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# An exploratory study of product placement in social media

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## Abstract

**Purpose** – The purpose of this paper is to focus specifically on the examination of factors influencing the effectiveness of product placement in social media.

**Design/methodology/approach** – Two field experiments were used to test research models and questions. In each experiment, random sampling was used to assign volunteers into groups, controlled by different experimental settings. Questionnaires were distributed to the volunteers in order to collect their attitude toward advertisement, brand impression, and intention to click the advertisement. Their browsing behavior was measured by click through rate, browse depth, and browsing time.

**Findings** – The paper found that the effects of product placement conducts (product prominence and presentation) in social media are similar to the effects of product placement in other media. Also, a match between the vehicle and product would create deeper browsing depth and longer browsing time on the product web site. Product placement on a higher awareness vehicle would be more effective for marketing.

**Originality/value** – This study makes its contribution in understanding the effectiveness of product placement in social media on delivering a marketing message. The results further highlight the importance of “integrating” the product placement content with its context and its vehicle.

**Keywords** Social media, Product placement, Brand awareness, Placement presentation, Product prominence, Vehicle and product match

**Paper type** Research paper

## Introduction

Media has become more diverse and the number of media has increased in the last 20 years. Due to the growth of the available media, it has been harder and harder to deliver marketing messages to potential consumers. As a result, product placement has brought to marketers attention tremendously because of its efficacy. It is also an effective way to reach existing and potential customers (Mackay *et al.*, 2009). Product placement, also called embedded marketing, refers to the inclusion or reference of a product or a brand in a program. It is also defined as “the paid inclusion of branded products or brand identifiers, through audio and/or visual means, within mass media programming” (Karrh, 1998, p. 33). This marketing strategy has been applied to silent films since early twentieth century (Gunning, 1986). It next moved to the TV programs around 1950s and finally to the internet around 1990s (Villafranco and Zeltzer, 2006). It is found that placing a brand in a movie would influence people’s implicit memory and implicit choice behavior (Yang and Roskos-Ewoldsen, 2007). Besides the placement



to the traditional medium such as movie, TV, radio, DVR, video games, books, and magazines, the positioning of product image has extended to new medium such as the internet and mobile phones (Stephen and Coote, 2005).

Social media is referred as consumer-generated media. It describes “a variety of new and emerging sources of online information that are created, initiated, circulated and used by consumers intent on educating each other about products, brands, services, personalities and issues” (Nielsen BuzzMetrics, 2006). Social media has evolved to offer in a variety of formats which includes blogs, microblogging (e.g. Twitter), user-sponsored blogs/web sites (e.g. unofficial forums), company-sponsored blogs/web sites (e.g. official forums), collaborative web sites (e.g. Wikipedia), social networking sites (e.g. Facebook, MySpace), virtual social worlds (e.g. Second Life), virtual game worlds (e.g. online games), content sharing web sites (e.g. Youtube), etc. Due to the emergence of the social media, companies in different industries have started to use it as part of their marketing strategies to promote their brands, products, and services. Companies have also used social media to understand their existing and potential customers (Hafele, 2011). For their marketing conducts, Akar and Topçu (2011) specified the factors affecting consumers’ attitudes toward marketing on social media. Kaplan and Haenlein (2010) also suggested companies to choose the right formats of media carefully and ensure the alignment of messages delivered through these formats. Product placement on social media is considered one of the most important marketing strategies.

The effectiveness of delivering marketing messages would be influenced by product placement processes. Chang *et al.* (2009) provided a framework to illustrate the processes of product placement in the traditional entertainment media. However, marketers may have uncertainties about placing marketing messages on social media due to the relatively short history of practices and far less research findings. Unlike traditional media, social media such as blogs are written by unprofessional writers. If there is any “material connections” between the blog writers and advertisers, the writers must disclose their endorsement for those marketing campaigns by receiving payments or free products (Federal Trade Commission, 2009). Thus, the effectiveness of product placement in social media could be different. Although marketers has increasingly adopted social media for marketing purposes, little research has focussed on the evaluation of the effectiveness of delivering marketing messages over social media. This research attempts to answer the following research questions:

- RQ1. Does presentation style (prominent vs subtle) of a promotional message have an impact on the effectiveness of product placement in social media?
- RQ2. Does presentation format (in still image vs in video) of a promotional message have an impact on the effectiveness of product placement in social media?
- RQ3. Does the match between the engaging content and a promotional message influence the effectiveness of product placement in social media?
- RQ4. Does brand awareness of the engaging content influence the effectiveness of product placement in social media?

The rest of the paper is organized as follows. First, we discuss theoretical background of our research models and derive hypotheses. Next, we present the research methodology and data collection in Experiments section. We then provide validated results for the hypotheses. Finally, we discuss and conclude our findings and outline potential future research directions.

### Theoretical background and hypotheses

Most of product placement marketing activities within social media are based on a relatively simple format. In its simplest form, product placement in social media consists of a writer producing some engaging content (e.g. an article) incorporated with a promotional message (e.g. a picture that includes product information) in order to promote the product. For example, when talking about latte, a writer may position an image of Starbucks's promotion in the article on Facebook. In this case, the article is the engaging content used as a vehicle to deliver the promotional message of Starbucks Café.

In order to evaluate the effectiveness of product placement in social media, this study attempts to examine its factors in four ways. First, the presentation style of a promotional message is considered. The message could be noticeable or unnoticeable by a potential customer. Second, a promotional message in social media can be presented through a still image or a video. Third, the vehicle is to carry the promotional message. The match between the two could be crucial. Last, like hiring a celebrity for advertising, the brand awareness of the engaging content may influence the effectiveness of the product placement marketing. In this section, hypotheses related to the factors are developed and discussed.

In an effort to enhance the effectiveness of product placement, there is a paradox known to marketers about product placement: "If you notice it, it's bad. But if you don't notice, it's worthless" (Ephron, 2003, p. 20). Industry and various academic studies have showed the importance of product placement on movies or television shows (DeLorme *et al.*, 1994; DeLorme and Reid, 1999; d'Astous and Chartier, 2000). Prominent placement and subtle placement are two different techniques positioning branded information. Prominent placement is noticeable by displaying, using, or talking about a brand or a product, while subtle placement is harder to notice by showing the information in the background (Ferraro and Avery, 2000). Several brands can even share the background on the screen using subtle placement (Wilson and Till, 2011).

A prominent placement has a higher recall than a subtle placement (Law and Braun, 2000). Audience' attitude toward a noticeable placement was found to be lower than the attitude toward a subtle placement (van Reijmersdal *et al.*, 2009). Homer (2009) indicated that customers would experience greater brand impression increases when product placements were vivid and prominent, but when placements were subtle, consumers' attitudes toward the advertising were relatively positive. In addition, higher attitude would also increase the likelihood of intention, suggested by "Theory of planned behavior" (Ajzen, 1991). As a result, we hypothesize that:

- H1a.* A subtle placement in social media leads to a better advertising attitude than a prominent placement does.
- H1b.* A prominent placement in social media leads to a better brand impression than a subtle placement does.
- H1c.* A subtle placement in social media leads to higher user intention to click the advertisement than a prominent placement does.

The advent of social media has led to unprecedented delivery of multimedia content such as images and videos. Multimedia presentation enables viewers to develop complex cognitive skills (Spiro *et al.*, 1995). Previous studies indicated that videos may

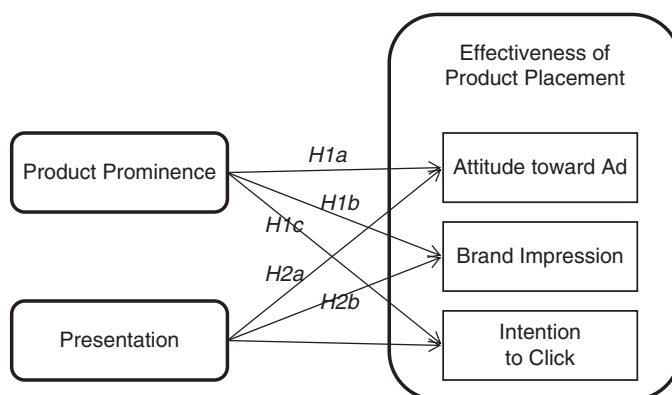
attract more attention from the audience than the still images (Vaughan, 1993; Nowak *et al.*, 1999). Therefore, we hypothesize that:

- H2a.* Product placement in social media presented through video can lead to a better advertising attitude than the placement presented through images.
- H2b.* Product placement in social media presented through video can lead to a better brand impression than the placement presented through still images.
- H2c.* Product placement in social media presented through video can lead to a better user intention to click than the placement presented through images.

The research model shown in Figure 1 is to test the two sets of abovementioned hypotheses. It represents the constructs of product prominence, presentation of the advertising, and effectiveness of product placement advertising. It is proposed in this model that different types of product prominence and different presentations of advertising are potential determinants to the effectiveness of product placement in social media. The effectiveness of product placement is operationalized by attitude toward product placement, brand impression, and intention to click the advertisement. To answer the first two research questions, this research model was empirically tested by experiment 1 discussed later.

Product placement in social media consists of a writer producing some engaging content incorporated with a promotional message in order to promote the product. The engaging content that is provided by the social media (e.g. a blog run by a famous blogger) is a vehicle for product placement marketing. The target customers or audiences, by reading or watching the vehicle, will notice the promotional message. Through the linkage (usually a hyperlink) on the vehicle, the customers will be led to the target site for more marketing information. It was found that the usefulness of blogger's recommendations significantly influenced consumers' shopping behavior (Hsu *et al.*, 2013).

The third research question is to investigate the effectiveness of product placement in social media based on the match between the promotional message and its engaging content (vehicle). In general, success of the product placement is dependent on the success of the vehicle and the match between the message and its vehicle. van Reijmersdal *et al.* (2010) found that products placed in engaging contents with a higher perceived informational value will be recognized more often. These products will more likely result in customers' reactions.



**Figure 1.**  
The research model  
for experiment 1

In social media, potential consumers tend to follow what they trust to be related when reading articles. Therefore, the relevance between the article (engaging content) and the promotional message is crucial. The promotional message can be included in various engaging formats such as storytelling, articles, images, and video (Falkow, 2010). When the match between the promotional message and the article is high, the reader tends to follow the promotional message, normally presented as a hyperlink, and spend more time to understand the product of interest. As a result, we hypothesize that:

- H3a.* Product attributes that match vehicle attributes can produce a higher click through rate.
- H3b.* Product attributes that match vehicle attributes can produce deeper browsing depth on the product web site.
- H3c.* Product attributes that match vehicle attributes can produce longer browsing times on the product web site.

The vehicle plays an important role in the effectiveness of product placement marketing (Broniarczyk and Alba, 1994). For example, it is a popular advertising technique in many countries to invite celebrities to promote products. It was found that celebrities were more attractive and brought more attention than non-celebrities to the products (Menon *et al.*, 2001). Prior studies also showed the importance of the customer awareness to the vehicle (e.g. Hoyer and Brown, 1990; Aaker, 1991). Voorveld *et al.* (2009) concluded that the actual interactivity of a web site and the number of functionalities used on the web site were important factors influencing consumers' attitude toward a web brand.

It is suggested to conduct product placement through high customer awareness vehicles. In social media and other internet media, usually customers' reaction is measured when the advertisement is clicked. The marketing message associated with a high level brand awareness vehicle is expected to receive more clicks from the viewers. Also, those viewers that have clicked may spend more time to read the marketing information. Therefore, we propose the following hypotheses to answer our research question:

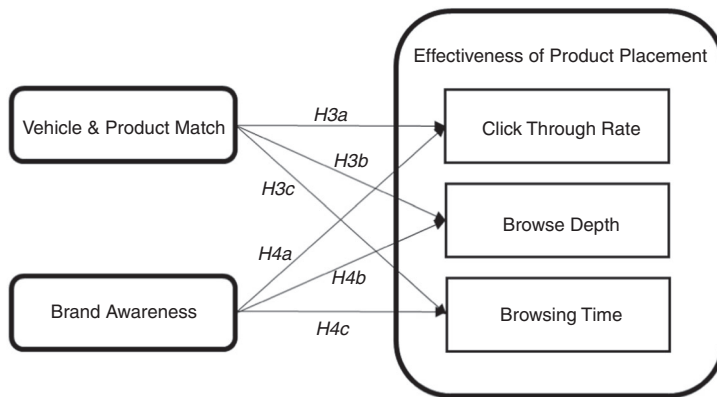
- H4a.* Product presented on a high brand awareness vehicle produces a higher click through rate.
- H4b.* Product presented on a high brand awareness vehicle produces deeper browsing depth of the product's web site.
- H4c.* Product presented on a high brand awareness vehicle creates more browsing time of the product's web site.

In answering the last two research questions, the second research model in Figure 2 is to test the two sets of hypotheses regarding two factors influencing the effectiveness of product placement in social media. The two factors are the match between promotional message and vehicle, and customer awareness of the vehicle. The effectiveness of produce placement in social media is operationalized by click through rate to marketer's web site, the depth browsing product's web site, and the time spent on product's web site. The research model was empirically tested by experiment 2 discussed in the experiment section.

## Experiments and results

### *Experiment 1*

*Experimental platform.* We used a field experiment to empirically test the proposed hypotheses in first research model. The social media platform was set to SogiKing web



**Figure 2.**  
The research model  
for experiment 2

site ([www.sogi.com.tw](http://www.sogi.com.tw)). The word “SoGi” means cell phone in Mandarin. The SogiKing web site is one of the most popular community web sites in Taiwan. People visit the web site to read articles about cell phones and share experience using cell phones. The SogiKing web site has more than a half million registered users.

*Participants.* We recruited 400 users volunteered to participate in the study. From the 400 survey questionnaires we distributed, 242 usable responses were returned, resulting in a response rate of 60.5 percent. Among the 242 usable responses, 136 were females (56 percent) and 106 were males (44 percent). Most of the participants were students (61 percent) and the age of most participants ranged from 21 to 25 (61 percent).

*Procedure.* Random sampling was used to assign participants into four groups as shown in Table I. Participants in each group were asked to access five articles pertaining to test reports of newly released cell phones on the SogiKing web site with different product placement settings. All articles were written by two content providers who had frequently written reports about newly released cell phones on SogiKing. Following the settings controlled by previous studies, prominence was operationalized as the size of the product and its logo, centrality in the image or video and its duration in the video (e.g. Matthesa *et al.*, 2012). The image and video we used were also provided by SogiKing. The images were 640 by 480 pixels in JPEG format. The videos are 15 second long and were uploaded on the YouTube. After browsing these web pages, the participants were asked to complete a survey indicating their advertising attitude, brand impression, and intention to click the advertisement.

*Measures.* In order to measure brand impression, we developed four multiple choice questions to ask participants to recall their brand impression on each of the five articles. Based on their memory, participants were asked to select correct answers from four options about “the kind of product,” “the name of the brand,” “the main characteristic of the product,” and “the name of the product.” For each question,

	Prominent-placement	Subtle-placement
Video presentation	Group 1 (53)	Group 2 (63)
Image presentation	Group 3 (62)	Group 4 (64)

**Note:** *n*, number of participants

**Table I.**  
Experimental  
settings in the  
experiment 1

participants who had the right answer received one point. Those who had the wrong answer received zero points. The instrument for advertising attitude included a combination of items derived from Garretson and Niedrich (2004), Chang (2004), and Martin *et al.* (2003). Attitude toward advertising was to measure the recipients' reactions to our marketing message. Sample items included "I feel I have the necessary product information from the report" and "This report provides good reference for me to make purchase decision." Additionally, the participants' intention to click was measured with a single item "What are the chances that you will click on the hyperlink?" (Gauzente, 2010).

*Results.* The reliability and validity of the instruments were evaluated. The sample showed a reasonable level of reliability (see Table II) which was suggested to be  $> 0.70$  (Cronbach, 1970). Factor analysis also confirmed that the construct validity of the scales could be carried out adequately. Using the principal component method with varimax rotation, construct validity was examined. The factor loadings for all items exceeded 0.6 and indicated that the individual items also had discriminant validity (Table III).

The Pearson correlation coefficients for all variables investigated were found to be significant at the 0.01 level. Brand impression was negatively related to attitude toward advertising and intention to click. Attitude toward advertising was found positively correlated to intention to click the advertisement.

Data associated with brand impression, advertising attitude, and intention to click the advertisement was analyzed by a MANOVA test using Wilk's  $\lambda$ . Both product prominence and presentation of the advertising significantly influenced on their effectiveness of product placement advertising in general at the 0.01 level. Specifically, product prominence and presentation of the advertising significantly affect brand impression, advertising attitude, and intention to click (Table IV). Product placement prominence and presentation of the advertising had an interaction effect on advertising attitude. When using prominent placement, both video and image presentation lead to similar advertising attitude. But when using subtle placement, video presentation lead to higher advertising attitude compare to image presentation.

Construct	Item	Mean	SD	Reliability Cronbach's $\alpha$
Brand impression	BI_1	4.11	0.827	n/a <sup>a</sup>
	BI_2	3.31	2.555	
	BI_3	0.49	0.815	
	BI_4	3.70	0.708	
Attitude toward ad	AA_1	3.57	0.636	0.893
	AA_2	3.55	0.788	
	AI_1	3.54	0.880	
	AI_2	3.33	0.928	
	AN_1	3.00	0.934	
	AN_2	2.95	0.861	
	AN_3	3.05	0.972	
	AC_1	3.53	0.789	
	AC_2	3.66	0.856	
	AC_3	3.76	0.654	
Intention to click	UI_1	3.79	0.895	n/a <sup>b</sup>

**Table II.**

Summary statistics and scale reliabilities for constructs

**Notes:** <sup>a</sup>The Cronbach  $\alpha$  cannot be computed for brand impression due to the fact that each item is used to measure different aspect of brand recall; <sup>b</sup>the Cronbach  $\alpha$  cannot be computed for intention to click due to the single item construct



**Table III.**  
Factor loadings for  
measures of  
constructs

Construct	Item	Brand impression	Attitude toward ad	Intention to click
Brand impression	BI_1	0.663	-0.412	-0.054
	BI_2	0.714	-0.453	-0.353
	BI_3	0.886	-0.257	0.310
	BI_4	0.623	0.571	-0.282
Attitude toward ad	AA_1	0.210	0.671	0.195
	AA_2	0.042	0.672	0.131
	AI_1	-0.223	0.602	0.100
	AI_2	-0.045	0.712	0.082
	AN_1	0.026	0.742	-0.084
	AN_2	0.115	0.722	-0.079
	AN_3	0.224	0.755	-0.015
	AC_1	-0.029	0.673	-0.096
	AC_2	0.207	0.713	-0.017
Intention to click	AC_3	0.230	0.773	-0.044
	UI_1	-0.196	0.123	0.744

Independent variable	Dependent variable	<i>F</i>	<i>p</i> -value
Product prominence	Brand impression	295.132	0.000***
	Advertising attitude	507.331	0.000***
	Intention to click	282.915	0.000***
Presentation of advertising	Brand impression	13.852	0.000***
	Advertising attitude	62.650	0.000***
	Intention to click	50.542	0.000***
Product prominence × presentation of advertising	Brand impression	0.737	0.391
	Advertising attitude	58.607	0.000***
	Intention to click	4.953	0.127

**Table IV.**  
The effect of product  
prominence and  
presentation of  
advertising on the  
effectiveness of  
product placement  
advertising**Note:** \*\*\* $p < 0.01$ 

The hypotheses in *H1* are to examine the influence to the effectiveness of product placement due to product prominence. On *H1a*, we hypothesized that a subtle placement in social media leads to a better advertising attitude than a prominent placement does. According to our results listed in Table V, there was a significant difference (at 0.01 level) between prominent placement and subtle placement on advertising attitude. The average difference between the two was -3.953, indicating that a subtle placement does have a better advertising attitude than a prominent placement. We hypothesized that a prominent placement in social media leads to a better brand impression than a subtle placement does on *H1b*. Significant difference between prominent placement and subtle placement was identified at 0.01 level in influencing brand impression. It gave us a difference of 3.430 between the two, indicating that a prominent placement did have a better brand impression than a subtle placement. Regarding *H1c*, we hypothesized that a subtle placement in social media leads to higher user intention to click the advertisement than a prominent placement does. When evaluating the influence to the intention to click the advertisement, our experimental results showed a significant difference (at 0.01 level) between prominent placements and subtle placement with the average difference

of  $-1.317$ , indicating that a subtle placement did have a higher users' intention to click than a prominent placement.

We proposed a set of hypotheses in *H2* to figure out the influence to the effectiveness of product placement because of the presentation of advertisement. On *H2a*, we hypothesized that product placement in social media presented through video can lead to a better advertising attitude than the placement presented through images. Based on our results listed in Table VI, we found significant difference at 0.01 level between video presentation and image presentation in affecting advertising attitude. The average difference between the two is 1.389, indicating that a video presentation does have a better advertising attitude than an image presentation. We also hypothesized that, on *H2b*, product placement in social media presented through video can lead to a better brand impression than the placement presented through still images. When we examined the influence to brand impression, a significant difference between video and image presentations was found at 0.01 level. The average difference of 0.743 between the two indicated that a video presentation had a better brand impression than an image presentation. In addition, on *H2c*, we hypothesized that product placement in social media presented through video can lead to a better user intention to click than the placement presented through images. According to our findings, the impact to the intention to click the advertisement was significantly different between video and image presentations (at 0.01 level). The average difference between video presentation and image presentation was 0.557, indicating that a video presentation did lead to a higher users' intention to click than an image presentation.

All hypotheses in *H1* and *H2* were examined and supported. Subtle placements had a higher level of advertising attitude and intention to click than prominent placements, but prominent placements led to a higher brand impression than subtle placements. Video presentations led to a higher level of advertising attitude, brand impression, and intention to click than image presentations.

*Discussions.* The primary goal of experiment 1 was to investigate two potential factors that may influence the effectiveness of product placement in social media. The factors examined were product prominence (subtle or prominent) and presentation of advertising (video or image). Our results showed that product prominence and

**Table V.**  
Average difference  
in advertising  
effectiveness with  
different product  
prominence

Dependent variable	Average difference (I-J)	SE	<i>p</i> -value
Advertising attitude	-3.953	0.175	0.000***
Brand impression	3.430	0.200	0.000***
Intention to click	-1.317	0.078	0.000***

**Notes:** I, prominent placement; J, subtle placement. \*\*\* $p < 0.01$

**Table VI.**  
Average difference  
in advertising  
effectiveness with  
different  
presentation of  
advertising

Dependent variable	Average difference (I-J)	SE	<i>p</i> -value
Advertising attitude	1.389	0.175	0.000***
Brand impression	0.743	0.200	0.000***
Intention to click	0.557	0.078	0.000***

**Notes:** I, video presentation; J, image presentation. \*\*\* $p < 0.01$

presentation of advertising both significantly affected the effectiveness of product placement advertising on social media. Moreover, advertising through video with subtle placements (Group 2) can have the greatest impact on advertising attitude and users' intention to click. However, to get a better brand impression, marketers need to present the advertising through video with prominent placements (Group 1). Since all hypotheses were supported and our findings indicated a consistency with previous evidences, we then concluded that the effects of product placement, influenced by product prominence and presentation, in social media are similar to the effect of product placement in other media.

### *Experiment 2*

*Experimental platform.* The experiment 2 was designed to examine the influence of vehicle and product match and brand awareness to the effectiveness of product placement in social media. In order to test the hypotheses in the second research model, we set the social media platform to Sogiking web site.

*Participants.* The participants were recruited from the Sogiking web site through a message banner posted during a four-day period. There were 2,808 hits during the experimental period. That is, 2,808 visitors clicked on the banner.

*Procedure.* Random sampling was used to assign these visitors into one of the four types of article groups, categorized by two levels of vehicle attributes and two levels of brand awareness. All of the articles were written by famous bloggers introducing their experience with a certain model of cell phone. In these articles, a messenger bag from Promax was mentioned and the image of the bag was displayed. The visitors who were interested in the messenger bag could click the image and follow the hyperlink to Promax's web page that introduces the messenger bag. A total of 219 visitors clicked the messenger bag image and reached the Promax web site.

In this experiment, the articles on the Sogiking are the vehicle for product placement marketing in social media. Articles were first categorized by its vehicle attributes: convenience function and psychological satisfaction. Articles addressing the convenience function attribute emphasized the functions of the cell phone. For example, a convenience function focussed article may include "the cell phone equips a 13-megapixel rear camera with Full HD 1080p." On the other hand, articles focussing on the psychological satisfaction attribute emphasized the fulfillment of psychological needs using the cell phone. The statement like "Redefine your style and get ready to experience a new transformation" shows one of the examples in the psychological satisfaction oriented articles. The promotional image was a picture of a messenger bag from Promax Company. The company markets this bag by emphasizing its convenience. Therefore, when this image was placed within an article focussing on the convenience function attribute, there was a match between the product and vehicle. When it was placed within an article that focussed on the psychological satisfaction attribute, there was not a match between the product and vehicle.

These articles were further categorized into two categories based on the brand awareness of the product mentioned. According to the suggestions provided by experts in the Sogiking company, the articles introducing a cell phone from Sony were classified as high brand awareness group and articles introducing a cell phone from Utec were classified as low brand awareness group. Therefore, a 2×2 experiment was conducted to examine the proposed hypotheses. The number of visits in each group is included in Table VII.

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*Results.* Click through rate indicates the number of visitors who had clicked the hyperlink to Promax's web site divided by the total number of visits in the group. Browse depth points out the level of users' page views on Promax's web site. Additionally, browsing time demonstrates the amount of time the visitor stay in the Promax's web site. The average click through rate, browse depth, and browsing time of each group are reported in Table VIII.

According to the results listed in Table IX, when vehicle was convenient function oriented (match), high brand awareness could generate deeper browsing depth and longer browsing time than low brand awareness did. When vehicle focussed on psychological satisfaction (un-match), high brand awareness could create higher click through rates, deeper browsing depth, and longer browsing time on Promax's web site than low brand awareness did.

Data associated with click through rate, browsing depth, and browsing time was analyzed using a MANOVA test, with the independent variables – vehicle attributes and brand awareness – associated with three dependent variables – click

**Table VII.**  
Experimental design  
in the experiment 2

Vehicle attributes	Brand awareness	Number of visit to articles	Number of visit to Promax web site
Convenience function attribute	High	688	58
	Low	645	59
Psychological satisfaction attribute	High	558	45
	Low	917	57
Total number of visit		2,808	219

**Table VIII.**  
The average click  
through rate,  
browsing depth, and  
browsing time of  
each group

Vehicle attributes	Brand awareness	Advertising effectiveness		
		Click through rate (%)	Browse depth	Browsing time
Convenience function attribute (match)	High	8.42	5.67	0:07:03
	Low	9.15	2.26	0:04:47
Psychological satisfaction attribute (un-match)	High	8.06	4.07	0:04:52
	Low	6.22	1.46	0:00:46

**Table IX.**  
The impact of  
vehicle attributes  
and brand  
awareness on  
advertising  
effectiveness

Independent variable	Dependent variable	F	p-value
Vehicle attributes	Click through rate	0.303	0.583
	Browse depth	5.761	0.018**
	Browsing time	11.256	0.001***
Brand awareness	Click through rate	0.012	0.912
	Browse depth	36.290	0.000***
	Browsing time	11.912	0.001***
Vehicle attributes × brand awareness	Click through rate	0.589	0.444
	Browse depth	0.647	0.423
	Browsing time	0.964	0.328

**Notes:** \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$

through rate, browse depth, and browsing time. Both the effects of vehicle attributes and brand awareness had significant differences in browsing depth and browsing time. Also, vehicle attributes and brand awareness had no interactive impact on click through rate, browsing depth, and browsing time (Table IX).

The participants that read the report matching with the product had deeper browsing depth and longer browsing time, as shown in Table X. Therefore, *H3b* (at 0.05 level) and *H3c* (at 0.01 level) were supported. The participants that viewed the product report with high brand awareness vehicle had deeper browsing depth and spent longer time on product web site than those in low brand awareness group (Table XI). Therefore, *H4b* and *H4c* were supported (at 0.01 level). There was no significant difference on the click through rate in either match vs un-match setting or high brand awareness vs low brand awareness setting. Therefore, *H3a* and *H4a* were not supported.

*Discussions.* The second experiment was designed to answer the third and fourth research questions in this study. The third research question is to determine whether better outcomes would be achieved when marketers choose a vehicle matched with the advertisement. Our findings indicated that a match between the vehicle and product advertisement would produce deeper browsing depth and longer browsing time on the product web site, compared to the un-match group. However, there was no significant difference between the match group and un-match group in the click through rate. In order to answer the fourth research question, we placed the marketing message on the vehicles with higher or lower brand awareness. Our findings indicated that product placement on higher brand awareness vehicles had better results. In reference to browsing depth and browsing time on Promax's web site, the high brand awareness group outperformed the low brand awareness group. However, there was no significant difference between the two groups in terms of click through rate. We also found that vehicle attributes and brand awareness had no interaction effect on click through rate, browsing depth, and browsing time.

Dependent variable	Average difference (I-J)	SE	<i>p</i> -value
Click through rate	0.005	0.008	0.583
Browse depth	1.201	0.500	0.018**
Browsing time	185.739	55.386	0.001***

**Notes:** I, convenience function attribute; J, psychological satisfaction attribute. \*\*\* $p < 0.01$

**Table X.**  
Average difference in advertising effectiveness with different vehicle attributes

Dependent variable	Average difference (I-J)	SE	<i>p</i> -value
Click through rate	-0.001	0.008	0.912
Browse depth	3.014	0.500	0.000***
Browsing time	191.080	55.363	0.001***

**Notes:** I, high brand awareness; J, low brand awareness. \*\*\* $p < 0.01$

**Table XI.**  
Average difference in advertising effectiveness with different brand awareness

According to our findings, advertising through product placement in social media can be more effective when the advertising product is matched with the vehicle. Moreover, in order to get better result, the internet marketers need to choose the vehicle with greater brand awareness.

### Conclusions and future research

312 Product placement in social media has become an increasingly popular way of reaching potential customers who are able to zap past commercials on traditional media. To reach these retreating audiences, internet marketers have to use product placements in more clever and effective ways. While several past experimental studies (e.g. Homer, 2009) reported that product placement has little impact on brand attitudes, many practitioners maintain that placement can produce “home runs,” especially when certain guidelines are met.

In the first experiment, we found that advertising through video with subtle placements can produce better results on advertising attitude and users’ intention to click. However, to get a better brand impression, it is suggested to present the advertising through video with prominent placements. We also found that the effects of product placement conducts (product prominence and presentation) in social media are similar to the effect of product placement in other media.

In the second experiment, our findings indicated that a match between the vehicle and product would create deeper browsing depth and longer browsing time on the product web site (Promax’s web site). However, there was no significant difference between the match group and un-match group on the click through rate. Our experimental results also suggested that product placement on a higher brand awareness vehicle would have better results. In reference to browsing depth and browsing time on the product web site, the high brand awareness group outperformed the low brand awareness group. Similarly, there was no significant difference between the two groups on the click through rate.

As a result, advertising through product placements in social media would provide better results when the product attribute is matched with the vehicle attribute. It is also suggested to choose the vehicle with greater brand awareness.

Our study provides further evidence that the impact of product placement is not a simple phenomenon, but rather that effects are qualified by many moderating factors. Although the evidence provided here may be limited by the scope of our experiments, we believe that it further highlights the importance of “integrating” one’s advertising with the context and the vehicle, which is frequently noted by both academics and industry experts but ignored by many internet marketers. However, different products on different platform in different countries may generate different results. It would be interesting to test the research model in different settings and compare the results with the findings from conventional media. Moreover, it is obvious that there are other factors influencing the effectiveness of product placement on social media. It is believed that more investigations need to be done. For example, interactivity is one of the most important features that tell the difference between the social media and the traditional ones. In this study, we have investigated conducts such as product prominence, presentation, match between vehicle and product, and brand awareness. Future studies may focus on how viewers will respond to the product placement messages presented in different contexts and formats and what kind of interactivity may happen after the marketing conducts. In addition, it was found that gender affected its beliefs, attitudes, and behavior on web advertising (Wolin and Korgaonkar, 2003). It is worth to examine the gender effect on the product placement in social media.

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