b, and 3c are supported. Tie strength has a positive and significant effect on all three eWOM related variables (β = 0.264, $p < 0.001$, β = 0.225, $p < 0.01$, β = 0.270, $p < 0.001$), partially supporting H4a and 4b. As expected, Hypothesis 4c is fully supported. Unexpectedly, H1 was rejected, since no significant relationship between trust and willingness to communicate was found. Likewise, H2c was also rejected since path analysis showed no significant relationship between trust and negative eWOM.

Figure 2
Results of Research Framework



6. Conclusion and Implications

This research examines whether willingness to communicate acts as a mediator between trust and electronic word-of-mouth. There is a significant relationship between several variables in the proposed model. Trust has a negative and significant effect on eWOM activity and positive eWOM. Willingness to communicate is proven to affect the consumer's eWOM communications in all three dimensions which are eWOM activity, positive eWOM, and negative eWOM. Individuals that one trusts are usually friends or family and can be easily contacted. This study also demonstrates from its results that the Internet is not the main communication platform for individuals who know each other personally and communicate frequently face-to-face. Traditional WOM and other forms of communication that include phone calls or personal visits are more direct. Internet users communicate more frequently with individuals that they are less familiar

with. Giving positive comments and praising products on the Internet yields a desired impression and helps build a positive personal image. On the contrary, consumers might consider that they are creating a negative self image if they write negative reviews and complaints. The level of dissatisfaction each consumer faces varies. It is likely that many of the electronic message recipients have not had the experience that caused and stimulated an urge for the messenger to share this information with others.

Tie strength is shown to have a significant and positive relationship with negative and positive eWOM and eWOM activity. This means that the strength of the social relationship has a direct relationship with the level of communications sharing. The stronger the tie strength between individuals, the more likely they will propagate eWOM on Internet platforms. The outcome of tie strength and trust with eWOM are unexpected since the directions of influence are different from results in the literature. These results can be used as the basis for further research. First, the personality of each individual may moderate the amount of usage of Internet (Guadagno, Okdie, and Eno, 2008). Guadagno, Okdie, and Eno (2008) used the Big Five personality measure scale to predict personality differences and Internet usage. Individuals that are high in openness to experience are more willing to share details of their daily life. Also, Swickert *et al.* (2002)'s study on Internet use and personality showed that personality is highly correlated with electronic information exchange (email and assessing information). Thus, Internet users do not have to trust the communicator to be more willing to spread eWOM.

6.1. Managerial Implications

This research provides several insights on how marketers can use eWOM as part of their strategy to attract and hold consumers. Certainly, eWOM should not be generalized to a single target audience. When targeting a mass target market, the sample should be divided among consumers with strong and weak tie strengths. Since there is no significant relationship between tie strength and trust, it should be further studied how individuals discriminate between the Internet users they interact with. If we understand how consumers choose others to share their eWOM, then it will be possible to develop marketing tactics which

encourage communication. Electronic messages are a new tool for the advertising industry. Media providers freely interact with consumers and advertise through the Internet which shortens the distance between consumers and corporations and builds a larger target audience (Hung and Li, 2007).

6.2. Limitations and Future Research

Although this study provides useful practical insights and a basis for theory development, there are limitations. First, the sample consists of college students and teachers in Taipei City. Since the sample reflects a small portion of our society, the diversity of the sample should be increased and additional hypotheses created. For future research, different groups of Internet users can be examined for differences in electronic word-of-mouth sharing. Since Internet usage behavior (e.g., the amount of time spent on the Web) influences the interest in the Internet (Awad and Ragowsky, 2008), usage time will likely affect eWOM. Hence, online behaviors can be examined to observe the difference between different groups of Internet users. Finally, it would be worthwhile to examine if there are more constructs (for example, personality, and mood) that will effectively complete the model.

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