

**Manuela López**

Universidad de Murcia  
E-mail: manuela.lopez@um.es

**María Sicilia**

Universidad de Murcia  
E-mail: sicilia@um.es

## El boca a oreja electrónico en la adopción de nuevos productos. Comparación de estrategias de comunicación

### RESUMEN

La elección de la estrategia de comunicación es un elemento crítico en el proceso de adopción de un nuevo producto. La decisión de adoptar un nuevo producto viene determinada por el éxito de dos fases: la toma de conciencia y la adopción. Estudios previos han demostrado que la publicidad es la herramienta de comunicación que mejor funciona en la introducción, mientras el boca a oreja necesita que los consumidores conozcan previamente el nuevo producto para comenzar el proceso de difusión de la información. Sin embargo, el desarrollo de las nuevas tecnologías está permitiendo a las empresas realizar de campañas de boca a oreja electrónico. El objetivo de este estudio es determinar qué estrategia de comunicación es más apropiada en las primeras fases del proceso de difusión. En contra a lo demostrado en la literatura previa, los resultados demuestran que las empresas deberían empezar la campaña de comunicación de un nuevo producto con boca a oreja electrónico y continuarla con publicidad.

**Palabras Clave:** Boca a oreja electrónico, Publicidad, Toma de Conciencia, Adopción, Nuevos Productos

## How e-wom contributes to new product adoption. Testing competitive communication strategies

### ABSTRACT

Communication strategy is a critical element of new product adoption. The decision to adopt a new product is determined by the success of a sequence of two stages: product awareness and product adoption. Previous studies have shown advertising is the tool that best works at the first stage of the introduction, as WOM needs informed individuals to start the process. However, the expansion of new media facilitates firms to develop and manage electronic word of mouth (e-WOM) campaigns. The aim of this paper is to determine which communication strategy is more appropriate at early stages of the diffusion process. Contrary to assertions in the previous literature, results show firms should start new product communication with e-WOM and then continue it with advertising.

**Keywords:** e-WOM, Advertising, Awareness, Adoption, New Products.

**JEL classification:** M37, M31

## **DIRECTORES**

**D. Rodolfo Vázquez Casielles**

Catedrático Comercialización e  
Investigación de Mercados.  
Universidad de Oviedo

**D. Juan A. Trespalacios Gutiérrez**

Catedrático Comercialización e  
Investigación de Mercados.  
Universidad de Oviedo

**D. Eduardo Estrada Alonso**

Profesor Titular de Derecho Civil.  
Universidad de Oviedo

## **COORDINADORES**

**D. Luis Ignacio Álvarez González**

Profesor Titular Comercialización e  
Investigación de Mercados.  
Universidad de Oviedo

**D. Santiago González Hernando**

Profesor Titular Comercialización e  
Investigación de Mercados.  
Universidad de Oviedo

## **CONSEJO EDITORIAL**

**D. Raimundo Pérez Hernández y Torra**

Director de la Fundación Ramón Areces

**D. Jaime Terceiro Lomba**

Vocal del Consejo Asesor de Ciencias Sociales de la Fundación Ramón Areces

**D. Alfonso Novales Cinca**

Catedrático Economía Cuantitativa. Universidad Complutense de Madrid

La colección de **Documentos de Trabajo de la Cátedra Fundación Ramón Areces de Distribución Comercial (DOCFRADIS)** trata de fomentar una investigación básica, pero a la vez aplicada y comprometida con la realidad económica española e internacional, en la que participen autores de reconocido prestigio en diferentes áreas relevantes para el diseño de estrategias y políticas de distribución comercial.

Las opiniones y análisis de cada DOCFRADIS son responsabilidad de los autores y, en consecuencia, no tienen por qué coincidir con las de la Cátedra Fundación Ramón Areces de Distribución Comercial de la Universidad de Oviedo.

La difusión de los documentos de trabajo se realiza a través de INTERNET en la siguiente página web: <http://www.catedrafundacionarecesdcuniovi.es/documentos.php>

La reproducción de cada DOCFRADIS para fines educativos y no comerciales está permitida siempre y cuando se cite como fuente a la colección de Documentos de Trabajo de la Cátedra Fundación Ramón Areces de Distribución Comercial (DOCFRADIS).

ISSN: 2253-6299

Depósito Legal: AS-04989-2011

Edita: Cátedra Fundación Ramón Areces de Distribución Comercial de la Universidad de Oviedo

## **How e-wom contributes to new product adoption. Testing competitive communication strategies**

*Manuela López*

Departamento de Comercialización e Investigación de Mercados  
Facultad de Economía y Empresa  
Universidad de Murcia  
Campus Universitario de Espinardo (30100 Murcia)  
e-mail: manuela.lopez@um.es

*María Sicilia*

Departamento de Comercialización e Investigación de Mercados  
Facultad de Economía y Empresa  
Universidad de Murcia  
Campus Universitario de Espinardo (30100 Murcia)  
e-mail: sicilia@um.es

## 1. INTRODUCCIÓN

Successful new product introduction is important for a firm's long-term performance (Prins & Verhoef, 2007; Rogers, 1983). Marketing activities of firms are therefore devoted to increase the likeability of success in a new product launch, as well as its rate of growth (Peres et al., 2010). Communication strategy constitutes a critical element of new product adoption, the element most directly responsible for aiding the consumers' acceptance of it (Lee & O'Connor, 2003). Innovations can be transmitted by both mass media and interpersonal communication via word of mouth (WOM) (Mahajan et al., 1990). Previous literature has demonstrated that personal influences have shown greater influence over consumer choices than personal selling, print advertisements, or radio (Katz & Lazarsfeld, 1955; Goldsmith & Horowitz, 2006). As a consequence of this greater influence, the diffusion of innovation literature puts great emphasis on the effect of WOM as a channel of communication (Cui et al., 2010). In a pioneer study Bass' (1969) product diffusion model suggested that some consumers adopt products because of the influence of their friends and direct contacts who have already adopted the product rather than the influence of marketers. Diffusion then takes off as a result of personal influences, spreading through networks of consumers (Delre et al., 2007a). Nevertheless, advertising continues to be the main communication tool to be used when introducing a new product in the market (Manchanda et al. 2008; Narayanan et al., 2005; Rogers & Adhikarya, 1979; Van den Bulte & Lilien, 2001b).

Nowadays, social media tools enable consumers to extend their connections and conduct WOM with fewer restrictions. New technologies make it easier for consumers to share product- and brand-related information with each other (Stephen & Lehmann, 2009). Therefore, electronic WOM (e-WOM) can transmit information faster than traditional WOM and reach far beyond the local community through Internet (Chatterjee, 2001; Lee et al., 2008). As a result, firms are increasingly interested in developing e-WOM campaigns as a potential new communication tool (Keller & Berry, 2003; Kozinets et al., 2010; Libai et al., 2010). Recent research supports this thesis by demonstrating that e-WOM (in the form of consumer reviews/comments) affects company sales (Chevalier & Mayzlin, 2006; Godes & Mayzlin, 2009). However, although there are some studies on product diffusion in offline WOM, there are very few empirical studies on product diffusion which consider e-WOM (Thompson & Sinha, 2008; Xu et al., 2008).

From a marketer perspective, it is very relevant to analyze which communication strategy should be followed when introducing a new product in the market. The selection of the optimal communication strategy is a very difficult task (Delre et al., 2007a). Very little is known about how to market successfully using personal influences online, as e-WOM marketing is still very experimental in nature (Spaulding, 2010). Furthermore, few studies have attempted to integrate

mass and interpersonal communication influences (Lee et al., 2007; Libai et al., 2010). Previous research has either focused on demonstrating that contagion exists though ignoring the role of marketing communication (Manchanda et al., 2008) or has assumed the effect of internal (WOM) and external (advertising) influences are independent (Bass, 1969). However, it is reasonable to think that the two effects are interrelated (Mandancha et al., 2008; Villanueva et al., 2008). This relationship is especially interesting because WOM interactions are often mentioned as an alternative to traditional media, yet marketers do not understand the extent to which WOM complements or substitutes for traditional media (Libai et al., 2010). An understanding of these effects can help firms to achieve better control of the growth process and optimize their investments accordingly (Peres et al., 2010). In this paper we address this issue by investigating how a firm should orchestrate a communication campaign that drives consumer awareness and adoption of a new product. Specifically we analyze which communication tool should be the first one to be developed in order to create new product awareness, e-WOM or advertising, as well as which is the best to continue the communication campaign to encourage new product adoption. To the best of our knowledge, this is one of the first studies to analyze whether firms should actively promote e-WOM or whether it should be naturally promoted by its customers after an advertising campaign.

## 2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Previous research has established the importance of WOM as a driver of new product diffusion (Arndt, 1967; Brooks, 1957). The model proposed by Bass (1969) assumed that the diffusion process is driven primarily by interpersonal communication. A new product is first adopted by some who, in turn, influence others to adopt it (Bass, 1969; Rogers, 1983). A classical study of this steam is that of Coleman et al. (1966). It analyzes the social contagion effects on physicians' behaviour. Interpersonal communication was the driving factor behind physicians' adoption of a new drug. Later studies have also highlighted the importance of WOM in new product diffusion. Bandiera & Rasul's (2004) study has showed that farmers' social networks influence their decisions to adopt a new crop, and Conley & Udry (2005) have demonstrated that WOM also affect the adoption of a new farming technology. Similarly, Bell & Song (2007) have established that social interaction (grounded as physical proximity) stimulates trial of a new Internet service.

The decision to adopt a new product is determined by the success of a sequence of two main stages: product awareness and product evaluation/adoption (Iyengar et al., 2010; Van den Bulte & Lilien, 2001; Weenig & Midden, 1991). Distinguishing between awareness and adoption may be critical to understand what drives adoption decisions, because research suggests that different

factors affect these two stages differently (Van den Bulte & Lilien, 2001). Literature on new products diffusion has demonstrated that commercial communication is more important at creating awareness-knowledge of new idea, so it is the best way to inform consumers that the product is available; while more personal and non-commercial sources are more important at the evaluation stage (Narayanan et al., 2005; Peay & Peay, 1984; Rogers & Adhikarya, 1979; Van den Bulte & Lilien, 2001). Adoption over time is therefore dominated by marketing communications early on, while WOM dominates a few months later (Mancharanda et al., 2008). Similarly, Delre et al. (2007a; 2007b) state that from a marketing perspective it is of great importance to understand how information starting from mass media (external influence) and travelling through WOM (internal influence) affects the adoption decision of consumers and consequently the diffusion of the new product. In a similar line of reasoning, Hogan et al. (2004) suggest that it is the initial marketing communication that triggers a customer's initial purchase. That purchase experience subsequently triggers the spread of word-of-mouth, as customers share their experience with others. In a similar vein, Golderberg et al. (2001) explain that advertising is the tool that best works at the first stage of the introduction because WOM needs informed individuals to start the process. In addition, a recent study is also in line with this reasoning by showing online reviews are less influential in the early phases of game life cycle than in the latest (Zhu & Zhang, 2010). To further support this argumentation, Stephen & Galak (2009) also find that traditional media tend to initiate information diffusion and buzz building, whereas social media plays an important role in keeping the information spreading and the buzz alive. In summary, all these research supports the idea that the whole process would never be initiated without the customer's initial exposure to traditional advertising.

However, since the advent of the Internet some of these assumptions may have changed. With the Internet's growing popularity, online consumer reviews have become an important resource for consumers seeking to discover new product quality, so there is a growing opportunity of telling others about particularly pleasant products (Zhu & Zhang, 2010). Marketers are therefore increasingly interested in making use of firm-created e-WOM to promote new products since they are able to stimulate the trial, adoption, and use of products and services (Pentina et al., 2008). Although e-WOM is usually spontaneously generated (Buttle, 1998), the expansion of new media facilitate firms to develop e-WOM campaigns (Trusov et al., 2009). Therefore, consumers can know about the product through others reviews on the Internet, blogs or forums, before an advertising campaign has starting. Additionally, although conversations created by WOM campaigns are not spontaneously started by consumers, previous research has shown they also affect consumer behaviour. Godes & Mayzlin (2009) have shown WOM created by a firm drives sales. Similarly, Trusov et al. (2009) concluded that WOM campaigns have a much stronger impact on new customer acquisition than traditional forms of marketing. Furthermore,

although mass media positively affects new product diffusion, WOM communication has a much greater effect on the overall diffusion (Goldenberg et al., 2002; Sultan et al., 1990). Thus, starting the new product diffusion with e-WOM should exert more influence on consumer awareness than starting with advertising:

*H1: In a new product launch, a communication campaign that starts with e-WOM generates more awareness than a communication campaign that starts with advertising.*

Consumers' adoption speed increases as the volume of WOM is higher (Shen & Hahn, 2008). The more conversation there is about a product; the more likely someone is to be informed about it, thus leading to consumer awareness (Godes & Mayzlin, 2004). In addition, Trusov et al. (2009) show that WOM leads to more people involved in WOM and more people leads in turn to more WOM. Therefore, companies need consumers to be involved in this e-WOM process. Several motivations for participating in WOM have been proposed in the literature. Individuals may contribute to the diffusion in an attempt to build social relations (e.g., attention from others, strengthening friendship) (Burt, 1999). Therefore, the decision of individuals to have a conversation about product will at least partly be made with certain social consequences of the conversation in mind (Dholakia et al. 2004; Stephen & Lehman, 2009). Transmitting WOM can lead to potential social benefits though it can also involve some risks if the information is incorrect or in case of product failure (Stephen & Lehman, 2009). Advertising is usually perceived as having very low credibility (Flanagin & Metzger, 2000), while WOM is considered as very credible because it is based on the experiences of other consumers (Arndt, 1967; Smith, 1993). Thus, it is more likely that individuals refer WOM information about the new product when receiving information from other consumers than when exposed to advertising:

*H2: In a new product launch, a communication campaign that starts with e-WOM generates more WOM communication than a communication campaign that starts with advertising.*

Some consumers may show some kind of resistance toward an innovation (Bagozzi & Lee, 1999). When resistance is beaten, adoption process continues. Then consumers develop some interest, and hence decide to learn more about the product (De Bruyn & Lilien, 2008). At this point, some consumers may actively search more information about it. Information search is then an indicator of innovation advance once resistance is avoided. As e-WOM leads to more awareness than advertising, more consumers will know about the new product when this

introduction policy is used. Additionally, as e-WOM has also more impact than firm-generated communication (Bickart & Schindler, 2001; Trusov et al., 2009), it will be more likely that e-WOM provokes an active information search about the new product. Therefore, consumers exposed to e-WOM will show a higher level of interest in the new product in comparison to consumers who heard about the product through an advertising campaign. Thus, we propose:

*H3: In a new product launch, a communication campaign that starts with e-WOM generates more information search about the new product than a communication campaign that starts with advertising.*

Consumers tend to combine information from multiple sources, and interactions between these information sources are likely to occur (Collins & Stevens, 2002). An increase in information sources could lead to more trust (Chen et al., 2004), as well as to more impact on consumers (Bayus, 1985; Hogan et al., 2004). As a result of using several sources, multiple routes for retrieval information are formed in memory increasing the accessibility of the product, which, in turn, enhances its recall (Sjödín & Törn, 2006). Integration Theory (Anderson, 1981) provides support for this idea. According to this theory, information from different sources is combined when consumers form an overall evaluation on memory. As long as information is consistent with prior schema, consumers will integrate the new incoming message on memory and a positive effect on attitudes is more likely to show.

Since the combination of communication tools is more effective on consumers than the repetition to the same tool (Chang & Thorson, 2004; Edell & Keller, 1989), the firm should use at least another information source during the second stage of the adoption process. Literature has shown that earlier information is more diagnostic than later information (Herr et al., 1991) and may have a greater impact on final judgments than information showed later. In fact, people often overestimate the validity of prior impressions and interpret subsequent information in light of earlier evaluations (Herr et al., 1991). In addition, when consumers detect that the information is consistent with their prior knowledge, they have more confidence to believe the received information (Crocker, 1981; Alloy & Tabachnik, 1984) and are more likely to use it for subsequent purchase decisions (Peterson & Wilson, 1985; Zeithaml, 1988). Therefore, in term of new product success it will be better for firms to start the new product launch with e-WOM. Such strategy will help the firm to create a strong prior impression about the new product. E-WOM should be then followed by firm-generated communication in order to strengthen its impact and to achieve the benefits of synergies obtained from exposure to coordinated different sources (Chang & Thorson, 2004). This discussion leads us to propose the following hypothesis:



*H4: A communication strategy composed of e-WOM at awareness stage and advertising at adoption stage has a greater impact on product adoption than a communication strategy composed of advertising at awareness stage and e-WOM at adoption stage.*

### **3. METHODOLOGY**

#### **3.1. Design and subjects**

A between subjects experimental study was developed using real internet users in which communication strategy for launching a new product was manipulated. In one of the condition subjects were first exposed to e-WOM and then to an advert, while in the second condition the other was altered. The subjects were 171 university students randomly assigned to one of the two conditions.

#### **3.2. Product**

A new technological product was recommendable for the experiment because this type of product is characterized by short life cycle (Beard & Easingwood, 1996; Goldman, 1982), so firms involved in these categories launch new products very frequently. A real wrist watch mobile phone from LG was chosen for the study. It was selected because the product should have functions and attributes that the subjects could easily understand. In addition, mobiles are also very appealing to our target consumers. A pre-test developed among university students ensured the perceived novelty of the product. We used the real brand of the product in order to create a more realistic scenario.

#### **3.3. Procedure**

The experiment was developed in two sessions separated by two days. By following this procedure we can distinguish which strategy is more efficient at each stage of the diffusion process: new product awareness and new product adoption. Certain delay is also necessary to allow for memory decay and to avoid a ceiling effect for recognition memory (Heckler & Childers, 1992). Half of participants were exposed to the advert in the first session and e-WOM in the second (N=80), another half were exposed to e-WOM first and to the advert next (N=91). Differences in cell sizes are due to some individuals not coming back to the second session.

We created two web-stimuli for the experiment: the first stimulus included an advert of the new product and the second one e-WOM about the new wrist-watch phone. The first web-stimulus simulated a new about the next launching of several real new mobile phones. The stimulus included the advert for the target product. The second stimulus consisted of a forum which contained some comments from consumers about the same new mobile phones. One of those

comments was about the target product. We replicated the web design from a real technological site as recommended by Koernig (2003). These web-scenarios simulated a real Internet browsing, in order to ensure that measurement about product awareness was developed in a more realistic setting.

Before starting the first session, they were told that they should suppose they were searching information about new mobile phones on the Internet when they found that website. An image of the new product was displayed in each stimulus. Thus, regardless of the experimental condition, all individuals saw the product at the awareness stage. At the end of the second session students were thanked for participating and were given a gift.

### **3.4. Measurement**

Product awareness was assessed after the first session and product adoption during the second. Awareness was measured by asking participants the name of mobile phones that appeared on the webpage (spontaneous awareness). They had then to select the mobile phones that appeared from a list of mobile-phones (suggested awareness).

During the second session subjects filled it a new questionnaire. After they were exposed to the second stimulus, participants were asked if they had looked for information about the new LG, and if they had told other people about it through a yes/no question. In addition, if they talked about the target product, they were asked if they do it face-to-face, online or both. Then, participants were asked about their intention to adopt the new product. Following previous studies (such as Jamieson & Bass, 1989), we used a purchase intention scale (Zhang & Buda, 1999) for this purpose. We also measured brand and product attitudes using 5-point differential semantic scales (Bruner, 1998). These scales are composed of three items each.

Other variables were also measured in order to control for potential confounding effects. Product perceived novelty (Michaut et al., 2002) and product knowledge (Smith & Park, 1992) were measured with 4 items 5-point Likert scales each. In order to check whether individual differences could affect the results, we measured their level of innate innovativeness, their attitude towards e-WOM, their Internet experience and their previous participation in e-WOM. Consumer innate innovativeness and e-WOM attitude were measured with 5-point Likert scales. Consumer innate innovativeness scale (Im et al., 2003) was composed of 11 items, and e-WOM attitude scale consisted of 4 items (Park et al., 2007). Consumers' Internet experience was measured through the number of hours per week subjects used the Internet (Novak et al., 2000). Participation in e-WOM was assessed by asking how often they usually write reviews about products on the Internet (never/hardly ever/sometimes/usually/almost always). We also controlled consumers previous attitude toward LG to ensure it was not affecting the results

obtained. At the end of the questionnaire individuals provided some demographic information (sex and age).

#### 4. RESULTS

Z-test and chi-squared test were used to test the first three hypotheses. These tests are used to compare proportions between independent samples. Regarding spontaneous awareness, we have distinguished between individuals who only remember the product (wrist watch mobile phone) and individuals who remember both, the product and the brand (wrist watch mobile phone from LG). As shown in table 1, there are more individuals that remember the product ( $Z=16.080$ ,  $p<0.01$ ;  $\chi^2=101.356$ ,  $p<0.01$ ), and both product and brand ( $Z=9.723$ ,  $p<0.01$ ;  $\chi^2=111.014$ ,  $p<0.01$ ) when the communication strategy starts with e-WOM than when it starts with advertising. The result for suggested awareness is consistent with the results obtained for spontaneous awareness, as there are more individuals who remember the product when exposed to e-WOM in the first session than when exposed to advertisement ( $Z=11.806$ ,  $p<0.01$ ;  $\chi^2=80.449$ ,  $p<0.01$ ). Thus, H1 is supported.

Almost 60% of individuals exposed to e-WOM first told to other people about the target product. However, less than a fourth part of subjects exposed to the advert first told about the new product ( $Z=4.729$ ,  $p<0.01$ ;  $\chi^2=19.551$ ,  $p<0.01$ ). Therefore, communication campaigns initiated with e-WOM generate more interpersonal communication than those initiated with advertising as stated in H2. It is also interesting to note that most of this communication was face-to-face (90.6%), 7.5% was online, while 1,9% told about the new product both face-to-face and online. For individuals exposed first to the ad, conversations generated was face-to-face (100%).

Furthermore, 6.6% of individuals exposed to e-WOM during the first session sought information about the watch mobile phone, while only 2.5% of consumers who saw the advert first did it ( $Z=1.308$ ,  $p<0.10$ ;  $\chi^2=1.600$ ,  $p>0.10$ ). However, these differences are not significant and H3 can not be accepted.

Before testing H4, several analyses of covariance were conducted (ANCOVAs) to determine whether the results could be affected by any individual variable (level of innate innovativeness, Internet experience, initial attitude towards e-WOM, previous participation in e-WOM, previous attitude toward LG). ANCOVA tests revealed none of these individual characteristics had a significant effect, so an ANOVA test was undertaken to test H4.

As expected, individuals who were exposed to the communication campaign that starts with e-WOM showed a higher purchase intention than consumers who were exposed to the stimuli in the opposite order ( $X_{e\text{-WOM}+Ad} = 2.456$  vs.  $X_{Ad+e\text{-WOM}} = 2.156$ ,  $p < 0.05$ ). Therefore, H4 is supported.

**Table 1: Results**

<b>Spontaneous awareness (only product)</b>						
Communication strategy	N	Percent	Z-value	p-value	$\chi^2$	p-value
e-WOM+Ad	91	0.846	16.080	0.000	101.356	0.000
Ad+e-WOM	80	0.075				
<b>Spontaneous awareness (product and brand)</b>						
Communication strategy	N	Percent	Z-value	p-value	$\chi^2$	p-value
e-WOM+Ad	91	0.582	9.723	0.000	111.014	0.000
Ad+e-WOM	80	0.038				
<b>Suggested awareness</b>						
Communication strategy	N	Percent	Z-value	p-value	$\chi^2$	p-value
e-WOM+Ad	91	0.956	11.806	0.000	80.449	0.000
Ad+e-WOM	80	0.300				
<b>WOM about the new product</b>						
Communication strategy	N	Percent	Z-value	p-value	$\chi^2$	p-value
e-WOM+Ad	91	0.571	4.729	0.000	19.551	0.000
Ad+e-WOM	80	0.238				
<b>Information Searched</b>						
Communication strategy	N	Percent	Z-value	p-value	$\chi^2$	p-value
e-WOM+Ad	91	0.066	1.308	0.0951	1.600	0.185
Ad+e-WOM	80	0.025				

## 5. DISCUSSION

The study contributes to both communication and new product literature by showing to what extent diffusion is enhanced when e-WOM starts before commercial communication. It also determines which strategy is more appropriate at each stage of the diffusion process: awareness and product adoption. Theoretically very interesting is this awareness and product adoption distinction because, to the best of our knowledge, the impact of differential strategies on product launch success had not been established yet.

We have demonstrated that firms should start new product communication with e-WOM and then continue with advertising. This strategy generates higher consumer awareness and greater the intention of adopting the new product than starting with advertising. The importance of these results reside on the fact that they are against previous studies that had shown advertising was the best way to start new product launch (Manchanda et al. 2008; Narayanan et al., 2005; Rogers & Adhikarya, 1979; Van den Bulte & Lilien, 2001). The argument supporting these studies is that advertising is necessary for people in order to start talking about the new product (Hogan et al., 2004). However, nowadays firms can promote WOM communication. The internet provides numerous venues to share consumers' views, preferences or experiences with others (Trusov et al., 2009). This study is in line with the result of Delre et al. (2007a), who showed that a strong mass media campaign taking place at the beginning of the diffusion has negative effects on the diffusion. Consumers may decide too soon, in such a case, many decide not to adopt the product because not enough others have done so yet.

Furthermore, starting a communication strategy on new product launch with e-WOM generates more new product-related WOM. The higher the volume of WOM the faster consumers' adoption of the new product (Shen & Hahn, 2008). Previous research supports the worth of creating WOM. Volume of WOM impacts positively on product sales (Chevalier & Mayzlin, 2006; Dellarocas et al., 2007; Duan et al., 2008; Liu, 2006). For example, Dellarocas et al. (2007) have shown the early volume of WOM exhibits a strong correlation with the corresponding box office revenues. This communication strategy will speed up the adoption process. Adoption speed is very important for firms because adoption delay is a consumers' response that indicates product failure (O'Connor et al., 1990). Interestingly, we have also shown that most of the created conversations about the new product were face-to-face. This result is supported by the recent study of Toubia et al. (2009), who find that most social interactions still take place offline, although new marketing programs involve a strong online component. We also observed that some individuals exposed to e-WOM at the awareness stage searched information about the new product, although they were actually very few. This result could be explained because only two days had passed between the two sessions.

This study also contributes in the methodology proposed because very few experimental studies have been developed in new product diffusion, because it is very difficult to conduct controlled experiments in this field (Delre et al., 2007b). However, recent research have highlighted experimental design can help to learn about the effectiveness of different communication strategies in new product adoption (Iyengar et al., 2010). In addition, this methodology has also allowed us to measure awareness on time, which is usually hard to obtain as it is not an overt behaviour (Van den Bulte & Lilien, 2001). The two phases measurement solves the problem of

asking respondents for retrospective accounts, which does not produce reliable data because becoming aware of an innovation is hardly memorable (Snyder, 1991).

### **5.1. Managerial implications**

In terms of the managerial implications derived from this research, firms are strongly recommended to start new product communication campaign with e-WOM in order to create more conversations about the new product and take advantage of the greater impact of early WOM. A recent research concludes that the volume of e-WOM has a decreasing effect on new product sales over time (Cui et al., 2010). Firms should contact with bloggers, with their customers or with general consumers through social media, motivating them to spread the mouth. This communication should start before the product is available in the market and it could carry out in three ways. Companies could encourage consumers to participate in new product development asking them their opinion about, give them unique information about the new product or send a new product trial directly to opinion leaders encourage them to post about it. This strategy will generate awareness before the new product is launched, and it could speed up the adoption process. In summary, companies need to find ways which involve consumers and to generate hype around the product (Katona et al., 2009).

### **5.2. Limitations and future research**

Future research should address the limitations apparent in the current study. Very few days passed between the first and the second session, so subjects may have a little time to search information about the new product or to tell other people about it. Future research could further explore this result considering longer time delays. Additionally, in the current study we have only focused on one type of product, a technological product, so it will be interesting to replicate the study using a different product category, or even comparing between different types of products like search and experience products. Future research can also analyze how other communication tools work, such as promotions, interrelate with e-WOM in new product diffusion. Recent research has recommended the use of promotions such as new product trial, samples, in order to create WOM about the new product (Godes & Mayzlin, 2009; Song & Parry, 2009), therefore it would be very interesting to analyze how this communication tools interact with advertising and with e-WOM.

## 6. REFERENCES

- Alloy, L. B., & Tabachnik, N. (1984), "Assessment of Covariation by Humans and Animals: The Joint Influence of Prior Expectations and Current Situational Information", *Psychological Review*, 91, 112-149.
- Anderson, N. H. (1981). *Foundations of Information Integration Theory*. San Diego: Academic Press.
- Arndt, J. (1967), "Role of Product-Related Conversations in the Diffusion of a New Product", *Journal of Marketing Research*, 4, 291-295.
- Bagozzi, R. P., & Lee, K. H. (1999), "Consumer Resistance to, and Acceptance of, Innovations", *Advances in Consumer Research*, 26, 218-225.
- Bandiera, O., & Rasul, I. (2006), "Social networks and technology adoption in northern Mozambique", *Econom. J.* 116(514) 869-902.
- Bass, F. M. (1969), "A simultaneous equation regression study of advertising and sales of cigarettes", *Journal of Marketing Research*, 6, 291-300.
- Bayus, B.L. (1985), "Word-of-mouth: the indirect effects of marketing efforts", *Journal of Advertising*, 25, 31-9.
- Beard, C., & Easingwood, C. (1996), "New product launch: Marketing action and launch tactics for high-technology products", *Industrial Marketing Management*, 25, 87-103.
- Bell, D. R., & Song, S. (2007), "Neighborhood effects and trial on the Internet: Evidence from online grocery retailing", *Quant. Marketing Econom.* 5(4) 361-400.
- Bickart, B., & Schindler, R. M. (2001), "Internet forums as influential source of consumer information", *Journal of Interactive Marketing*, 15(3), 31-39.
- Brooks, R. C., Jr. (1957), "Word-of-mouth advertising in selling new products", *Journal of Marketing*, 22 (2), 154-161.
- Bruner, G. C. (1998), "Standardization and Justification: Do Ad Scales Measure Up?", *Journal of Current Issues and Research in Advertising*, 20 (1), 1-18.
- Burt, R. S. (1999), "The social capital of opinion leaders", *The ANNALS of the American Academy of Political and Social Science*, 566(1), 37-54.
- Buttle, F. A. (1998), "Word of mouth: understanding and managing referral marketing", *Journal of Strategic Marketing*, 6, 241-254.
- Chang, Y., & Thorson, E. (2004), "Television and web advertising synergies", *Journal of Advertising*, 33(2), 75-84.
- Chatterjee, P. (2001), "Online Reviews: Do Consumers Use Them?", *Advances in Consumer Research*, 28, 129-133.
- Chen, P. Y., Wu, S. Y., & Yoon, J. (2004), "The impact of online recommendations and consumer feedback on sales", *Proceedings of the International Conference on Information Systems, ICIS 2004*. 711-724.



- Chevalier J. & Mayzlin D. (2006), "The effect of word of mouth on sales: Online book reviews", *Journal of Marketing Research*, 43(3), 345.
- Coleman, J. S., Katz, E., & Menzel, H. (1966). *Medical Innovation: A Diffusion Study*. Indianapolis, IN: The Bobbs-Merrill Company.
- Collins, C. J., & Stevens, C. K. (2002), "The relationship between early recruitment related activities and the application decisions of new labor-market entrants: A brand equity approach to recruitment", *Journal of Applied Psychology*, 87, 1121-1133.
- Conley, T. G., & C. R. Udry, C. R. (2007), "Learning about a new technology: Pineapple in Ghana", *Working paper*, University of Chicago, Chicago. <http://www.econ.yale.edu/~cru2/pdf/conleyudry07rev.pdf>.
- Crocker, J. (1981), "Judgment of Covariation by Social Perceivers", *Psychological Bulletin*, 90, 272- 292.
- Cui, G., Lui, H. K., & Luo, X., (2010), "Online reviews as a driver of new product sales", *2010 International Conference on Management of e-Commerce and e-Government*.
- De Bruyn, A., & Lilien, G. L. (2008), "A multi-stage model of word-of-mouth influence of viral marketing", *International Journal of Research in Marketing*, 25(3), 151-163.
- Dellarocas, C. N., Awad, N.F., & Zhang, X. (2007), "Exploring the Value of Online Product Reviews in Forecasting Sales: The Case of Motion Pictures", *Journal of Interactive Marketing*, 21 (4), 23-45.
- Delre, S., Jager, W., Bijmolt, T. H. A., & Janssen, M. A. (2007a), "Targeting and timing promotional activities: An agent-based model for the take-off of new products", *Journal of Business Research*, 60(8), 826–835.
- Delre, S., Jager, W., Bijmolt, T. H. A., & Janssen, M. A. (2007b), "Will it Spread or Not? The Effects of Social Influences and Network Topology on Innovation Diffusion", *Journal of Product Innovation and Management*, In press.
- Dholakia, U. M., Bagozzi, R. P., & Pearo, L. K. (2004), "A Social Influence Model of Consumer Participation in Network- and Small-Group-Based Virtual Communities", *International Journal of Research in Marketing*, 21 (3), 241–63.
- Duan, W., Gu, B., & Whinston, A. (2008), "The Dynamics of Online Word-of-Mouth and Product Sales: An Empirical Investigation of the Movie Industry", *Journal of Retailing*, 84(2), 233-242.
- Eller, J. A., & Keller, K. L. (1989), "The information processing of coordinated media campaigns", *Journal of Marketing Research*, 32, 192-203.
- Flanagin, A. J., & Metzger, M. J. (2000), "Perceptions of Internet information credibility", *Journalism and Mass Communication Quarterly*, 77, 515–540.
- Godes, D., & Mayzlin, D. (2004), "Using online conversations to study word-of-mouth communication", *Marketing Science*, 23(4) 545–560.



- Godes, D., & Mayzlin, D. (2009), “**Firm-Created Word-of-Mouth Communication: Evidence from a Field Test**”, *Marketing Science*, 28(4), 721-739.
- Goldenberg, J., Libai, B., & Muller, E. (2001), “Talk of the network: A complex systems look at the underlying process of word-of-mouth”, *Marketing Letters*, 12, 209-221.
- Goldenberg, J., Libai, B., & Muller, E. (2002), “Riding the Saddle: How Cross-Market Communications Can Create a Major Slump in Sales”, *Journal of Marketing*, 66(April), 1-16.
- Goldman, A. (1982)**, “Short product life cycles: implications for the marketing activities of small high-technology companies”, *RandD Management*, 12(2), 81-90.
- Goldsmith, R. E., & Horowitz, D. (2006), “Measuring motivations for online opinion seeking”, *Journal of Interactive Advertising*, 6(2), available in [www.jiad.org](http://www.jiad.org).
- Heckler, S. E., & Childers, T. L. (1992), “The Role of Expectancy and Relevancy in Memory for Verbal and Visual Information: What Is Incongruity?”, *Journal of Consumer Research*, 18 (March), 475-492.
- Herr, P. M., Kardes, F. M., & Kim, J.(1991), “Effects of Word-of-Mouth and Attribute Information on Persuasion: an Accessibility-Diagnosticity Perspective”, *Journal of Consumer Research*, 173, 454-462.
- Hogan, J. E., Lemon, K. N., & Libia, B. (2004), “Quantifying the ripple: Word of mouth and advertising effectiveness”, *Journal of Advertising Research*, 44(3), 271-280.
- Im, S., Bayus B. L., & Mason C. H. (2003), “An Empirical Study of Innate Consumer Innovativeness, Personal Characteristics, and New-Product Adoption Behavior”, *Journal of the Academy of Marketing Science*, 31(1), 61-73.
- Iyengar, R., Van den Bulte, C., & Valente, T. W. (2010), “Opinion leadership and social contagion in new product diffusion”, *Marketing Science*, in press.
- Jamieson, L. F., & Bass, F. M. (1989), “Adjusting Stated Intention Measures to Predict Trial Purchase of New Products: A Comparison of Models and Methods”, *Journal of Marketing Research*, 26, 336–45.
- Katona, Z., Zubcsek, P. P., & Sarvary, M. (2009), “Network Effects and Personal Influences: Diffusion of an Online Social Network”, Working Paper, Haas School of Business.
- Katz, E., & Lazarsfeld, P.F. (1955). *Personal Influence*. Glencoe, IL: Free Press.
- Keller, E., & Berry, J. (2003). *The Influentials*, Free Press, New York, NY.
- Koernig, S. K. (2003), “E-Scapes: The Electronic Physical Environment and Service Tangibility”, *Psychology and Marketing*, 20 (2), 151-167.
- Kozinets, R. V., De Valck, K., Wojnicki, A. C., & Wilner, S. J. S. (2010), “Networked Narratives: Understanding Word-of-Mouth Marketing in Online Communities”, *Journal of Marketing*, 74 (2), 71-89.

- Lee, B., Salmon, C. T., & Paek, H. (2007), "The Effects of Information Sources on Consumer Reactions to Direct-to-Consumer (DTC) Prescription Drug Advertising: A Consumer Socialization Approach", *Journal of Advertising*, 36 (1), 107–119.
- Lee, J., Park, D. H., & Han, I. (2008), "The effect of negative online consumer reviews on product attitude: An information processing view", *Electronic Commerce Research and Applications*, 7(3), 341-352.
- Lee, Y., & O'Connor, G. C. (2003), "New Product Launch Strategy for Network Effects Products", *Journal of the Academy of Marketing Science*, 31 (3), 241–55.
- Libai, B., Bolton, R. N., Bügel, M. S., Ko de Ruyter, Götz, O., Risselada, H., & Stephen A. T. (2010), "Customer to Customer Interactions: Broadening the Scope of Word of Mouth Research", *Journal of Service Research*, 13 (3), 267-282.
- Liu, Y. (2006), "Word-of-mouth for movies: Its dynamics and impact on box office revenue", *Journal of Marketing*, 70, 74-89.
- Mahajan, V., Muller, E., & Bass, F. M. (1990), "New product diffusion models in marketing: A review and directions for research", *Journal of Marketing*, 54, 1-26.
- Manchanda, P., Xie, Y., & Youn, N. (2008), "The Role of Targeted Communication and Contagion in Product Adoption", *Marketing Science*, 27(6), 961-976.
- Michaut, A. M. K., Van Trijp, H. C. M., & Steenkamp, J. E. M. (2002), "Dimensions of product newness and their differential effect on market success", *31<sup>st</sup> EMAC Conference*, 28-31 May, Braga.
- Narayanan, S., Manchanda, P., & Chintagunta, P. K. (2005), "Temporal differences in the role of marketing Communications in new product categories", *Journal of Marketing Research*, 42, 278-290.
- Novak, T. P.; Hoffman, D. L., & Yung, Y. F. (2000), "Measuring the customer experience in online environments: a structural modeling approach", *Marketing Science*, 19(1), 22-42.
- O'Connor, E. J., Parson, C. K., Linden, R. C., & Herold, D. M. (1990), "Implementing new technology: Management issues and opportunities", *Journal of High Technology Management Research*, 1, 69-89.
- Park, D. H., Lee, J., Y Han, I. (2007), "The Effect of On-Line Consumer Reviews on Consumer Purchasing Intention: The Moderating Role of Involvement", *International Journal of Electronic Commerce*, 11(4), 125–148.
- Peay, M. Y., & Peay E. R. (1984), "Differences among Practitioners in Patterns of Preference for Information Sources in the Adoption of New Drugs", *Social Science in Medicine* 18, 1019-25.
- Pentina, I., Prybutok, V. R., & Zhang, X. (2008), "The role of virtual community as shopping reference group", *Journal of Electronic Commerce Research*, 9(2), 114-136.

- Peres, R., Mahajan, V., & Muller, E. (2010), "Innovation diffusion and new product growth models: a critical review and research directions", *International Journal Research in Marketing*, 27(2), 91-106.
- Peterson, R. A. & Wilson, R. W. (1985), *Perceived Risk and Price-Reliance Schema and Price Perceived-Quality Mediators*. in Perceived Quality, J.Jacoby and J.Olson, (eds). Lexington, MA: Lexington Books, 247-268.
- Prins, R., & Verhoef, P. C. (2007), "Marketing Communication Drivers of Adoption Timing of a New E-Service among Existing Customers", *Journal of Marketing*, 71(2), 169-183.
- Ram, S., & Sheth, J. N. (1989), "Consumer Resistance to Innovations: The Marketing Problem and its Solutions", *Journal of Consumer Marketing*, 6 (2), 5-14.
- Rogers, E. M. (1983). *Diffusion of Innovations*, 3<sup>rd</sup> edition, New York, Free Press.
- Rogers, E. M., & Adhikayra, R. (1979). *Diffusion of innovations: An up-to-date review and commentary*. In D. Nimmo (Ed.), *Communication yearbook 3*. New Brunswick, N.J.: Transaction Books, 67-81.
- Shen, W., & Hahn, J. (2008), "Impact of online word-of-mouth on the market for consumer goods – the interplay between adoption rate, product market life and market size", *in press*.
- Sjödin, H., & Törn, F. (2006), "When communication challenges brand associations: A framework for understanding consumer responses to brand image incongruity", *Journal of Consumer Behaviour*, 5, 32-42.
- Smith, D. C., & Park, C. W. (1992), "The Effects of Brand Extensions on Market Share and Advertising Efficiency", *Journal of Marketing Research*, 29, 296- 313.
- Smith, V. L. (1993), "When prior knowledge and law collide—Helping jurors use the law", *Law and Human Behavior*, 17, 507-536.
- Snyder, L. B. (1991), "Modeling Dynamic Communication Processes With Event History. Analysis", *Communication Research*, 18, 464-86.
- Song, M. & Parry, M. E. (2009), "Information, Promotion, and the Adoption of Innovative Consumer Durables", *Journal of Product Innovation and Management*, 26, 441-454.
- Spaulding, T. J. (2010), "How can virtual communities create value for business?", *Electronic Commerce Research and Applications*, 9 (1), 38-49.
- Stephen A. T., & Galak, J. (2009), "The complementary roles of traditional and social media in driving marketing performance", *Working paper*, INSEAD, France.
- Stephen, A. T., & Lehmann, D. R. (2009), "Why Do People Transmit Word-of-Mouth? The Effects of Recipient and Relationship Characteristics on Transmission Behaviors", *working paper*, Columbia University.
- Sultan, F., Farley, J. U., & Lehmann, D. R. (1990), "A Meta-Analysis of Applications of Diffusion Models", *Journal of Marketing Research*, 27, 70-77.

- Thompson, S., & Sinha, R. K. (2008), "Brand communities and new product adoption: The influence and limits of oppositional loyalty", *Journal of Marketing*, 72, 65-80.
- Toubia, O., Stephen, A. T., & Freud, A. (2009), "Viral Marketing: A large-scale field experiment", *Working paper*, INSEAD, France.
- Trusov, M., Bucklin, R. E., & Pauwels, K. (2009), "Effects of Word-of-Mouth versus Traditional Marketing: Findings from an Internet Social Networking Site", *Journal of Marketing*, 73, 90-102.
- Van den Bulte, C., & Lilien G. L. (2001), "Two-stage Partial Observability Models of Innovation Adoption", *Working Paper*, University of Pennsylvania.
- Villanueva, J., Yoo, S., & Hanssens, D. M. (2008), "The Impact of Marketing-Induced Versus Word-of-Mouth Customer Acquisition on Customer Equity Growth", *Journal of Marketing Research*, 45, 48-59.
- Weenig, M. W. H., & Midden, C. J. H. (1991), "Communication Network Influences on Information Diffusion and Persuasion", *Journal of Personality and Social Psychology*, 61, 734-742.
- Xu, Y., Zhang, C., Xue, L., & Yeo L. L. (2008), "Product Adoption in Online Social Network", *Twenty Ninth International Conference on Information Systems, Paris*.
- Zeithaml, V. A. (1988), "Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence", *Journal of Marketing*, 52, 2-22.
- Zhang, Y., & Buda, R. (1999), "Moderating Effects of Need for Cognition on Responses to Positively versus Negatively Framed Advertising Messages", *Journal of Advertising*, 28 (2), 1-15.
- Zhu, F., & Zhang, X. M. (2010), "Impact of Online Consumer Reviews on Sales: The Moderating Role of Product and Consumer Characteristics", *Journal of Marketing*, 74(2), 133.

**APPENDIX****Table 1: ANCOVA results**

Dependent variable: Purchase intention

	Variable	Mean Square	d.f.	F	p
Covariates	Innate innovativeness	0.055	1	0.063	0.802
	Internet experience	0.327	1	0.370	0.544
	Attitude towards e-WOM	0.021	1	0.024	0.877
	Attitude towards brand	0.052	1	0.059	0.809
	Passive participation in e-WOM	0.001	1	0.001	0.980
	Active participation in e-WOM	1,114	1	1.263	0.263
Factor	Communication strategy	4,519	1	5.123	0.025

**Table 2: ANOVA results**

Dependent variable: purchase intention

Communication strategy	N	Mean	F	p
e-WOM+Ad	91	2.456	4.410	0.037
Ad+e-WOM	80	2.156		