

# Online advertising by the comparison challenge approach

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## Abstract

To enhance the effectiveness of online comparisons from a manufacturer's point of view, we develop a framework for the comparison challenge approach. To develop the comparison challenge framework, we analyze 12 factors that determine the characteristics of comparison and propose models of valuable comparison challenges using the *CompareMe* and *CompareThem* strategies. We demonstrate the approaches with the example of PC selection. To help plan the comparison challenges, we formulate a mathematical programming model that maximizes the total value of comparison under the constraints of comparison opportunity and budgetary limitation. The model is applied to eight comparison scenarios, and its performance is contrasted with the view of balancing long-term perspective and short-term revenue increase. The performance of the comparison challenge approach is contrasted with those of random banner and similarity-based comparison approaches, and shows a substantially higher effect.

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## 1. Introduction

Internet advertisement has become very popular for the promotion of online sales [1,2]. Internet advertising revenue in the US has grown from \$8.23 billion in 2000 to \$12.5 billion in 2005 [3]. According to a survey conducted by the American Advertising Federation [4], the percentage of media budgets allocated to online advertising represented 14.1% in 2005, a figure that is projected to hit 19.1% by 2006.

To sell products on the Internet, it is common for manufacturers to advertise their models in banners and comparison tables at third-party comparison portal sites such as [shopping.com](http://shopping.com), [shopper.cnet.com](http://shopper.cnet.com), [pricegrabber.com](http://pricegrabber.com), and [mysimon.com](http://mysimon.com) [5]. Since many customers visit comparison sites before they decide what to order, the online comparison can be used as an important channel of advertisement [6,7].

In those sites, the Internet ads may take various approaches, such as *banners as arbitrary reminder*, *personalized banners as relevant reminder*, and/or *tabular comparison*.

When a manufacturer designs a new product, it usually considers targeting competitors' models to beat the competitors in terms of performance and/or price, particularly when the manufacturer is not the major market leader. For instance, a specific model of notebook PC has competing models that are produced by the market leaders. When a new model is developed that can outperform the competitors' models, the manufacturer is eager to demonstrate this comparison to customers who are viewing the competing models. In the traditional comparison site, however, the manufacturer has no control over how the comparison is displayed. So it is desirable for the manufacturer to have an opportunity to invoke *Comparison Challenges*. The *CompareMe Challenge* can be triggered when a customer browses a competitor's model, while the *CompareThem Challenge* can be triggered when the customer browses the manufacturer's own model [8,9]. In either case, the basic brand power and trust in the manufacturer and information provider will be required to attract the customer's

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attention and encourage the customer to click on the comparison [10,11].

Suppose the performance and price of a product outperform those of the competitor’s displayed item. As illustrated in Fig. 1, the manufacturer will be eager to shout “Compare Me!”. To be more informative, the term “Me” may be replaced by the specific name of the company or model. Since the comparison will precisely contrast the performance and price, the manufacturer will not be motivated to challenge another product unless their products are competitive in at least certain respects. This implies that the burden of unnecessary comparison can be screened out by the nature of the comparison challenge. Thus we can expect that the comparison will be more relevant, informative, and timely than traditional tabular comparison.

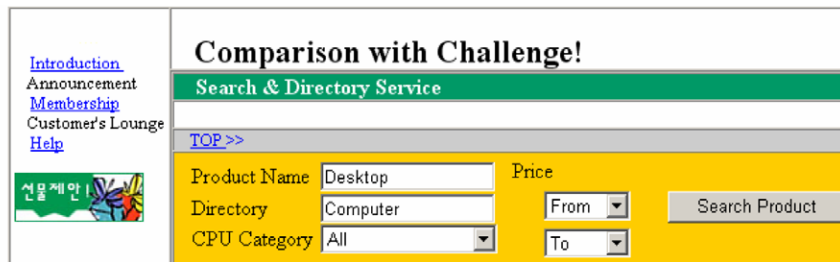
When a third-party portal site allows manufacturers to attach the “CompareMe” button at the request of a challenger, this can provide the opportunity of *active comparison* (in contrast with traditional *passive comparison* in tables) and *just-in-time advertising* that would not be possible in physical marketplaces. The “CompareThem” button may be browsed at the manufacturer’s own site to enable a comparison that demonstrates the superiority of the manufacturer’s products without visiting other sites. Nevertheless, it is the customer who ultimately decides whether to click the CompareMe button for comparison or not.

The comparison challenge can be found in real-world sites such as General Motors’ BuyPower site, shown in

Fig. 2, which compares GM’s model with other vehicles [12]. Lee and Lee [8,9] developed a prototype system of CompareMe at <http://compareme.kut.ac.kr> (see Fig. 1), and were awarded a patent for the comparison challenge approach. No commercial sites provide the comparison challenge services yet.

The remaining part of this paper is organized as follows. The relevant literature on Internet advertising, comparative advertising, and the importance of considering brand power and trust are reviewed in Section 2. To develop a framework of advertising by the comparison challenge approach, we analyze 12 factors that determine the characteristics of comparison. To measure the value of online comparison from the challenging manufacturer’s point of view, we define comparison as valuable if the comparison provides relevant, advantageous, and trustworthy information at the right level of detail. This issue is analyzed in Section 3, and demonstrated with real-world data for PC selection in Section 4.

When a manufacturer has a small number of products to submit for challenges and the competitors have a small number of models to challenge, the planning for the comparison challenge is relatively straightforward. The manufacturer may simply find the comparison sites that provide such challenges. However, when the numbers are large, it is a non-trivial problem for a manufacturer to select its own and the competitors’ items to challenge and determine appropriate comparison sites. To assist this comparison



Search result with directory name of ‘Computer’ and product name of ‘Desktop’(Total 85items),

[ [Best price order](#) ] | [ [Maker order](#) ] | [ [Associated mall order](#) ]

Product Name		Maker	Model	Associated Mall	Best price
<a href="#">Gateway 700XL</a>		Gateway	700XL	Gateway Online	\$ 2999
<a href="#">Hewlett-Packard vectra vl420</a>	<b>CompareGateway</b>	Hewlett-Packard	vectra vl420	Hewlett-Packard Online	\$ 2816
<a href="#">Gateway 500XL</a>	<b>CompareThem</b>	Gateway	500XL	Gateway Online	\$ 2599
<a href="#">IBM Xseries-lcd172</a>		IBM	Xseries-lcd172	IBM Online	\$ 2499
<a href="#">Hewlett-Packard 790n</a>	<b>CompareMe</b>	Hewlett-Packard	790n	Hewlett-Packard Online	\$ 2279
<a href="#">Hewlett-Packard e-pc42</a>	<b>CompareGateway</b>	Hewlett-Packard	e-pc42	Hewlett-Packard Online	\$ 2269
<a href="#">IBM Xseries-lcd17</a>		IBM	Xseries-lcd17	IBM Online	\$ 2199
<a href="#">Compaq presario 8000</a>	<b>CompareGateway</b>	Compaq	presario 8000	Compaq Online	\$ 2196
<a href="#">Dell Dim 8200</a>	<b>CompareMe</b>	Dell	Dim 8200	Dell Online	\$ 2049

Fig. 1. CompareMe buttons in a comparison portal.

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