



Word-of-Mouse vs Word-of-Mouth: The Effects of the Internet on Consumer's Pre-Purchase Information-Search Activities

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Abstract

This study of pre-purchase information search activities provides a useful insight into the use, and perceptions, of the Internet for a number of diverse goods and services, compared to more conventional information sources. The main focus of the study is comparing traditional word-of-mouth interaction with that on the Internet – an activity we term ‘word-of-mouse’.

The study results confirm recent suggestions of an hierarchy of Internet use, with web surfing and email representing the entry level, whilst participating in newsgroups and chatrooms representing a higher level. Confidence in and use of the higher level sources was low, suggesting that ‘virtual word-of-mouth’ has yet to attain the status of more conventional word-of-mouth.

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Introduction

There is little escaping the enormous growth in recent years of the Internet and related technologies. The recent explosion in the number and range of websites, and the often optimistic valuations given to Internet companies floated on the stock market, is testament to the perceived potential of the medium, both for communication and distribution purposes.

For the marketer, in addition to the more traditional methods of communicating with the consumer - through television, radio, direct mail, and so on - the arrival of the information age has brought new opportunities to forge closer relationships with their customers. With the introduction of digital television and the next generation of web-enabled mobile phones, access to the Internet will be available to an even greater audience. Marketers need to move to take advantage of the opportunities these advances in technology present.

For the consumer, these new media present the opportunity not only to receive and transmit communications to and from marketers, but also to communicate directly with other consumers. Therefore, in addition to finding out about a particular product or service through a company website, the views of other consumers are available through Internet chatrooms, discussion newsgroups, and through websites free from marketer control.

This inter-consumer communication has led to what has been dubbed the 'virtual community', where consumers of goods and services from around the world can take part in information exchanges, just as they would in their own local community. In the same way that information in the local community can be exchanged via word-of-mouth, we can introduce the term 'word-of-mouse' to describe these Internet based exchanges.

This paper details the results of a study into the effects of these new media on the pre-purchase information seeking behaviour of consumers of various goods and services.

In particular, we look at the relative use of new media by consumers in order to minimise pre-purchase risk; when a consumer is considering purchasing a product or service they will often have a number of options to choose from. The consumer is anxious to make the right choice and, given the options facing them, they perceive a risk in making the wrong choice. Your consumer will therefore take steps to minimise this risk prior to purchase. One way of reducing this risk is to indulge in some information seeking about the various options available. Previous studies have looked into the use of various information sources, ranging from advertisements and other marketer-controlled communications, through independent consumer guides such as *Which?*, to word-of-mouth recommendations from friends or relatives. The study introduces the new media sources ranging from websites to chatrooms to the consumers' information options, and quantifies their use and credibility relative to the more 'traditional' pre-purchase information sources.

Previous Research

Consumer information-search behaviour has attracted much research attention. Cox (1967), and others, argued that when faced with risk or uncertainty in a buying situation, consumers seek information from a variety of sources. Murray (1991) broadly classified these information sources as *Internal* – from the knowledge a consumer already has of the product, and *External* – marketer dominated or personal and interpersonal information. Schmidt and Spreng (1996) further classified the External sources as marketer-controlled (eg advertising), reseller information (eg information charts), third party independent organisations (eg Consumer's Association surveys), interpersonal sources (eg friends), and direct inspection (eg demonstrations).

The mix of information sources – the consumer's information-search strategy - was studied by Srinivasan and Ratchford (1991), who identified nearly sixty variables that influence external information-search, including environmental aspects (eg number of alternatives available), situational variables (eg perceived risks, time constraints), and consumer variables (eg education, prior knowledge, involvement). O'Reilly (1982) found that accessibility and quality of information were defining factors in information-search.

The importance of word-of-mouth in particular as an information source is well documented in consumer behaviour literature. Its relative importance as a source of pre-purchase information was shown empirically in studies by Engel, Blackwell and Kegerreis (1969) who found that sixty per cent of customers of a new auto-repair centre cited word-of-mouth as the most influential factor in their choice. A study by Herr *et al* (1991) concluded that word-of-mouth is a more influential factor than neutral print sources such as the consumer report *Which?*, and Mangold (1987) supports the predominance of word-of-mouth sources in his study within the professional services sector.

Other detailed studies of the word-of-mouth phenomenon have looked at input (pre-purchase) and output (post-purchase) flows (eg File *et al*, 1994), positive and negative flows (eg Richins, 1983), and motives for indulging in word-of-mouth communication (Feick and Price, 1987). The choice of information source, and in particular the predominance of word-of-mouth for certain types of purchase, has been studied. Zeithaml (1996) suggests that more reliance is placed on interpersonal word-of-mouth sources for services than for goods.

The link between perceived risk in a purchase and choice of information sources is also well documented by, for example Cox (1967), who found that the amount and nature of perceived risk defined the consumer's information needs and the sources they subsequently used. In an earlier study, Cox (1963) concluded that personal influence became more important as an information source the greater the perceived risk, whilst Lutz and Reilly (1973) showed that word-of-mouth was the most important risk reducing source. Also, Cox, in his 1963 paper, supports the notion that a consumer's use of an information source is related to their confidence in that source.

So we can conclude that the consumer's pre-purchase information-search, the choice of sources used, the links with reducing risk in a purchase, the confidence in different sources, and the predominance of word-of-mouth, have all been subject to sustained study. Only recently, however, has there been an acknowledgement of the potential impact of Internet based sources on the pre-purchase information search.

Studies have tended to look only at the marketer led aspects of communication via the Internet with few looking into the two-way communication between marketer and consumer, and even fewer examining the potential for consumer to consumer information flow. As far

back (in Internet terms) as 1993, Tax, Chandrashekar and Christiansen argued that with the increasing use of electronic communications among consumers, it is likely that word-of-mouth communication will increase.

In more recent discussion papers, Buttle (1998) introduces electronic media to his definitions of word-of-mouth and, referring to the use of electronic bulletin boards, introduces the term 'virtual word-of-mouth'. Hagel and Armstrong (1997, p143) introduce the idea of a virtual community where people with common interests and needs come together online. These communities will have significant and growing buying power, exchanging information on the price and quality of various goods and services. Finally, Kozinets (1999) introduced the idea of an hierarchy of levels of use and involvement in Internet activities. He also points towards varying levels of interaction within virtual communities. His final hypothesis was that the virtual interaction is unlikely to replace physical encounters or information from traditional media, but will become an important supplement to social and consumption behaviour. The online information becomes part of an extended repertoire that includes 'traditional' face-to-face interactions.

From this literature review it became clear that although information-search was well understood and that the role of word-of-mouth within this search was also well documented, no studies had quantified the effects of Internet based information. However, the more recent discussion papers by Buttle, Hagel and Armstrong and especially Kozinets provided a useful set of hypotheses which form the basis of this study.

Research Agenda

The study fills a gap in empirical evidence of use of word-of-mouth Internet sources by consumers in various pre-purchase situations. It provides a snapshot of actual use and confidence in these Internet sources, both marketer-controlled and consumer-controlled, relative to other sources. It also goes some way to testing the various hypotheses posed by Kozinets and others, providing a picture of the levels of interaction between consumers using new media.

The objectives of this study were to answer this series of interlinked questions.

- ◆ Do consumers use Internet based sources as part of their pre-purchase information search strategies?
- ◆ Which of the Internet based sources (marketer-controlled or consumer-controlled) are more popular in pre-purchase information searches?
- ◆ Does the use of Internet information sources depend on the products or services being purchased?
- ◆ How much confidence do consumers have in Internet sources relative to other sources?
- ◆ Is this confidence dependant on the purchase being considered?
- ◆ Is use of an Internet based source indicative of confidence in that source?

Research Methodology

The research methodology was based on the technique used by Murray (1991) in his study of pre-purchase information seeking behaviour of consumers of a range of goods and services. Murray's study was designed to research the link between levels of service attribute in a purchase and the choice of pre-purchase information sources.

In Murray's study, each respondent was asked to consider a potential purchase depicted in one of fifteen scenarios. They were then shown twenty-five information sources which would help them choose their preferred purchase option. The respondent was asked, for each of these twenty-five sources, to indicate likelihood of use and trust in each of the sources.

As his research was designed to investigate a link between the use of certain sources and certain purchase scenarios, and in particular to show that the greater the service attribute of a purchase the more likely the use of word-of-mouth sources, Murray initiated a preliminary survey to rank the fifteen scenarios by their level of perceived 'serviceness'.

From the results of this preliminary survey, Murray was able to divide the fifteen purchases into low, medium and high service attribute categories. Importantly, Murray states that perceived risk in a purchase is directly linked to its levels of 'serviceness'.

As seen in the review of consumer behaviour research, the level of perceived risk in a purchase situation is a key driver in the use of word-of-mouth as part of a consumer's overall information search strategy (Lutz and Reilly, 1973). The riskier the purchase the more likely consumers are to engage in word-of-mouth activities. We might expect the same to be true of word-of-mouth.

Before adapting Murray's methodology, it was necessary to confirm the assumption that levels of service attribute in a product is proportional to the perceived risk. In other words, did the levels of 'serviceness' in a product correspond to the levels of risk perceived by a potential consumer of the product? Therefore, in the first stage of the research, an initial random sample of 100 people were asked to rank the scenarios drawn from Murray's study by indicating their level of perceived risk in each of the purchase scenarios. According to their relative score in this preliminary survey, the scenarios were placed in high, medium and low risk categories, shown in Figure 1 below:

Figure 1: Purchase Scenarios		
High Risk Purchases	Medium Risk Purchases	Low Risk Purchases
Personal Income tax advice	Smoke detector/alarm	Pocket camera
Professional interior decoration advice	New car exhaust - parts and fitting	Tennis racquet
Car engine tuning service	Car interior valeting service	Small vacuum cleaner
Eye test	Meal in a fine restaurant	Barbeque set
Dental check-up	TV and video rental	Raincoat

The rankings for perceived risk corresponded exactly with the scores given in Murray's work, and therefore proved the assumption that the greater the level of service attribute in a product, the greater the perceived purchase risk.

Having ascertained the levels of perceived risk in each of the fifteen scenarios, we could then proceed with our main study into sources of pre-purchase information. Each of the fifteen scenarios was incorporated into its own quantitative questionnaire. These presented the scenario and asked the respondent to imagine they were considering making the purchase depicted. They then offered thirty potential information sources which the respondent could use to reduce their perceived risk in the purchase. These sources (listed in Figure 2) included: asking for a demonstration, thinking about previous involvement with the product, reading consumer reports, television and radio advertisements, and asking friends or family.

Figure 2: Information Sources

1. ... ask for a demonstration of the product or service ...
2. ... think about any previous involvement with similar products or services ...
3. ... try to remember what alternative your friends use ...
4. ... ask the opinion of the salesperson ...
5. ... pay attention to any magazine ads about the product or service ...
6. ... ask a member of your family or a close relative for their opinion ...
7. ... pay attention to radio commercials for the product or service ...
8. ... check any consumer reports (e.g. Which?) ...
9. ... rely on any personal experience ...
10. ... consider what a magazine article may say about the product or service ...
11. ... pay attention to newspaper ads about the product or service ...
12. ... simply go ahead and make a selection without additional information or deliberation ...
13. ... ask the opinion of a friend ...
14. ... try to recall relevant events which you can associate with this product or service ...
15. ... ask to try or sample to product or service before purchase ...
16. ... pay attention to TV commercials about the product ...
17. ... buy the first alternative I found ...
18. ... try to experience first-hand all you can about this product or service ...
19. ... see a written description of the product or service ...
20. ... read available information such as a printed brochure or pamphlet ...
21. ... ask the opinion of an employee of the firm offering the product or service such as a receptionist or delivery person ...
22. ... be ready to make a purchase selection and not worry about acquiring more information prior to buying ...
23. ... read a report written by a knowledgeable third party, such as a critic, authority in the field or product specialist ...
24. ... pay attention to what previous customers had to say about the product or service ...

In addition to the 'conventional' sources used by Murray, five new Internet sources were included as follows:

- ◆ visit a web-based chat room relating to the product or service
- ◆ email friends or work colleagues to ask their opinions on the product or service

- ◆ visit an 'unofficial' web-site relating to the product or service
- ◆ visit the product or service company's web-site
- ◆ search the Internet for information on the product or service

These Internet sources were not given any prominence over other sources.

For each scenario, respondents were presented the possible sources one by one, and were asked:

- (a) to indicate their 'likelihood to use the source', and
- (b) their 'level of confidence' in that source.

Both scores were on a scale of 1 to 7 – with 1 indicating 'most likely to use' and 'most confidence' in a particular source.

The target respondents were those who have access to all sources, including the Internet sources. It was assumed that a respondent's access to an email system would also mean that other Internet sources were also available to them. We therefore designed the fifteen questionnaires as an interactive program which was distributed as an attachment to a simple email message.

Our sampling technique was a 'snowball', with each of the fifteen questionnaires being sent to a 'distributor', together with a request to forward the email on to ten further contacts. The distributors were mainly students or professionals with access to email/Internet via their work or college. The selection of distributors was at random from the responses received from the preliminary study. Scenarios were sent to distributors at random also.

Completing the questionnaire was achieved by opening the file attachment. The program would then present the scenario with completion instructions, and then proceed through the possible information sources. For each information source two answers were recorded – one for use and one for confidence. The responses given were recorded by the program and compiled in a small answer file. Respondents were then asked to email this file to the authors.

Analysis

A total of 247 responses were received, 82 from the high risk purchase category, 99 from the medium and 66 from the low risk. Of those just over 60% were female, 70% were from the UK, and 70% were aged between 21 and 30. The data was analysed in three main ways:

- ◆ analysis of the use of information sources in pre-purchase situations, with particular focus on the relative use of Internet based sources, particularly Internet Word-of-Mouth
- ◆ analysis of the effects of perceived risk in a purchase on the use of the Information sources, again with focus on Internet sources and Internet WOM
- ◆ analysis of the confidence the consumer had in the individual information sources, any link this had with the actual use of the

source and, again, the effects that perceived risk in a purchase had on the confidence levels attributed to a source.

Various statistical tests were performed on the data ranging from paired t-tests to factor analyses. The results of these batch of tests are discussed next.

Results

Just to recap, our three main issues were:

- ◆ Do consumers use Internet sources of information as part of their pre-purchase information seeking strategy, relative to the other available sources? Which of these Internet sources are more important, and are there similarities between Internet and non-Internet Word-of-Mouth sources?
- ◆ Does the perceived risk in a purchase have an effect on this information-seeking strategy, and in particular are Internet sources affected.
- ◆ What confidence do people have in Internet sources, and how does this affect their use of a source? Again, does purchase risk affect this choice?

1. Use of Internet based sources of pre-purchase information

Looking at the mean 'use' scores for each of the thirty possible strategies/information sources, it is clear that the Internet based sources are used less than other sources. The exception is email. Therefore, we can say that Internet based sources are used, but we can immediately say that they are not as popular as non-Internet sources.

The factor analysis allowed us to begin grouping the sources. In addition to the factors identified, some additional groupings were made reflecting those proposed by Andreassen (1968) and adopted by Murray (1991). The groupings were as shown in Figure 3:

Figure 3: Mean Use Groups	
Group	Constituent Factors
Outright Purchase	Outright Purchase (eg no further information-search)
Internal Search	Internal Search/memory scan (eg previous experiences)
External Search	Friends and Family WOM sources (eg ask a close relative) Other WOM sources (eg other customers) Independent Reports (eg Which?) Market Controlled sources (eg television advertisements) Product Trial sources (eg demonstration) Other Internet sources (eg company website) Internet WOM sources (eg chatrooms)

The factor analysis results confirmed the presence of these particular groupings in our study data. The external classifications, to a large extent, reflected those identified in the work on external consumer information search by Schmidt and Spreng (1996).

Overall, the most popular sources of pre-purchase information were Word-of-Mouth from family and close friends, and the internal search sources. Again, this confirms previous findings, which ranked the use of information sources (eg Price and Feick, 1984; Feick, Price and Higie, 1986). It also supported Reingen and Kernan's (1986) research, which suggested that the strength of a relationship was directly related to its use. In this case, close friends and family were more likely to be used as information sources than other customers. Finally, it supports Herr *et al* (1991) in their suggestion that WOM sources are more important than neutral print sources, such as consumer reports.

When looking solely at the position of the Internet based sources relative to all other sources, we found that the use of the six Internet based sources was significantly less in all pairwise comparisons to all other sources.

Therefore in answer to the question:

Do consumers use the Internet as a source of pre-purchase information?

The answer is undoubtedly Yes (only 2% said that they definitely would not use all Internet sources), but that the Internet sources overall were significantly less popular than all other sources, with conventional word-of-mouth and internal search being the most popular pre-purchase strategy.

However, the objectives of this research were to study the Internet effects in more detail. Can we really say that the Internet sources are all perceived in the same way? By comparing mean use scores for each individual Internet source they can be grouped as follows:

Figure 4: Internet Groups	
Group Name	Constituent Variables
Marketer Controlled Internet sources	Company Website
Internet WOM sources	Email Chatrooms Newsgroups Unofficial websites
Independent Reports	Searching the Internet

This grouping is largely reflected the relationships found in the correlation tests.

A second set of pairwise comparisons between 'Internet WOM sources' and other sources revealed once more that 'Internet WOM sources' were used *significantly less* than other sources. The test between the 'Marketer Controlled Internet sources' and the 'Other Internet sources' (WOM plus independent searches) showed that their relative use was NOT significantly different. However, a second correlation test between the individual Internet WOM sources and 'non-Internet WOM sources' revealed a relationship between email and

these 'non-Internet WOM sources' that did not occur for the other Internet WOM sources. For this reason, email was isolated from the other Internet WOM sources and use of email was found to be significantly greater.

These tests help answer the following question:

Which Internet based information sources (marketer controlled or non-marketer controlled) are more popular in pre-purchase information sources?

There is no difference in the use of the marketer controlled and non-marketer controlled Internet sources, but the use of email is significantly greater than the use of all other Internet sources.

This shows that the acceptance of email as a communication medium is greater at this present moment than the use of other less personal Internet sources such as chatrooms. Also, for this set of potential purchases the use of marketer controlled Internet sources was low.

However, the use of email as a WOM medium is still less than the use of face-to-face WOM sources, which supports work by Lengel (1983) where media effects of WOM are discussed. Lengel argues that electronic media information is less 'rich' than face-to-face information. The immediacy of response in face-to-face compared to email conversations seems to have an effect on its use in pre-purchase information seeking behaviour.

2. Perceived Risk of purchase effects

The level of perceived purchase risk in this study was varied by the use of scenarios reflecting those used by Murray in his 1991 study. Murray's work looked at the differences between the information-seeking requirements of purchasers of good and services. His continuum reflected the level of 'serviceness' in a product, and subdivided the fifteen scenarios into three service level groups (high, medium and low serviceness). Preliminary research as part of this study confirmed that the level of 'serviceness' reflected the level of perceived risk in a purchase as suggested by Zeithaml (1986).

Primarily, this study was concerned with the relative use of the various sources in each purchase scenario, and in particular whether the use of Internet based sources varied between purchases. Again, a series of factor analyses were performed on our three risk groups to find out whether the pattern of factors revealed for the overall sample was repeated in the three risk groups.

Overall, the results of the factor analyses were largely inconclusive, although similar structures amongst the variables were identified. The validity of the factor analysis results were questionable, mainly as a result of the small sample sizes within each group.

The information sources were grouped as in the analyses on the whole sample, and a series of ANOVA tests performed to identify significant source mean differences between the groups. Overall, the WOM sources and internal search were the most used sources in all risk groups, and Internet WOM sources were least popular.

Between the risk groups, the significant differences emerged amongst the WOM sources. Both 'Friends and Family' and 'Other WOM' sources had higher mean uses amongst high and medium risk purchase than in low purchases. This reflects findings by Perry and Hamm

(1969) who stated that, as perceived risk in a purchase increases the greater the importance of personal influence.

The only other between-groups difference identified as significant was 'Sampling the product', which was more likely in medium risk than high risk groups. This can probably be explained by the fact that the products contained within the high-risk group (eg income tax advice and eye tests) are difficult to sample. This confirms the findings in Zeithaml's (1986) study which identified the intangibility effects of such service-based purchases on information-search.

No significant differences were identified for any other source grouping between the risk levels, including the Internet WOM sources.

When the means for each individual source were compared between risk groups more detail emerged.

Product trial such as 'asking for a demonstration', and 'experiencing first hand' all showed a higher use in the low risk group, again reflecting the intangible nature of products in the higher risk group. Strangely, a significantly higher score was given for relying on personal experience in the lower risk group than the higher and medium groups. This may be because the higher risk group contains mostly services. According to services theory (Zeithaml and Bitner, 1996), services such as eye tests and dental check-ups are high in credence qualities. This means that even if a service has been used before, the judgement of how well this service was delivered is still very difficult. Therefore, it may be perceived as difficult or irrelevant to use past experience to aid future purchase decisions.

WOM sources such as asking a member of the family and asking other customers showed significantly more use in the high-risk groups. However, of the Internet WOM group, only visiting an unofficial website was significantly different between the groups, with more likelihood of use in higher risk purchases than low. This was the only Internet WOM source that followed the pattern of the other WOM sources.

Therefore in answer to the following question:

Does the use of Internet based sources depend on the products and services purchased?

We can conclude that overall there is no significant difference in the use of any Internet sources between the purchase groups, except for the Internet WOM source, visiting unofficial websites. The likelihood of use for any of the Internet sources is unaffected by the purchase being considered. Therefore, the level of use of Internet sources is unaffected by purchase risk, and that the use of Internet WOM sources in different risk groups does not follow the pattern of non-Internet WOM sources.

For WOM in the non-Internet media, the evidence from this research confirms the arguments of Arndt (1967) and Lutz and Reilly (1973) that WOM is the predominant source of risk reducing information, particularly in the higher risk purchase scenario.

3. Confidence in the Information Source

The next stage of our analysis looked at the impact of confidence in the information sources. As in the analysis of mean use, the sources were initially ranked by their mean confidence

scores. Initial impressions were that most confidence was shown in the WOM sources and in internal search sources. The highest confidence was for relying on personal experience, followed by asking a member of the family, asking a friend and recalling previous involvement with the product.

The Internet sources were mostly in the bottom half of the ranked sources with chatrooms, company websites, and unofficial websites occupying the bottom three positions. Confidence in email was relatively high, and the positions of 'using newsgroups' and 'searching the Internet' were higher in confidence than their use. A factor analysis was used to establish whether there was any correlation between the confidence shown in the sources. Five factors emerged, which closely resembled those that emerged for the mean use scores.

By combining the factor analysis results and the previously used groups the following confidence groups were proposed:

Figure 5: Mean Confidence Groupings	
Group	Constituent Factors
Outright Purchase	Outright Purchase (eg no further information-search)
Internal Search	Internal Search/memory scan (eg previous experiences)
External Search	WOM sources (eg other customers, friends, family) Independent Reports (eg Which?) Market Controlled sources (eg television advertisements) Product Trial sources (eg demonstration) Other Internet sources (eg company website) Internet WOM sources (eg chatrooms)

For the confidence groups, the means for the variables originally within Friends and Family WOM and the Other WOM, were combined in to one group, known simply as WOM sources. The mean confidence scores for each group showed again that the highest confidence was shown in WOM sources, Internal search, and first hand sampling of the product. Confidence was lowest in the Internet sources. When these scores were tested for significance, the combined Internet grouping's confidence score was significantly lower than all other sources except for 'outright purchase'.

A similar result occurred when the 'Internet WOM' (chatrooms, newsgroups, and unofficial websites) were compared with other sources. The confidence shown in 'Internet WOM' was significantly lower than all other sources.

The final set of pairwise comparisons were those between email and other WOM sources, both Internet and non-Internet. These analyses supported the notion that email was in fact perceived differently to other Internet WOM sources with a score confidence significantly higher than that for the other Internet WOM sources. When compared with the non-Internet WOM sources the confidence in the source was still significantly less.

In answer to the following question:

How much confidence do consumers have in Internet based sources relative to other information sources?

We can conclude that consumers have significantly less confidence in Internet sources of pre-purchase information overall. We can also conclude that confidence in Internet WOM sources is significantly lower than in other WOM sources. The caveat here is that the confidence in email, although significantly lower than other WOM sources, held significantly greater levels of confidence as a source than 'outright purchase' and 'independent reports'. There was no significant difference with 'sampling the product'.

The next test was to attempt to find a link between confidence in a particular source and its actual use. For this, a series of correlations were performed between the use and confidence figures for each source. All sources were found to exhibit a significant relationship between use and confidence.

The strongest correlations were found amongst the variables relating to outright purchase, and show that to buy a product outright needs high levels of confidence in the strategy confidence. The lowest correlations were in Internet sources, particularly with company websites. It seems as though use of a company website and confidence in that source is not so strongly linked (although still significant).

The conclusion from these correlations is that, although there is a significant link between confidence and use of a particular source, this relationship is relatively weak in the Internet sources. Studies into strength of tie by Reingen and Brown (1987) and others point towards a cause and effect relationship whereby use of a source is linked to confidence in that source. Because confidence in Internet sources is relatively low, this would explain their relative low adoption as a pre-purchase strategy.

Finally, a test was performed to identify any perceived risk in purchase factors that may affect confidence levels in each source. The ANOVA revealed that, amongst the source groupings, both Internet WOM and non-Internet WOM sources were significantly different between risk levels. Confidence in non-Internet WOM sources was significantly higher amongst the medium risk group than the low risk group, while confidence in the Internet WOM sources was significantly higher for the high risk purchase than for the low risk purchase.

In looking at the significant differences in confidence within the individual variables, the same variables emerged as significant as in the tests on source use. Again, the confidence shown in personal experience was significantly greater in the lower risk groups. This supported the previous finding in the use of personal experience, and showed that past experience in the more service-orientated products high in credence qualities, did not necessarily give confidence and reduce perceived risk when considering future purchases. Also, greater confidence was shown in the option of buying the first alternative found in high-risk purchases than low risk. To buy the first alternative found, although relatively a less preferred pre-purchase strategy, the consumer must have a high level of confidence where the risks are higher.

Within the WOM group, confidence in the 'asking another customer' source was higher in the medium risk category, then the low, and finally the high risk category. A possible explanation here is that for higher risk purchases, the consumer will be more confident in closer sources of WOM, such as from relatives, than WOM from relative strangers. As the risk in a purchase decreases, the confidence in other customers' information increases. This could be because, for a purchase such as a camera, the other customer's views are more likely to be understood and easily related to than when another customer gives a view on a less objective offering such as an eye test, where the experiences of others may have little or no impact on the consumer's own experience.

There are significant differences in two of the Internet WOM sources (newsgroups and unofficial websites), where confidence is higher in high risk purchase situations. A possible explanation of this could be that, as in the use analyses, significantly more people used the unofficial websites in high purchase situations, and therefore the cause and effect of more confidence leading to more use and vice-versa could be a factor.

What has emerged overall from this analysis is that the use of a source and confidence in that source are linked.

Conclusion

The key findings of this research can be summarised as follows.

- ◆ Consumers do use the Internet as a source of pre-purchase information.
- ◆ Word-of-Mouth sources were the most popular of the potential information sources, particularly in higher risk purchase situations.
- ◆ Internet sources were less popular than other sources.
- ◆ Internet WOM sources were less popular than other WOM sources.
- ◆ Email was used significantly more than other Internet sources.
- ◆ Email was used less than other WOM sources.
- ◆ The use of WOM increased as perceived risk in a purchase increased.
- ◆ There was no difference in use of Internet WOM sources for different risk purchases.
- ◆ Confidence in a source was linked to its use.
- ◆ This link was stronger for internal search.
- ◆ The link was, although significant, weaker in Internet WOM sources.
- ◆ Confidence was highest in conventional WOM sources such as asking friends, family and other customers.
- ◆ Confidence was lowest in the Internet sources.
- ◆ Confidence in email was higher than the other Internet sources.
- ◆ Confidence in company website information was less than its actual use suggests.
- ◆ Confidence in Internet WOM was higher in high-risk purchases.
- ◆ Confidence in conventional WOM was higher in high-risk situations.

This study was a snapshot of the use and confidence shown in Internet based sources of information by consumers in a number of pre-purchase scenarios.

It is clear that, although people use Internet sources as a whole, there are significant differences between both the use of these sources and the confidence shown in them. The level of risk in a purchase, although significant for some information sources, was less of a factor than expected. This could be due to the purchase scenarios used and may differ in other situations.

The link between confidence in a source and its use is clearly visible, and this would explain why consumers use Internet based sources less. The Internet has a great advantage over other sources in the sheer quantity of information, but what is of concern to respondents is the integrity and quality of the information. This supports the argument proposed by Kozinets (1999) which identified a series of levels of online interaction. The most basic level is 'rapid surfing activity' and use of email. From this, as more time is spent online, use of online communities increases. Sources such as email, where people know the recipient and trust their replies are basically an extension of the face-to-face interactions between friends, colleagues and family members. Effectively, email is just a conduit to conventional WOM communication, with the technology itself being less important to the consumer. The newsgroups and chatrooms are equivalent to the discussions with strangers in, for instance, a pub or other similar environment, where the discussion would be less secure, and less safe. The evidence from this study is that the use of these virtual communities is not particularly high.

Further discussions with some of the respondents revealed that they would not use these chatrooms and newsgroups because they were populated by 'geeks' and other 'undesirables'. The use of these forums was limited, because the respondents felt less comfortable in the environment than they would in a face-to-face discussion. The relative anonymity of the Internet environment, while being of benefit to some, certainly lessens the trust and confidence in the source. Again, this supports the arguments of Kozinets who identifies characteristics amongst users of virtual communities which were linked to their depth of involvement. Groups tend to have 'cultures', and heavy users have a passion about the subject under discussion. Social interaction is also important.

The increased use of these chatrooms and newsgroups and the growth in WOM on the Internet depends to a large extent in consumers trusting the people they are conversing with, and feeling comfortable in the environment. Many of these chatrooms are quite unwelcoming and feel less 'official' and less safe to use. This perception is putting many people off, but according to Kozinets, familiarity with the environment leads to increased participation.

That is not to say that large companies should set up their own chatrooms (many are), as this may again lessen the trust factor. Consumers may feel that they are being watched. A balance must be made between the confidence that people can give their opinions on products freely, while at the same time knowing that they are in a safe environment where they in turn can trust what others say to them. In this respect, WOM is no different on the Internet than it is in other environments, apart from seeing the 'whites of the other participants' eyes' – currently a barrier to participation.

To conclude, Kozinets (1999) in his excellent in-depth paper on virtual communities states that, although virtual communities are guaranteed to grow, they are unlikely to replace physical encounters, or information from traditional media. Instead, he argues, they are likely to supplement social and consumption behaviour. The quantitative findings of this particular study certainly supports that particular notion at this point in time.

Recommendations

As previously stated, this research was a snapshot of the Internet WOM situation in the summer of 1999. There is no doubt, given the rate of change in Internet use and technology advances, that this situation will change dramatically throughout the next few years. The Internet looks set to become more user friendly with the introduction of Digital TV technology, and this opening up of the Internet user base will have a potentially significant impact on the growth of virtual communities and flows of information within these communities. Therefore, given the rapid pace of change and growth in the Internet, the main recommendation would be to repeat the research at regular intervals. Trends in the growth of, and acceptance of virtual communities and virtual WOM would emerge. Also of use would be a study using a wider range of purchases. A clearer picture would emerge if the number of scenarios increased, but this would require more resources.

A repeat of the survey in the population as a whole, rather than amongst those with access to email, could reveal different results. With the growth of cyber-café's such as *EasyEverything*, access to the Internet is now practically open to all. Add to this the growth in Digital TV, and the population of potential respondents is much wider. Analysis by geographic and demographic variables would then be possible.

The study confirmed the predominance of word-of-mouth sources particularly for higher risk purchases suggested in past studies (eg Feick and Price, 1984), although overall use of Internet based information was significantly lower than for conventional sources. However, significantly more use was made of email than for the other word-of-mouth sources such as newsgroups. This suggests that email is more acceptable as a communication medium than the other Internet sources, but confirms Lengel's (1983) suggestion that electronic media information is less rich and spontaneous than face-to-face conversation.

We also found that people were significantly less confident in the Internet sources than they were in other sources – and this was reflected in actual use. This was especially true of the word-of-mouth sources such as newsgroups and chatrooms, although confidence in email as a source was much higher. We concluded that this confirmed the existence of a hierarchy of online interaction as proposed by Kozinets (1999). Significantly more respondents had reached the most basic level, represented by 'rapid surfing activity' and email use, than the next levels, browsing and then participating in newsgroups and chatrooms. The view was that, although the Internet has a great advantage in the sheer quantity of information, the major concern, and barrier to use, was the integrity and quality of this information. To users of email and web-surfers, the sources were clearer and therefore engendered higher levels of trust than the newsgroups, chatrooms, and 'unofficial' websites.

This study provided a benchmark snapshot of people's attitudes to the Internet as an information source alongside conventional sources. As people become more comfortable with the technology and access increases through, for example Digital television, a different picture will emerge within a very short period of time.

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