The Influence of eWOM within The Online Community on Consumers’ Purchasing Intentions-The Case of The Eee PC

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Abstract

The novelty of the study consists in applying eWOM communications and Technology Acceptance Model (TAM) in the context of online communities to explain user’s intention toward innovative product / service. Our findings indicated that eWOM effect is a key antecedent of perceived ease of use, perceived usefulness, and perceived enjoyment. The recommender’s levels of expertise, seeker’s levels of expertise, trust, and information quality are also critical in building eWOM communication. The current study builds an effective Internet marketing strategy, and guides managers in selecting an appropriate strategy for the consumers in the online communities.

Keywords: electronic word-of-mouth (eWOM), information quality, online community, technology acceptance model (TAM), purchasing intentions
1. Introduction

Following the emergence and development of Web 2.0, online communities have become a popular place for online users to search for and collect information on other consumers’ shopping experiences, evaluations, and opinions (Kozinets, 2002; Park & Lee, 2009). They not only increase the speed at which information is transmitted, but also decrease the information asymmetry. This phenomenon is the so-called electronic word of mouth (eWOM) effect. Due to the eWOM communication of the online community mainly provides user-oriented information that describes a product in terms of its usage, and also measures the product’s performance from a user’s perspective (Bickart and Schindler, 2001; Chang and Liu, 2009), it is higher and more effective persuasive effect than traditional marketing tools (Katz, Lazarsfeld, & Roper, 1955; Bickart, 2002). Most consumers have a tendency to read all available and in-depth information, especially in the case of recently-innovated products. Furthermore, around 74% of online users in Taiwan indicate that the evaluations of the online communities or blogs are likely to influence their purchase intention (MIC, 2008). Therefore, firms should build the effective Internet marketing strategy, and understand the eWOM effect for the consumer’s purchase intention.

The technology acceptance model (TAM) is a popular model used to explain a user’s adoption intention toward a new technology or product (Davis, 1989). Furthermore, Davis, Bagozzi, and Warshaw (1992) have extended the original TAM to encompass the perceived enjoyment experienced by consumers as a major factor that causes them to use a new technology or product. In order to enhance the ability of TAM for online applications, TAM needs to include the influences of the consumer’s intention via online interaction, i.e., eWOM communication (Monsuwe, Dellart, & de Ruyter, 2004). However, few studies explore how eWOM affects the consumers’ purchasing intentions. To address the observed gaps in eWOM communication studies and TAM research, this paper engages in analyzing the eWOM effect within online communities when customers decide/intend to purchase an innovated product.

The Eee PC, based on joint R&D conducted by Asus and Intel, is the first Netbook to be introduced to the consumer market. Its emphasis on an ethereal surface, its convenience of portability, ease of use, and low-price has brought about a wave of unrest in the Notebook market. It is sought in a new market the demand for which has not yet been met, and it is also observed that the demand for mobile Internet access has increased. The Eee PC seeks to satisfy the consumer’s needs and might even transform his life into one in which portable fittings are predominant. It is part of a disruptive innovation. Disruptive innovation shifts customer expectations and competition to new performance attributes and ultimately leads to the failure of incumbents (Christensen, 1997). Furthermore, the Netbook was among the top 10 focal products in 2009 (TRI, 2009). Firms expect that the Eee PC can bring about a universal and wide digital applications market. Therefore, this study chooses the Eee PC as our research target and uses the determinants of the variables of eWOM communication as
the external variables to examine the individual’s acceptance behavior in regard to the Eee PC in the online communities.

This paper is focused on deciding whether and how to integrate TAM with the eWOM communication theory to analyze the influence when customers decide/intend to purchase a new product in the online communities. Through this study, the researchers can identify antecedents of TAM in regard to the consumers’ intention to purchase an innovated product so that the managers can build an appropriate and valuable marketing strategy for the consumers in the online communities.

2. Literature review

2.1 Word-of-mouth Communication

Word-of-mouth (WOM) communication is a valuable marketing resource for consumers and marketers (Hu, Liu, & Zhang, 2008), and it is becoming increasingly recognized as an important form of the recommender-seeker relationship, the richness and strength of the message and its delivery, and various personal and situational factors (Sweeney, Soutar, & Mazzarol, 2008). The online communities’ members often possess rich knowledge or know-how to solve the problems for seekers. The phenomenon of helping behavior among members may become a major source and channel for information in the decision making process for the purchase of products (Chu, 2009). Therefore, the eWOM has proved to play a major role in influencing consumer purchasing decisions (Katz et al., 1955). The above studies spell out the importance of eWOM communication for online marketing and purchasing decisions of consumers.

The seeker’s level of expertise is the main characteristic of the seeker that is expected to affect his or her susceptibility to influence (Bansal & Voyer, 2000). Previous studies investigated the importance of the recommender’s and the seeker’s expertise based on the influence that a recommender’s WOM had on a seeker, i.e., his perceived influence. The findings supported the effect of the seeker’s expertise on the impact of perceived influence, which was suggested to be negative (Gilly, Graham, Wolfinbarger, & Yale, 1998; Bansal & Voyer, 2000; Wangenheim & Bayon, 2004). More specifically, if the seeker’s level of expertise is high, he is less affected by the other’s recommendation (Herr, Kardes, & Kim, 1991). Therefore, we hypothesize the following:

\[ H1: \text{The seeker’s level of expertise negatively affects perceived influence.} \]

The expertise of the source has frequently been mentioned as affecting the influence of a piece of information (Herr et al., 1991; Yale & Gilly, 1995). Gilly et al. (1998) indicated that either a positive or a curvilinear relationship exists between product knowledge and experience and external search. Nevertheless, the evidence supports the existence of a positive relationship between expertise and perceived influence. Therefore, we present the following hypothesis:
H2: The recommender’s level of expertise positively affects perceived influence.

Nowadays the online communities are the key sources of knowledge sharing and eWOM communications. Trust is an important factor and antecedent of behaviors in social interactions (Lin, Weng, and Hsieh, 2003). It is defined as the information source is perceived to be believable, trustworthy, and reliability by the information receivers (Petty & Cacioppo, 1986; McCole, Ramsey, & Williams, 2009). Moreover, trust has been found to significantly affect the recipients’ perceptions and opinions when the recommender has specific expertise (Wangenheim & Bayon, 2004). Thus, we offer the following hypothesis:

H3: The recommender’s level of expertise positively affects trust.

Within the context of the online environment, trust has a significant effect on consumer behavior (Hoffman, Novak, and Peralta, 1999). When buying a product, consumers have a tendency to collect all available information. The importance of information quality and trust has been emphasized and has had a positively significant effect in previous studies on information seeking (Rieh, 2002; Cheung, Lee, & Rabjohn, 2008). Based on the above discussion, we hypothesize:

H4: Trust positively affects the information quality.

During the information seeking process, consumers are concerned about the detailed information that they miss, resulting in their becoming less satisfied, less confident, and more confused when provided with too much information. Some studies showed that information quality had a positive valuable predictor of the perceived ease of use and perceived usefulness of online communities (Lin & Lu, 2000; Lin, 2007). In the CMEs, customers’ purchasing decisions regarding a firm’s products and services can be determined by their cognition of the information quality, i.e. perceived influence. The customers are willing to purchase or adopt the new products/services when they perceive that the information meets their needs and requirements. Consequently, we hypothesize the following:

H5: Information quality positively affects perceived influence.

2.2 Technology acceptance model

The technology acceptance model (TAM) was proposed by Davis (1989), and is one of the better known models for explaining the intention to use a technology or product. A key purpose of TAM is to provide a basis for tracing the impact of external variables on internal beliefs and intentions. It involves two primary predictors, namely, the perceived ease of use (PEOU) and perceived usefulness (PU), in addition to the dependent variable behavioral intention (BI). PEOU is the perception that a particular system or application is easy to use, and PU is defined as the degree to which a person believes that using a technology would enhance his or her performance (Davis, 1989). Davis et al. (1992) extended the original TAM to encompass perceived enjoyment (PE) as an additional motivational determinant of acceptance. PE is regarded as the extent to which the activity of using computers is perceived
to be enjoyable in its own right, apart from any performance consequences that may be anticipated. It has been confirmed that PE is a major factor that drives consumers to use a new technology (Davis et al., 1992). Therefore, we incorporate PE into the research model. Depending on the expertise of the recommender and the seeker’s perception, sources, and information quality, the same content will engender different levels of perceived influence. TAM emphasizes the importance of how external variables can affect the individuals’ internal decision process when it comes to using a system within organizations (Saade & Kira, 2007). We therefore posit the following hypotheses:

H6a: Perceived influence positively affects perceived usefulness.
H6b: Perceived influence positively affects perceived ease of use.
H6c: Perceived influence positively affects perceived enjoyment.

TAM suggests that PEOU, PU and PE directly affect an individual’s behavioral intention to use the product (Davis et al., 1989; Venkatesh & Davis, 1996, 2000; Venkatesh & Morris, 2000). Moreover, PEOU has a strong linkage with PU and PE (Davis et al., 1989; Venkatesh & Davis, 1996, 2000; Venkatesh & Morris, 2000; Kim, Ferrin, & Rao, 2008). Thus, we expect that:

H7a: Perceived ease of use positively affects purchase intention.
H7b: Perceived ease of use positively affects perceived usefulness.
H7c: Perceived ease of use positively affects perceived enjoyment.
H8: Perceived usefulness positively affects purchase intention.
H9: Perceived enjoyment positively affects purchase intention.

The research model is based on concepts from eWOM communication and TAM researches that consist of trust, the recommender’s and seeker’s levels of expertise, information quality, perceived influence, and PE along with the traditional components of TAM. There is both a theoretical and a managerial need for an in-depth study of the way in which value is created in the consumer’s intention to purchase.

3. Methodology

3.1 Sample

In order to target the consumers who had already visited the online community within the past six months, an e-survey was employed. The respondents were asked to complete the questionnaire and allowed them to visit multiple communities. A total of 473 responses were collected and 415 usable questionnaires, which were submitted by 207 males and 208 females, were analyzed. The effective response rate was 87.7%, a good rate of return in survey methodology. Of the respondents, 91.1% were under 35 years of age and 99.3% had a bachelor’s degree from a college or university or above. It was shown that the respondents were young and educated. The majority of the respondents were members of the communities, and they had some experience in reading and writing comments within the online community.
3.2 Measurement instrument

The survey used a multi-item approach with each construct being measured by a few items to determine the construct’s validity and reliability. The measurements of the construct were measured on a seven-point Likert scale, ranging from “strongly disagree” (1) to “strongly agree” (7). Before conducting the main survey, we performed a pre-test and a pilot test to validate the instrument. The pre-test included 50 graduate students who were experienced online community participants, and often visited and commented on the online community.

4. Empirical results

4.1 results and analysis

A structural equation modeling (SEM) technique is applied to test the results of hypotheses testing. The measurements of the construct, the factor loadings, composite reliability (CR), and the average variance extracted (AVE) are presented in Table 1. All items exceed the recommended level of 0.5 (Hair, Anderson, Tatham, & Black, 1998). In this study, the measurement scales was made in the stage of employing the confirmatory factor analysis (CFA) for the purpose of delineating more valid constructs. The Cronbach’s alphas of the nine constructs were found to range from 0.79 (the seeker’s level of expertise) to 0.97 (the intention to purchase), which shows that the measures were internally consistent because they were all above the recommended criterion of 0.7 (Hair et al., 1998). The each CR and AVE is above 0.7 and 0.5, respectively (Fornell & Larcker, 1981). Discriminant validity are shown in Table 2 which valuates through the squared root of the AVE for each construct. The results suggest adequate convergence validity and discriminant validity for all measures. Furthermore, no pair of measures had correlations exceeding the criterion (0.9 and above), as suggested by Hair et al. (1998), implying that no multicollinearity existed among the various constructs.

Table 1 Construct measurement

<table>
<thead>
<tr>
<th>Construct [CR, AVE]</th>
<th>Item Measures</th>
<th>Loading</th>
<th>Cronbach’s alphas</th>
<th>Supporting literatures</th>
</tr>
</thead>
<tbody>
<tr>
<td>The seeker’s level of expertise (ES) [0.94, 0.81]</td>
<td>ES1 I know very much about Eee PC.</td>
<td>0.79</td>
<td>0.79</td>
<td>Bnsal and Voyer (2000)</td>
</tr>
<tr>
<td></td>
<td>ES2 I have had experienced about purchasing or using Eee PC.</td>
<td>0.91</td>
<td>0.91</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ES3 I am the expert buyer.</td>
<td>0.81</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ER1 I think that the recommenders on community are knowledgeable.</td>
<td>0.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ER2 I think that the recommenders on community are capable.</td>
<td>0.80</td>
<td>0.91</td>
<td>Bnsal and Voyer (2000)</td>
</tr>
<tr>
<td>The recommender’s level of expertise (ER) [0.88, 0.65]</td>
<td>ER3 I think that the recommenders on community are expert.</td>
<td>0.86</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ER4 I think that the recommenders on community are experienced and trained.</td>
<td>0.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust [0.87, 0.7]</td>
<td>Trust1 I trust the information offered by members of the community.</td>
<td>0.90</td>
<td>0.94</td>
<td>Venkatesh and Davis (1996)</td>
</tr>
<tr>
<td></td>
<td>Trust2 I trust community’s information to be true.</td>
<td>0.93</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trust3 People on community are trustworthy.</td>
<td>0.86</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The results of the structural model tested are illustrated in Figure 1. Using path analysis, the predicted relationships among the exogenous and endogenous constructs were tested. Maximum likelihood estimation (MLE) was employed to estimate the structural parameters of the model. Most of the model fit indices from the CFA demonstrated a good fit with $\chi^2(\text{df}) = 806.4$ (340), $\chi^2 / \text{df} = 2.37$, the goodness-of-fit index (GFI)= 0.89, the root mean square error of approximation (RMSEA) = 0.06, the adjusted goodness-of-fit index (AGFI)=0.84, the normed fit index (NFI)= 0.98, and the non-normed fit index (NNFI)=0.99.

### Table 2 Correlation Matrix

<table>
<thead>
<tr>
<th></th>
<th>ES</th>
<th>ER</th>
<th>Trust</th>
<th>PI</th>
<th>PU</th>
<th>PEOU</th>
<th>PE</th>
<th>Int</th>
<th>IQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES</td>
<td>0.9*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ER</td>
<td>-0.30</td>
<td>0.81*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust</td>
<td>-0.41</td>
<td>0.77</td>
<td>0.84*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PI</td>
<td>-0.59</td>
<td>0.55</td>
<td>0.69</td>
<td>0.84*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PU</td>
<td>-0.30</td>
<td>0.55</td>
<td>0.61</td>
<td>0.42</td>
<td>0.91*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEOU</td>
<td>-0.30</td>
<td>0.52</td>
<td>0.59</td>
<td>0.52</td>
<td>0.58</td>
<td>0.93*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PE</td>
<td>-0.32</td>
<td>0.62</td>
<td>0.67</td>
<td>0.55</td>
<td>0.71</td>
<td>0.58</td>
<td>0.96*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Int</td>
<td>-0.28</td>
<td>0.53</td>
<td>0.57</td>
<td>0.50</td>
<td>0.59</td>
<td>0.52</td>
<td>0.76</td>
<td>0.87*</td>
<td>0.94*</td>
</tr>
<tr>
<td>IQ</td>
<td>-0.42</td>
<td>0.67</td>
<td>0.79</td>
<td>0.66</td>
<td>0.63</td>
<td>0.59</td>
<td>0.74</td>
<td>0.65</td>
<td>0.94*</td>
</tr>
</tbody>
</table>

Note:* values in the diagonal are square root of the average variance extracted (AVE).
Although the $\chi^2$ statistic exhibited a significant $p$-value, the relatively large sample size of our study (N=415) offset the seriousness of the effect of the statistic on the validity of the measurement model (Anderson and Gerbing, 1982). It is suggested that $\chi^2 / df$ should not exceed 3, that NFI and NNFI should exceed 0.9 (Bentler and Bonett, 1980), and that GFI and AGFI should be greater than the recommended value of 0.8 (Seyal, Rahman, and Rahim, 2002). Collectively, the results of the CFA satisfy the recommended level for the goodness of fit, which implies that the measurement model generally fits the sample data well.

![Figure 1 Results of structural model analysis](image)

### 4.1 Discussion

This paper examined the structural equation model by testing the hypothesized relationships among the variables for eWOM communication and TAM. In Figure 1, the significance of the path loadings provides the results for all the hypotheses, except $H7a$. The results significantly supported $H1$ and $H2$ by showing that the seeker’s level of expertise and the recommender’s level of expertise were the predictors of perceived influence, which was consistent with previous research on eWOM communications (Gilly et al., 1998; Bansal and Voyer, 2000). This paper also hypothesized that trust would mediate the effect of the recommender’s level of expertise with information quality, and the results showed a strong linkage between the recommender’s level of expertise and trust, providing support for $H3$ and $H4$. A probable reason for this finding is that a good recommender’s level of expertise with the online communities can contribute towards the high information quality and trust in its contents. The information quality significantly affected perceived influence, and supported $H5$. In the online communities, trust is likely to prove helpful in determining the information quality. Such information quality offers critical levers that can be used to influence the seekers’ perceived influence regarding the value of eWOM communication. The more that consumer’s trust in an online community, the less effort they have to make to scrutinize the details of the online community to assess the online product reviews.

Furthermore, $H6a$ to $H6c$ were also supported and exhibited perceived influence has a significant impact on the PEOU, PU, and PE. The PEOU was also found to significantly and
positively affect PU and PE, providing support for $H7b$ and $H7c$. The results also showed that PU and PE had significant effects on the intention to purchase, thereby supporting $H8$ and $H9$. Moreover, the findings are in line with previous studies (Davis et al., 1989; Venkatesh & Davis 1996, 2000; Venkatesh & Morris 2000; Kim et al., 2008). Contrary to expectations, the PEOU had no influence on the purchase intention. Unexpectedly, PEOU was not found to impact purchase intention as much as PU and PE. As noted earlier, our research target, the Eee PC, is a new kind of notebook, referred to as a netbook. A netbook is a lightweight, low-cost, energy-efficient, highly portable laptop suitable for web browsing, email and general purpose applications, and is also regarded as a second notebook. According to the survey of MIC (2008), the main reasons for purchasing an Eee PC or netbook are that it is easy to carry and it can be used to access the Internet while on the move. The method of operation of the Eee PC is similar to that of full-featured notebooks. Therefore, the results have shown that PEOU did not have a significant impact on the intention to purchase.

5. Conclusions

While eWOM communication is a critical issue that has been addressed in prior research, it is also important to comprehend the pre-adopter adoption of an innovated product or technology and the factors that drive them. The major contribution of this study is that it facilitates understanding of consumers’ pre-adoption behavioral intentions via the eWOM communication of online communities. The factors underlying eWOM communication affect managerially relevant outcomes, namely, the value of the firm’s offering and the customers’ future purchase intentions. As a second contribution, we have also sought to find a theoretical and practical explanation that will assist researchers and managers as they seek to understand and manage the eWOM communication among online communities. Since new innovated product development in uncertain environments is highly risky and more susceptible to technological innovations than to meeting customer demand, the integration of the eWOM communication of the online communities with market orientation serves to strengthen the product design and technical competence of firms operating in uncertain environments. The study reveals that firms should focus on existing innovations without ignoring customer needs (Johne and Snelson, 1988). In addition, firms should develop an appropriate Internet marketing strategy to manage the online community.

Although this study provides valuable insights into the TAM context, it has several limitations. First, even though our results hold for the Eee PC, we did not observe a similar set of results for other innovated products. Second, although we tested some popular online communities in Taiwan, other platforms may play an important role in explaining the impact of eWOM communication on consumer acceptance behavior, such as Amazon.com, Blogspot, and the Bulletin Board System. Future research could consider some significant variables between the dimensions of eWOM communication such as tie strength and similarity, and
moderating variables such as the experience in the community.

Reference


