An Intelligent Embedded Marketing Service System Based on TV Apps: Design and Implementation through Product Placement in Idol Dramas

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Introduction

- Product placement is everywhere
- Over-familiarity with the product placement marketing strategy may limit its advertising effectiveness. (Homer, 2009).
The Purpose of Study

- The current research examines whether an increase in the completeness and diversity of the messages as well as the richness of the media facilitates the development of positive attitude based on Media Richness Theory.
Introduction

- Intelligent Embedded Marketing Service System (IEMSS).

- The IEMSS combines TV apps (e.g., Yahoo TV Widgets or Android apps), multiple agents, semantic analysis and multi-document summarization technologies.
Research Questions

- whether providing descriptions and online reviews of products embedded in idol dramas using the IEMSS functions could improve consumers’ perceptions of products, attitudes toward product placement and purchase intentions?
Product Placement

- Definition of product placement
  - “the purposeful incorporation of a brand into an entertainment vehicle” (Russell & Belch, 2005: 74).
Gupta and Lord (1998) divided product placement strategies into three categories:

1. **Visual only**, showing products, brands, or logos in the background of television programs or movies but not verbally referencing product messages or including relevant audio.

2. **Audio only**, in which characters verbally reference brand names or describe relevant brand information.

3. **Combined audio-visual**, which verbally references brand names or product information while brand images appear on-screen.
Media Richness Theory

- proposed by Daft and Lengel in 1984.

- used to rank and evaluate the richness of certain communication mediums
Hypothesis 1

When brands or product information are presented to audiences through program plotlines, they directly stimulate and accelerate cognitive information processing and influence brand salience because audience members assess the efficacy of the advertising (Hong et al. 2008).
Hypothesis 1

- *H1*: When audiences watch idol dramas, product placement with *product descriptions*, compared to placement without *product descriptions*, will produce superior brand and advertising attitudes as well as stronger purchase intentions.
Hypothesis 2

- The results of Hong et al.’s (2008) research show that demonstrative product placement is more effective than non-demonstrative product placement.

- Rungpaka et al. (2005) found that product placement was more effective when the product’s benefits and features were demonstrated through movie or television plotlines.

- Simon and Peppas (2004) found that compared to media-poor Web sites, media-rich Web sites generated higher levels of satisfaction and positive attitudes in test participants, indicating that greater completeness in messages and richer media provide positive benefits.
Hypothesis 2

*H2*: When audiences view television idol dramas, product placement presented with online reviews generate superior product and advertising attitudes as well as stronger intentions to purchase compared to placements that are not paired with online reviews.
Hypothesis 3

H3: When audiences view television idol dramas, product placement shown with product descriptions and online reviews generate superior brand and advertising attitudes as well as stronger intentions to purchase compared to placement without product descriptions and online reviews.
Main Experiment

- A 2 X 2 X 2 between-subjects experimental design
  - product description messages: shown versus not shown
  - online reviews: shown versus not shown

- 98 participants
Selection of experimental video

- This study selected *To the Beautiful You*, a 2006 Taiwanese idol drama, for use as the experimental video.

- Selection of experimental video clips:
  - product messages were communicated through the dialogue
  - product’s exterior could be identified in the visual images.
Beverages are a low-involvement type of product (Lockshin et al. 2001).

The stimulus of the experiment: DemiSoda Lemon Drink, a beverage embedded in the plot

One sample t-test: the participants’ responses regarding brand awareness (M = 2.89, SD = 0.90) differed significantly from the neutral value of 4, t(14) = -4.76, p < .001.
Independent variables

Product description messages

- Product description messages appeared at the **top** of the television screen, similar to a news ticker, during the product placement.

- The product message was “This product uses high-quality lemons – the sweet and sour taste and the bubbles provide you with an unbeatably refreshing sensation.”
Methods of presenting IEMSS in television idol dramas

Only product description messages appear
Independent variables

- Online reviews

- Online reviews appeared at the *bottom* of the television screen, similar to a news ticker, during the product placement.

- The content consisted of online reviews of the DemiSoda Lemon Drink.

- Appropriate reviews were extracted using the IEMSS program.
Methods of presenting IEMSS in television idol dramas

- Only online product reviews appear
Methods of presenting IEMSS in television idol dramas

Product messages and online product reviews appear simultaneously
# Manipulation Check

<table>
<thead>
<tr>
<th>Levene’s test of equal variance</th>
<th>$F$-test</th>
<th>Significance</th>
<th>$t$</th>
<th>Degrees of freedom</th>
<th>Significance (two-tailed)</th>
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</thead>
<tbody>
<tr>
<td><strong>Product description message</strong></td>
<td>.007</td>
<td>.936</td>
<td>-3.11</td>
<td>95</td>
<td>.002</td>
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<tr>
<td><strong>Online product review</strong></td>
<td>2.474</td>
<td>.119</td>
<td>-1.99</td>
<td>95</td>
<td>.048</td>
</tr>
</tbody>
</table>

**TABLE 1**: Manipulation test for the presence/non-presence of product description messages and the presence/non-presence of online reviews
Dependent Variables

- Brand Attitude
- Attitude toward product placement
- Purchase Intention
Research Results

- 2 (product description messages: shown versus not shown) x 2 (online reviews: shown versus not shown) multivariate analysis of variance (MANOVA)
## Research Results

<table>
<thead>
<tr>
<th>Source</th>
<th>$Df$</th>
<th>$F$</th>
<th>partial $\eta^2$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product description message (A)</td>
<td>3</td>
<td>2.73</td>
<td>0.08</td>
<td>0.04</td>
</tr>
<tr>
<td>Online product reviews (B)</td>
<td>3</td>
<td>4.31</td>
<td>0.12</td>
<td>0.01</td>
</tr>
<tr>
<td><strong>Interaction effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A x B</td>
<td>3</td>
<td>0.40</td>
<td>0.13</td>
<td>0.75</td>
</tr>
<tr>
<td>Error</td>
<td>92</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 2:** Multivariate analysis of main and interaction effects
## Research Results

### Table 3: ANOVA analysis of main and interaction effects

* = $p < .05$, ** = $p < .01$, and *** = $p < .001$

<table>
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<th>Attitudes toward product placement</th>
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</tr>
<tr>
<td>Product description message</td>
<td>1</td>
<td>1.59</td>
<td>4.39*</td>
<td>4.48*</td>
</tr>
<tr>
<td>Online product reviews</td>
<td>1</td>
<td>7.54**</td>
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<td></td>
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Results: Test of H1

Figure 1: Main effect product description messages on attitude toward product placement
Results: Test of H1

Figure 2: Main effect product description messages on purchase intention
Research Results

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Table 3: ANOVA analysis of main and interaction effects
* = p < .05, ** = p < .01, and *** = p < .001
Research Results

- no significant influence on brand attitude

- A possible reason: the audience may have detected the advertising intention
## Research Results

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**Table 4:** ANOVA analysis of main and interaction effects  
* = $p < .05$, ** = $p < .01$, and *** = $p < .001$
Results: Test of H2

Figure 3: Main effect online reviews on brand attitude
Results: Test of H2

Figure 4: Main effect online reviews on attitude toward product placement
Results: Test of H2

Figure 5: Main effect online reviews on online reviews
These results validate the concept of Media Richness Theory, which holds that high media-rich messages are more capable of increasing audience satisfaction than are low media-rich messages.

The use of the IEMSS functionality to display reviews of embedded products obtained from the Internet to the audience of an idol drama may provide the audience with the views of others who have used the embedded product, improving their attitude toward the brand and product placement and stimulating their purchase intentions.
Electronic word-of-mouth (eWOM) information is considered more trustworthy, relevant and powerful than manufacturer-provided marketing information (Bickart & Schindler, 2001; Gruen et al. 2006)
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*Table 5: Multivariate analysis of main and interaction effects*
56 percent of the participants considered it distracting when both appeared on screen and felt that this presentation diverted their attention away from the idol drama.
Research Results

- MMS is a double-edged sword that can increase audiences’ perceived sense of invasion even if the perceived information and entertainment value is also increased (Xu et al., 2009)

- 68 percent of the participants believed that if the embedded product and the online reviews appeared simultaneously, the online review was relevant to the product.

- Eliminating the interference produced by the system and maintaining the relevance of the system for audiences are subjects worthy of examination.
Research Results

- 22 percent did not notice any of the streaming information when it was shown on the screen.

- The Limited Capacity Model of Attention suggests that when individuals face two or more stimuli, they divide their attention between a primary task and a spare task (Kahneman 1973; Nebenzahl & Secunda 1993).
Research Results

The participants allocated most of their attention to the main task, the program plotlines, when they watched idol dramas. Only a small portion of their attention was allocated to the spare task, the product-relevant descriptions or online product reviews shown on the screen.

The results suggest that when the IEMSS is formally employed for product placement in television programs, and combined audio-visual methods described by Gupta and Lord (1998) should be used to design product placement.
Theoretical & practical implications

- However, increasing media richness using the IEMSS program developed in this study facilitated the discussion of various aspects of product placement and provided a more comprehensive understanding of product placement effects.

- The experimental results can provide a reference for the future use of the IEMSS in product placement strategies for interactive television.
Limitations

- This approach could be expanded to other applications in the future. Ex: television shopping programs

- Other methods of displaying these messages that do not interfere with the image but that provide adequate information to the audience could be considered.
Thank You for your listening!
Independent variables

The following six items remained after filtering:

- Reviewer “Xiaojin”: Cool in the mouth, refreshing for the heart.
- Reviewer “momo”: Drinking a bottle on a hot summer day is super refreshing!!
- Reviewer “malle”: Very cooling on a summer day.
- Reviewer “Lemon lover”: I like this type of DemiSoda drink a lot, although it is a little hard to choose between this and the grape flavor. However, drinking a cup of this lemon drink after exercising is super refreshing; I enjoy the sour and sweet taste a lot.
- Reviewer “jean”: The best choice for a summer day.
- Reviewer “cisual”: Thirst-quenching and great-tasting on a summer day.
Selection of experimental video

The dialogue in the clip was as follows:

*Female protagonist A: You’re back.*
*Male protagonist A: This is for you.*
*Female protagonist A: This is my favorite drink! I didn't expect Quan to remember – does his giving me a drink mean that he saw the note and scarf I gave him?*
*Male protagonist A: Should I say that I got the note and scarf she gave me? After all, she is a considerate girl.*