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Yuichi Sasaki  
*Keio University*

Hiroshi Tsuda  
*Business Innovation Sector*

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# **Driving Forces in Product Selection Evaluation Sites, Magazines, and Word of Mouth Information A Comparison by Users of a Cosmetics Product Evaluation Site**

Yuichi Sasaki  
Graduate School of Media and Governance  
Keio University  
sasakiy@sfc.keio.ac.jp

Hiroshi Tsuda  
NTT Data Corporation  
Business Innovation Sector  
tsudah@nttdata.co.jp

## **Abstract**

*With cost reductions in dispatching information on the Internet, web sites have appeared which collect information by consumers evaluating various products (product evaluation sites). These sites, in addition to traditional forms of information spread through magazines and direct word of mouth communication are seen to influence the selective purchasing activity of consumers. In order to determine the relative effectiveness of these three information sources we carried out research on a particular site with two independent surveys of site users. The research demonstrated that product evaluation sites have gained effectiveness as a information source, which not only provides information on products as such (product recognition) but also importantly offers crucial information for making a final purchasing decision.*

**Keywords:** Information network, product evaluation, evaluation site, media selection, purchase

## **1. Overview**

On the Internet we can find product evaluation sites that gather and present evaluative information in terms of scores and messages posted by consumers who actually bought and tried these products. These sites are open to the public and have attracted considerable attention in the business world by way of their influence on customer purchasing behavior.

In this paper we will discuss the comparative effectiveness of three information sources on purchasing behavior, namely that of evaluation site, magazine and word of mouth. Research results are based on two independent user surveys of a large evaluation site. In conclusion, it may be postulated that evaluation sites in general have experienced an increase in their relative effectiveness in recent years. Three concepts by which information sources' effectiveness on evaluation site users was determined and the reasons for the increasing effectiveness of these sites will be examined in turn.

Chapter 2 deals with the characteristics of evaluation site and Chapter 3 summarizes the survey definitions of the research. The following two chapters introduce and examine the research hypothesis in detail. Research results and the comparative effectiveness of the three information sources under consideration are discussed in Chapter 6. The final chapter considers the limitations of this study, its contributions to our understanding of consumer behavior, and some future issues.

## **2. Evaluation Site Characteristics**

### ***2.1 Sites and their Base as Information Source***

Evaluation sites present two types of information to their users, one being based on the ‘mass’ information, the other on the ‘personal’ information. The ‘mass’ information source offers users condensed information such as average evaluation scores, the number of evaluation comments for given products, and ‘virtual’ assessments typically formed from the findings of a large number of people(group). The ‘personal’ information source, on the other hand, presents evaluative information posted by individuals. Site users can suitably customize this information, automatically or manually, in terms of their own personal criteria, such as age or skin type.

Characteristically, evaluation sites allow access to both types of information, ‘mass’ based, as well as ‘personal’. This fact distinguishes evaluation sites among the information sources and has them appear in lines of communications research such as that on ‘reference groups’ and word of mouth.

The ‘Reference Group,’ a concept Hyman (1942) defined as “a group of people who influence individual behavior remarkably”. Later, in Marketing domain, Bearden and Etzel (1982), Childers and Rao (1992) analyzed on what genre of product the influence of reference group is strong. In Rosen (2000) evaluation sites are called as ‘buzz aggregate tool’, and he mentioned that evaluation sites derive some influences to the quality of products and services.

As for the ‘personal’ information source, studies in that field originated with Lazarsfeld, Berelson and Gaudet (1944). Lazarsfeld threw out the ‘Hypodermic Needle Model’, invoked the ‘Limited Effect Model’ based on the empirical analysis of the effects of the U.S. presidential campaign in 1940. Later, Katz and Lazarsfeld (1955) noted the influence of an ‘opinion leader’, and proposed a new ‘Two-step flow model’, such as where “an opinion leader receives information from the mass media and transforms and transmits it to others”.

Inspired by these studies, word of mouth communication has been studied even in Marketing since the 1960s. In 1971 Sheth reported his own findings, notably that a “person who adopts a new product through personal communication conveys product information to other consumers.” As a result, a leading communications model since the 1970s appears to be stressing the flow of information from individual to individual in a model of ‘numerous steps.’ Given this trend, Engel et al (1969), Day (1971) analyzed in which stage of purchase decision making process, word of mouth information is effective. Wilson and Peterson (1989), Shimizu (1999) analyzed on what genre of product the influence of word of mouth information is strong.

## ***2.2 Site Influence and Decision Making***

As outlined above, evaluation sites support features of both ‘mass’ information source and the ‘personal’ information source. On that basis, our purpose was to determine at which point evaluative product information has the greatest influence on the decision making process beginning with product encounter, followed by product familiarization, and ultimately leading up to a purchase.

Shimizu (1999) advanced a new conceptual model describing consumer behavior along these lines by incorporating former comprehensive models of decision-making into his own. The individual decision making process starts with consumers recognizing their needs and, after information has been processed and an attitude developed, finally making a selection. The ‘reference group’ receives information by word of mouth dispatched from the consumers and in turn influences the purchasing activity of subsequent consumers. In Shimizu’s model, sites offering product evaluations are

considered as one type of external source of information. These evaluation sites are seen to influence consumers at the level of information processing, depending on the amount of existing information and the participation level of consumers in general, before developing an attitude.

### 3. Framework of Surveys

#### 3.1 Evaluation site: @cosme

In this study we are focusing on @cosme (<http://www.cosme.net/>). The site is one of the biggest evaluation sites in Japan, which is an evaluation site for cosmetics established in December 1999. Product evaluation information at this site is called ‘kuchikomi’ (word of mouth in Japanese) and consists of scores (stars) out of 7 and comments posted by users who are registered as site members (Figure 1). Quarterly number of visitors and accumulated number of ‘kuchikomi’ are shown in Chart 1 and Chart 2.

Figure 1. Home and information page at @cosme

The image shows a screenshot of the @cosme website. The top navigation bar includes 'ログイン' (Login), 'メンバー登録' (Member Registration), 'クチコミデータベース' (Review Database), 'トピックス' (Topics), 'コミュニティ' (Community), 'お気に入り' (Favorites), 'マイページ' (My Page), and 'ショッピング' (Shopping). The main content area features a search bar and a list of products. A specific product, 'リキッドファンデーション' (Liquid Foundation), is highlighted with a blue box. This box contains the product name, manufacturer/brand name, and an average rating of 4.0 stars out of 7. Below the product name, there are several user reviews, each with a star rating and a date. The reviews are in Japanese and discuss the product's performance, such as 'お肌を乾燥させない' (Doesn't dry the skin) and '化粧崩れにくい' (Doesn't smudge). A search specification box is located at the bottom left, and a larger box at the bottom right contains a detailed search specification, including 'Name, Skin Type, Age, Date, Comment, Effectiveness'. The search specification box is a grid with various filters and options.

Chart 1 Transition of Visitor per Month

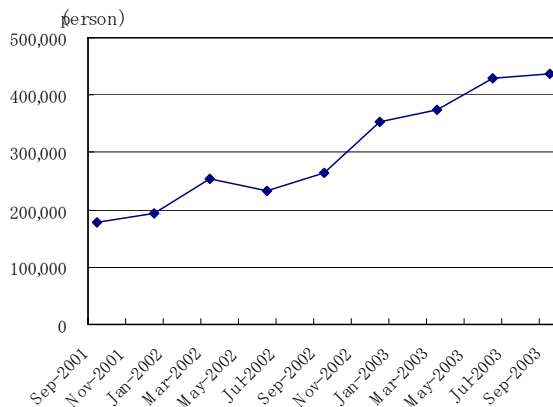
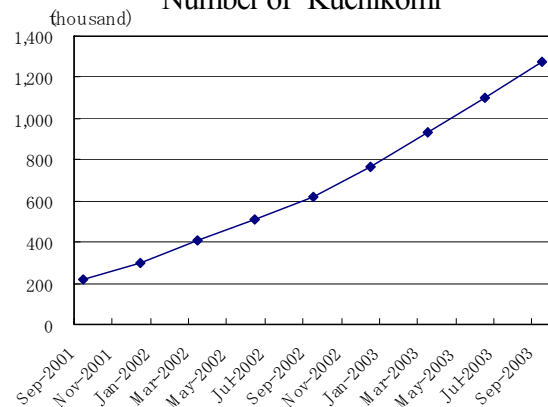


Chart 2 Transition of Accumulated Number of 'Kuchikomi'



Two independent surveys of @cosme members were conducted, one in July 2002, and the other in September 2003. The number of monthly visitors at the time of the first survey was 250,000 visitors, and that at the time of the second survey 450,000. Basic monthly statistics of @cosme during the times of survey are shown in Table 1.

The average scores and number of 'kuchikomi' information for a certain product are shown on the page and viewers can extract information by specifying factors such as age, type of skin, and 'kuchikomi' poster. Another function of this site is to assemble information from automatically sampled evaluators making similar evaluations of a given type of product and provide it to users who are sending more than a defined number of items of 'kuchikomi' information to the site. In other words, this site has both 'mass' information source and 'personal' information source characteristics as defined in Chapter 2. Therefore, @cosme was regarded as a most appropriate research object to examine the influence of evaluation sites on consumer purchasing behavior.

Table 1: Basic Statistics of @cosme during Times of Survey

Time	July 2002	September 2003
Visitors to the Site per Month	250,000	450,000
Page Views per Month	15,400,000	36,000,000
Total Registered Members (including Cell Phone Members)	150,000	270,000
Number of Products Evaluated at the Site	27,000	37,400
Cumulative Number of Information Items Sent to the Site	550,000	1,270,000
Total E-mail Magazine Subscribers	54,000	145,000

### 3.2 Summary of Survey Statistics

The data analyzed in this study comes from questionnaires answered by @cosme members over two different periods of time. The surveys were sent through the Internet to @cosme female members randomly selected within date of registration, place of residence, age, and membership type such as active member (AM) and silent member (SM). AM is a member who dispatched more than one comment to the site in the 3 months prior to the survey and SM who did not. A summary of the survey statistics is shown in Table 2.

Table 2: Member Survey Statistics

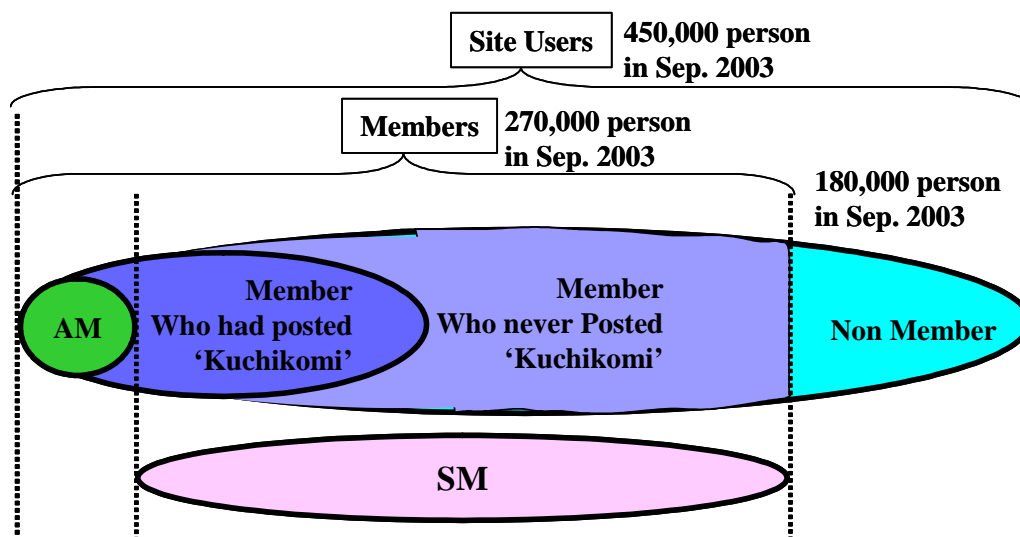
	Member Survey	
	1	2
Survey Area	Tokyo, Chiba, Kanagawa, Saitama	
Gender, Age	Female, age 20' to 40'	
Sampling target	@cosme members who are registered for more than six months	
Requesting Form	E-mail	
Responding	Through Web	
Sample Size	3,210	3,796
Valid Answers	804	927
Period	2002/7/11~7/21	2003/9/4~9/16

### 3.3 Evaluation Site Users

As stated above, member surveys were conducted in order to obtain equal number of answers from either AM and SM samples. One purpose of this sampling was to enable a comparison of AM with SM (Ogawa and Sasaki et al, 2003). This method was also found to be efficient in defining the number of evaluation site users in aggregate.

In Member Survey 1 the percentage of AM to total members in the survey area was 9.6%, and in Member Survey 2 the percentage was 11.2%<sup>1</sup>. A weighted average based on the AM and SM figures could have been calculated. However, in this study the SM figure is employed as the number of evaluation site users in aggregate (448 for the first Member Survey and 478 for the second), considering the number of site users who are not registered as member (Figure 2).

Figure 2 Site User , AM and SM



<sup>1</sup> For the first survey, AM:SM = 1,570:14,820, and for the second, AM:SM = 2954:23,377 in survey area. In Kaneko (1997) the ratio of AM who posted a message at least one time to the electronic meeting room at Nifty Serve in 1995 is 43%, and Kuramochi (2000), studying mailing lists, reported 10.1%, for the same definition as used in this study.

### 3.4 Target Product and Information sources Compared

We selected lotion as the targeted product in our research. It was presumed that product evaluation information for skin care products which are used directly on the skin, draw more attention than those for make-up products. Lotions for which users had posted many information items at @cosme were then picked from a number of skin-care products, which we believed to be most suited to reveal the characteristics of evaluation sites.

Advertisements and articles in magazines representing the ‘mass’ information source, and word of mouth from friends and acquaintances representing the (external) ‘personal’ information source were selected for comparison. TV commercials were not utilized since lotions are infrequently advertised. Rather, lotions tend to employ magazines that can easily convey such product information as ingredients and effectiveness. Table 3 summarizes the information type represented by the three information sources in the present study.

Table 3: Characteristics of the Three Information Sources

	‘Mass’ Information Source Characteristics	‘Personal’ Information Source Characteristics
Mass Media (Magazines)	○	
Word of mouth		○
Evaluation site	○	○

## 4. Introduction of Research Hypotheses

In this chapter, a number of research hypotheses (RH) are formulated which apply findings of existing studies to consumer behavior. It should be noted that a number of inferences are made in the formulation process. Therefore the term ‘research hypothesis’ is used here rather than the conventional term theoretical hypothesis.

### 4.1 Research Hypotheses at the Stage of Product Acknowledgement

The following hypotheses can be formulated by comparing the three information sources discussed above at the stage of product acknowledgement.

Rogers, throughout his meta-analysis of studies of adoption of innovation, maintained the proposition, “Mass communication influences consumers greatly at the information gathering stage while personal communication influences them greatly at the last decision making stage” (1983). Day (1971), examining decision making in food purchases, noted that mass advertisement was effective in terms of recognition, attention, and interest in the early stages of considering a purchase, while word of mouth information was more important when the purchase decision came closer. However, these findings regarding general consumers appeared before any evaluation site had been established. It is necessary, therefore, to infer how those findings of Rogers and Day are being constrained in the data network age, i.e. how the impact of magazines and word of mouth may be altered through the utilization of evaluation sites.

#### ***4.1.1 Evaluation Sites and Word of Mouth Information***

Though evaluation sites are characteristically subject to both ‘mass’ and ‘personal’ information sources, and exhibit features of both as discussed before, ‘mass’ information source in this study are mainly understood to enlarge the ‘reference groups’, i.e. those groups of people who spread evaluative comment through the net. It is presumed, then, that evaluation sites as a whole, rather than magazines, are an information source close to word of mouth, and that when accessing evaluation sites, word of mouth receives a stronger influence than magazines. As suggested by Rogers and Day, the mass media are rather more effective at the earlier stages of product recognition. Focusing our comparison on evaluation sites and word of mouth information, research hypothesis RH-1 can now be formulated as follows:

RH-1: Site users recognize that evaluation sites, as an information source creating product awareness, are more effective than word of mouth information obtained directly from friends and acquaintances.

#### ***4.1.2 Evaluation Sites and Magazines***

Given that the ‘mass’ information sources characteristics of evaluation sites mainly work to enlarge ‘reference groups’, we inferred that site users perceive evaluation sites as being rather different from magazines. Therefore we assume that the findings of Rogers and Day, where consumers customarily recognize products through the mass media, have not changed much even for site users. Accordingly, comparing evaluation sites and magazines, the following two RHs may now be introduced:

RH-2: Site users recognize that advertisements in magazines, as an information source creating product awareness, are more effective than evaluation sites.

RH-3: Site users recognize that articles in magazines, as an information source creating product awareness, are more effective than evaluation sites.

#### ***4.1.3 Word of Mouth Information and Magazines***

We proposed that evaluation sites are more effective than word of mouth information in RH-1, and that magazines are more effective than evaluation sites in both RH-2 and RH-3. This allows us, finally, to derive RH-4 and RH-5:

RH-4: Site users recognize that advertisements in magazines, as an information source creating product awareness, are more effective than word of mouth information directly from friends and acquaintances.

RH-5: Site users recognize that articles in magazines, as an information source creating product awareness, are more effective than word of mouth information from friends and acquaintances.

### ***4.2 Research Hypotheses at the Final Stage of Decision Making***

The following hypotheses can be formulated by comparing the three information sources at the stage of decision-making just prior to purchase.

#### ***4.2.1 Evaluation Sites and Word of Mouth Information***

As suggested in the previous section, since evaluation sites are information sources close to word of mouth information, they have greater impact on the user at this stage than magazine advertisement. Specifically, Rogers and Day proposed that word of mouth information is important to consumers at this last stage of decision-making before the actual purchase. But as we have seen, with evaluation sites possessing features of both ‘mass’ and ‘personal’ information sources, they can offer more consumer



information than word of mouth by itself. In this sense we believe that evaluation sites tend to replace word of mouth information. RH-6 can now be introduced:

RH-6: Site users recognize that evaluation sites, as an information source offering key information for the final purchase decision, are more effective than word of mouth information.

#### ***4.2.2 Evaluation Sites and Magazines***

Again, comparing evaluation sites with magazines, Rogers and Day found that the importance of word of mouth information increases with the approach of final decision-making. Given that evaluation sites provide personal information beyond the 'mass' information source aspects of advertisement and articles in magazines, we can now formulate the following research hypotheses:

RH-7: Site users recognize that evaluation sites, as an information source offering key information for final purchase decision-making, are more effective than magazine advertisements.

RH-8: Site users recognize that evaluation sites, as an information source offering key information for final purchase decision-making, are more effective than magazine articles.

#### ***4.2.3 Word of mouth information and magazines***

With evaluation sites materializing on the net, word of mouth information appears to be losing importance as an information source offering independent product information. However, it does not mean that consumers no longer consider word of mouth information as a useful information source. Site users still refer to word of mouth information as key factor in deciding a product purchase. Even allowing for a reduction in the significance of external word of mouth information relative to what we find in evaluation sites, word of mouth information is seen to exceed the influence of mass media information at the final stage of the decision-making process. As suggested by Rogers et al, the customary thinking that word of mouth information has a decisive influence just prior to purchase continues to exist with site users. The following RHs can now be formulated:

RH-9: Site users recognize that word of mouth information from friends and acquaintances, as an information source offering key information by which to decide a product purchase, is more effective than advertisements in magazines.

RH-10: Site users recognize that word of mouth information from friends and acquaintances, as an information source offering key information by which to decide a product purchase, is more effective than articles in magazines.

### **5. Verification of Research Hypotheses**

Research hypotheses were verified on the basis of differences in averages of samples corresponding to the results of each survey within a 5% margin of discrepancy. Relevant questions are shown in footnote<sup>2</sup>.

#### ***5.1 Results of Verification at the Stage of Product Acknowledgement***

In first survey, RH-1 and RH-3 were accepted from among RH-1, RH-2, and RH-3 as shown in Table

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<sup>2</sup> Information Source Assessment: How useful was <name of information source>, when you bought the lotion, named in <question x> and used presently? Choose a rating for each of the following categories. (A) The information source gave me the name of the product. (B) The information source gave me detailed information on the product. (C) The information source gave me key information to decide the purchase. Using Likert's scale of 5 ratings, the answers were rated, 5: strongly favorable to product image, 3: undecided, and 1: strongly unfavorable.

4, comparing evaluation sites with the other information sources at the stage of product acknowledgement. Evaluation sites appeared effective compared to word of mouth information from friends and acquaintances, and articles in magazines turned out effective when compared to evaluation sites. RH-2 was rejected. As for the comparison of evaluation sites and advertisements in magazines a statistically significant difference could not be verified, although advertisement obtained a higher average score.

In second survey, not only RH-2, but also RH-3 was rejected, as shown in Table 5. Articles in magazines as well as advertisements were not significantly more effective than evaluation sites at the stage of product acknowledgement. The numerical value of evaluation sites increased from 2.75 in the first survey to 2.91 in the second. The number of evaluation sites exceeded that for advertisements in magazines. It appears that evaluation sites are increasing in both their absolute effectiveness and relative importance as information source at this stage.

RH-4 and RH-5, comparing word of mouth information from friends and acquaintances with magazines, were both accepted in both surveys, while magazines appeared to be more effective than word of mouth information from friends and acquaintances as the information source offering product acknowledgement information.

Table 4. Comparison of Information Sources in the First Survey

Question	Evaluation Sites Users						
	t-score	Evaluation Sites	Balance of Difference	Information Source	Balance of Difference	Word of Mouth	t-score
Acknowledgement of Product	2.443	RH-1	>	Word of Mouth	N/A	2.54	N/A
				2.54			
	-1.763	RH-2	2.75	Ads in Magazine	>		RH-4
			2.91				
	-4.475	RH-3	<	Articles in Magazine	>	RH-5	-6.565
				3.15			
Understanding Product	6.766	3.13	>	Word of Mouth	N/A	2.53	N/A
				2.53			
	4.245		>	Ads in Magazine	>		-2.491
			2.75				
	0.250			Articles in Magazine	>		-6.268
				3.10			
Key to Purchase	4.780	RH-6	>	Word of Mouth	N/A	2.52	N/A
				2.52			
	6.226	RH-7	>	Ads in Magazine			RH-9
			2.93	2.40			
	0.913	RH-8		Articles in Magazine	>	RH-10	-3.858
				2.85			

Inequal signs are shown when significant discrepancy exists by 5% margin.  
When there is no significant discrepancy cells are left blank.

### 5.2 Results of Verification at the Final Stage of Purchase Decision

In first survey, RH-6 and RH-7 were accepted from among RH-6, RH-7, and RH-8, comparing evaluation sites with other information sources at the final stage of product purchase, as shown in Table 4. Evaluation sites turned out to be more effective compared with word of mouth information from friends and acquaintances, and advertisements in magazines. However, compared to articles in magazines, evaluation sites could not assert their effectiveness.

In second survey, RH-8 is accepted in addition to RH-6 and RH-7, as shown in Table 5. The numerical

value of evaluation sites increased from 2.93 in the first survey to 3.21 in the second. At this last stage, evaluation sites increased both their absolute effectiveness and relative importance.

Both RH-9 and RH-10, comparing word of mouth information from friends and acquaintances with magazines, were rejected in the first survey. As for the numerical values, word of mouth information received a higher mark than advertisements in magazines, but lower than that for articles. As a result, articles in magazines proved more effective than word of mouth. In the second survey, RH-9 was accepted and word of mouth information was shown to be more effective than advertisement. Word of mouth also has tendency to increase in relative importance when compared with articles. Although articles were significantly effective in the first survey, there was no difference between them and word of mouth in the second.

Table 5. Comparison of Information Sources in the Second Survey

Question	Evaluation Sites Users							
	t-score	Evaluation Sites	Balance of Difference	Information Source	Balance of Difference	Word of Mouth	t-score	
Acknowledgement of Product	3.782	RH-1	>	Word of Mouth	N/A	2.61	N/A	
				2.61				
	1.139	RH-2	2.91	Ads in Magazine	>		RH-4	-2.464
				2.81				
	-1.286	RH-3		Articles in Magazine	>		RH-5	-5.004
				3.02				
Understanding Product	9.140	3.38	>	Word of Mouth	N/A	2.64	N/A	
								2.64
	9.316			Ads in Magazine			2.64	0.528
	3.661			Articles in Magazine	>		2.64	-5.476
Key to Purchase	7.634	RH-6	>	Word of Mouth	N/A	2.60	N/A	
				2.60				
	11.225	RH-7	3.21	Ads in Magazine	<		RH-9	3.782
				2.32				
	5.763	RH-8		Articles in Magazine			RH-10	-1.783
				2.75				

Inequal signs are shown when significant discrepancy exists by 5% margin. When there is no significant discrepancy cells are left blank.

## 6. Conclusion

### 6.1 Results of Member Surveys

Let us summarize the results of the two Member Surveys in terms of the comparative effectiveness of evaluation sites.

- 1) In the second survey, evaluation sites had higher absolute effectiveness in offering both product acknowledgement information and key information leading up to purchase.
- 2) As the information source offering product acknowledgement, evaluation sites occupied second place among the four targeted information sources in the second survey and were inferior to articles in magazines.
- 3) However, evaluation sites received the highest mark among the four information sources as the information source offering key information leading to the purchase decision, and in the second survey were statistically significantly effective compared with the other three information sources.

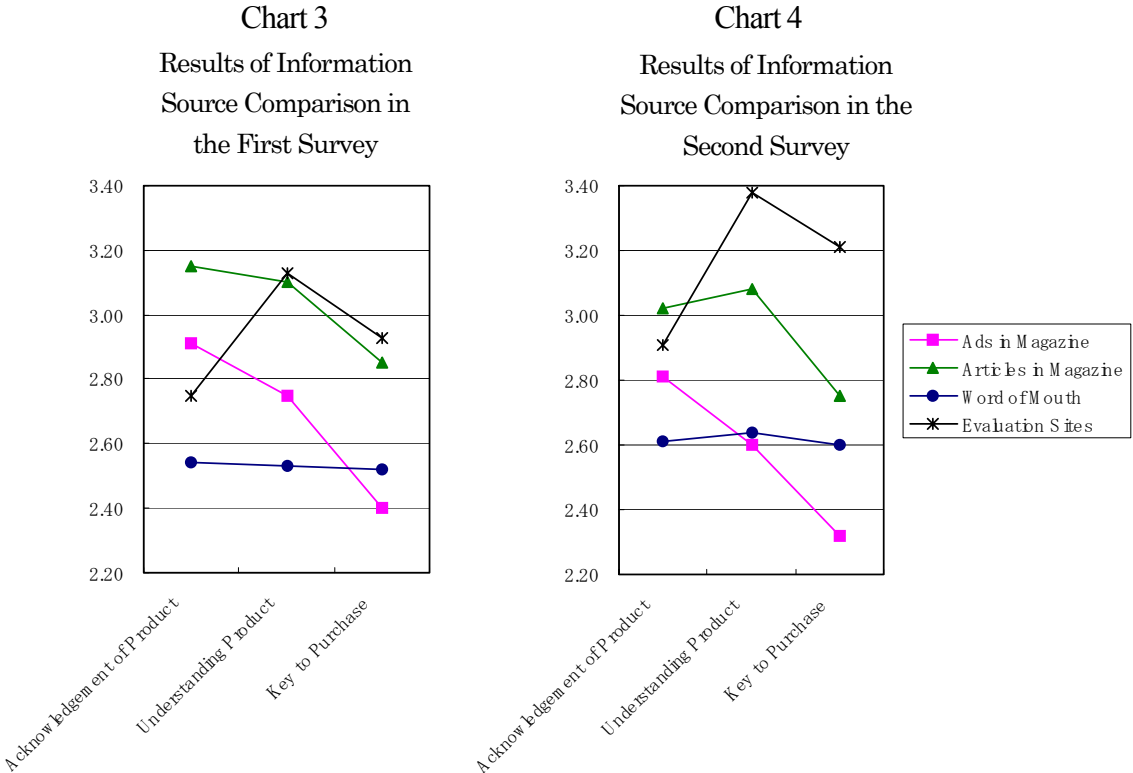
### 6.2 Comparison of Evaluation Sites with Other Information Sources

Finally, reconsidering the results of the two surveys, we would like to review both the comparisons made and the persuasiveness of the concepts underlying the present research.

Let us start with the comparison of evaluation sites and word of mouth information. When formulating RHs for comparing evaluation sites and external word of mouth information, evaluation sites were considered to have a tendency to replace word of mouth information since both were recognized by consumers as being relatively similar information sources. In addition, it was thought that evaluation sites exhibited features of both ‘mass’ information source and the ‘personal’ information source. RH-1 and RH-6, formulated in terms of these inferences, were found to apply in both surveys. But this does not necessarily mean that the assumptions leading to these results are correct.

A survey was conducted with general consumers during the period of the first survey, and questions were asked about the effectiveness of information sources offering, 1) information acknowledging a product, 2) information to understand a product, and 3) key information deciding the purchase of the product. Word of mouth information from friends and acquaintances received numerical values of 3.11, 2.96, and 2.98, respectively, all being higher than the corresponding numbers in the first Member Survey. In view of this, there is every possibility that evaluation sites are replacing part of word of mouth information for site users.

Next, let us compare evaluation sites with magazines. The purpose of Charts 3 and 4 is to graphically contrast the evaluation site numbers of Tables 4 and 5. As can be seen, there is a marked difference between advertisements and articles in magazines, which were considered as a single information source at the introduction of our hypotheses. It is necessary to comment on this.



Studies of the ‘Reference Group’ and of personal communication were employed in the analysis of mass media, word of mouth information, and evaluation sites (Table 3), each being characterized by

the presence or absence of features typical for ‘mass’ information sources and ‘personal’ information. Although advertisements and articles were both categorized as ‘mass’ information source, articles appeared more effective than advertisements, but with a considerable difference. By applying the concept of neutrality of information, an almost satisfactory explanation is available for this. Neutrality of information is guaranteed to some extent in magazine articles, while advertisements in the magazines usually present information highly favorable to the provider of a product. With word of mouth and evaluation sites as research targets in this study, and both types of information coming from consumers, neutrality is guaranteed to some extent. As a result (Table 6), advertisements in magazines is the only information source that does not satisfy the neutrality requirement of information. Accordingly, articles are much more effective than advertisements. Neutrality of information being similar for articles in magazines and evaluation sites, we can now categorize the four information sources as shown below.

Table 6. Characteristics of the Four Information Sources

	‘Mass’ Information Source Characteristics	‘Personal’ Information Source Characteristics	Neutrality of Information
Advertisements in Magazines	○		
Articles in Magazines	○		○
Word of Mouth		○	○
Evaluation site	○	○	○

Chart 3 indicates that in the first survey, articles in magazines were significantly superior to evaluation sites in terms of product acknowledgement. We believe that the speed of information dispersion plays a key role in this. Evaluation information is posted at the evaluation site after the product has come into use, and it needs some time for a certain number of posted messages to accumulate. On the contrary, articles sometimes appear in magazines even before the product is on sale. Therefore articles appear effective as an information source at the product acknowledgement stage.

In the second Survey, however, although the initial indicator for evaluation sites is still lower than for articles in magazines, the significant discrepancy between sites and articles in terms of product acknowledgement is resolved. There might be two reasons to explain this. One is that the time interval for evaluation information to accumulate shortens as the number of users posting information increases. Another reason is that cosmetic manufacturers, who have started to pay attention to evaluation sites for their ability to attract consumers, offer detailed product information to evaluation sites at the time of releasing a new product.

Whatever the reason, the superiority in the speed of information dispersion, which articles in magazines used to enjoy, is no longer an advantage. For information sources offering explanatory information as well as decision-making information, speed is not an important factor. Consequently, when comparing articles in magazines and evaluation sites, the latter showed greater effectiveness in the second survey, enjoying neutrality of information together with the favorable features of ‘mass’

information source and the ‘personal’ information source.

It is most likely that the effectiveness of information sources is judged by site users in three regards; ‘mass’ information source characteristics, ‘personal’ information source characteristics, and neutrality of information. If so, why are evaluation sites where these three aspects combine seen to be ‘absolutely effective’ in catering to both product understanding and final product selection, and ‘relatively effective’ when offering product acknowledgement information? In other words, if information sources are not specifically chosen to suit each stage of the product purchase, and evaluation sites are used to provide information at all three stages, is effectiveness in fact recognized by site users?

We think that the findings, proposed by Simon (1996), on the limits of information recognizable by an individual, are relevant to and quite evident not only for the amount of information, but also for the number of information sources. In the age of ‘information flow in numerous steps’ it seems quite understandable that the manner of choosing information sources together with information is widely employed by the subjects in the second survey, rather than choosing information selectively from divergent information sources. In other words, evaluation sites are becoming increasingly effective because they simultaneously share all three types of information sources features: those of the ‘mass’ information source, the ‘personal’ information source and neutrality of information.

## **7. Contributions and Limitations of this Study, and Future Issues**

In this study evaluation sites have been analyzed using data collected for comparison with other information sources. The study asserts that the effectiveness of the evaluation site is increased for evaluation site users at the point of purchase. The level of effectiveness that evaluation site users associate with each type of information source could be explained with the three features mentioned above. To account for another reason why evaluation sites appear to have greater influence upon purchase behavior, a theoretical hypothesis may be put forward that individuals utilize only a limited number of information sources among those available. These are the contributions of this study.

As for the limitations of this study, three of them will be mentioned as follows. First, inferences have been included when introducing research hypotheses. Therefore, even if a research hypothesis is accepted, it is not always true that each phenomenon is the result of a mechanism that has been merely assumed to exist. The second point is that although the two surveys were conducted separately, the sample populations were not the same, as the site had become more popular between the surveys. Therefore, if further surveys are conducted, the results may change greatly. Third, the number of evaluation site users is still limited. Although the number of visitors to @cosme is constantly growing, the ratio of people who have accessed @cosme prior to the general consumer survey conducted at the time of our first Member Survey was only 4.7%. We were unable to reach a 10% rate at the time of our second survey in September 2003. It would be premature, therefore, to extend our findings on the effectiveness of this evaluation site to cover all purchase activities of cosmetic products, and to extend our conceptual explanation of the recognition of information sources effectiveness to cover all cosmetic consumers.

We are planning to conduct a further study gathering information to compensate for the first limitation, including interviews with site users and analysis of messages posted to sites. The study will examine the degree of advantage site users derive from ‘mass’ information source and the ‘personal’ information source, frequency of access to these components on evaluation sites, importance of each

information source and to what extent neutrality of information is in fact recognized by site users. To resolve the latter two limitations, continuous research will be conducted until survey samples are stabilized, which is expected to shed further light on the role of evaluation sites as the information source supporting consumers' informed purchase decisions.

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