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A primer for the use of internet marketing research tools: The value of usability studies

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Abstract

Website strategy has evolved from a simple web presence to ensuring consumer purchases. These trends make it imperative for marketing researchers to understand the online consumer experience in terms of both the quantity and the quality of website visits. This paper reviews several commonly used online marketing research techniques, suggesting that many inadequately measure the quality of a user's website experience. More recently developed methods found within the marketing literature that rectify the shortcomings in online marketing research are identified, and usability studies are singled out as an effective tool for creating a more complete assessment of online consumer activity.

Keywords: marketing research, qualitative techniques, usability study, internet research, online consumer behaviour

Introduction

The World Wide Web is dramatically reshaping marketing practices in the USA. For example, marketers may now capture extremely fragmented — even granular — markets in America by building personalised relationships with individual consumers.¹ In using the internet to foster such close associations, marketers can mass-customise products and services, communicate personalised messages across a wide audience and track individual consumer behaviour even for an infinitely large target market.² These opportunities allow marketers more effectively to implement and manage large-scale relationship marketing efforts to an extent not seen before.³

Specifically, one notable technological impact on marketing practice is in the field of marketing research. Marketing research is the process of designing, gathering, analysing and reporting information that may be used to solve a specific marketing problem. Hence, marketing researchers use specific analytic techniques to solve an identified problem, such as poor website performance. (This term is differentiated from market research, in which businesses conduct general studies to understand the needs, wants and desires of the marketplace and specific target markets.) One way that the World Wide Web has changed marketing research is that existing research techniques, such as surveys, focus groups and conjoint analysis, are shifting online because of reductions in cost and time. In addition, the increasing number of consumers using the internet for communication, information and consumption requires new methods of tracking consumer behaviour. Many online activities cannot be monitored

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successfully with traditional marketing research tools designed for an offline environment, so new marketing research techniques are being developed specifically to measure online consumer behaviour.⁴

In this rapidly changing environment, marketers are dissatisfied with available measures because they fail to examine whether internet-based communication is achieving its desired effect.⁵ This paper reviews several early marketing research techniques created to measure online consumer behaviour. An analysis of these approaches suggests that many commonly accepted internet marketing research practices need to be supplemented by usability studies that provide more in-depth insight on the consumer experience. This study identifies several research methods that attempt to rectify the shortcomings in online marketing research, highlighting the value of employing usability studies in particular to assess the quality of a user's experience when interacting with a website.

Online consumer behaviour trends

The internet's changing role

Since the internet's inception in 1991, there has been a steady increase in the number of websites available. By the mid-1990s, many firms in the USA considered it imperative to have a web presence. In the early years of internet growth, users sought out content characterised by novelty and entertainment. Firms' design strategies focused on attracting visitors by incorporating all the latest 'bells and whistles'. But as more websites appeared, companies could no longer attract viewers just by having a web presence; consumers started seeking more meaningful and personalised interactions via the web, which translated into the need for richer content development.⁶

Accordingly, firms realised that they needed to develop competitive strategies — such as traffic plans — to attract consumers and to involve them up to the point of purchase. Design trends have shifted towards focusing more on simplicity and effective communication. Marketers now argue in favour of creating web pages according to the 'hierarchy of effects' communication model (awareness, interest, desire, action) in order to motivate purchase.⁷

In addition to changing design priorities, the average internet user has also changed over time. Internet browsers have evolved from being just visitors, who at best were potential targets for online advertising, to active online buyers. Indicative of this, internet-based expenditure doubled from 1999 to 2000 alone; by 2001, more than 50 per cent of all internet users had shopped online at least once.⁸

Need for 'richer data'

The rapid proliferation of websites, shifts in website design and changes in the typical online consumer have raised the stakes for companies that compete in the e-commerce marketplace. In the 1990s banner advertising (a small billboard-like graphic that can transfer users to another site) emerged as a dominant form of online advertising. Banner advertising accounted for more than half of all online advertising revenue in 2000.⁹

Meanwhile, growth in other types of online advertising is increasing

The internet context

**Website
measurement
inadequacies**

web clutter. Online advertising now encompasses sponsorships (links to a cooperating firm's homepage), which currently account for almost 30 per cent of online advertising revenue.¹⁰ In addition, yellow pages, classified advertising (for example, www.yahoo.com), and movie-like ads are emerging, including interstitials, superstitials and mini-movies (such as www.adpepper.com). As a result, click-through rates on banner advertisements in particular have fallen from 15–25 per cent in 1997 to less than 0.3 per cent in 2002, despite the fact that the average banner ad size has steadily increased over time.¹¹ Hence, companies can no longer depend on visitors generated by banner advertisements, sponsorships or even search engines to drive their website strategies. Rather, firms need to ensure potential customers are visiting, purchasing and returning, all while being completely satisfied with their experiences. This translates into web users make voluntary and conscious choices to visit and browse particular sites as an outcome of firm-led design and content creation.

As discussed so far, to understand consumer experiences better firms must go beyond the 'number of clicks' (ie quantity) and focus instead on 'how consumers click' (ie quality) in an online environment. Companies are finding it increasingly difficult to rely on results obtained through most widespread online marketing research methods, such as clickstream data. Firms are finding that many measures (eg hits) are inadequate because they primarily test cost-effectiveness (ie cost per click) and fail to assess whether the given communication achieved its desired effect.¹² Many of the earlier-developed online marketing research techniques do little to help marketers understand the nature of a user's website interaction. Moreover, some measures produce results that are misleading (as discussed below). Thus, new research approaches should delve deeper into the online experience and these types of techniques are beginning to gain ground.

Online marketing research: Early methods

Struse¹³ predicts that the internet, globalisation and one-to-one marketing will be the three most significant factors shaping the field of marketing research in the years to come. When examining these developments in the light of relationship marketing efforts and consumer preferences for more meaningful web experiences, one must keep in mind that consumers increasingly place greater value on product and service personalisation in the e-commerce context. Competitive firms must improve their website interfaces and content to attract visitors, involve them in the communication and motivate them to purchase. Interestingly, as online marketing research increases in importance, the lines blur between electronic direct marketing and marketing research. For example, as a product is offered via a pop-up advertisement, the marketing researcher can monitor the effectiveness of the advertising design in real time. Furthermore, corporate marketing research departments are becoming more decentralised, suggesting that online marketing research will become extremely important in supporting website design.

Common techniques

Many marketing research techniques have been developed especially for the internet, several of which have become widely adopted. The more commonly used measures are presented herein with an overview of their strengths and weaknesses — a discussion which stresses that most of the early online marketing research techniques inadequately measure the quality of users' experiences. Hence, marketers need to adopt methods that more adequately capture such data, which the authors suggest are usability studies.

Hits are considered one of the earliest techniques developed to track online consumer behaviour.¹⁴ Hits capture the number of times people access a page or its graphics in a specified period of time. This measure also includes the number of records a search engine calls up for a keyword search. Although hits are valued for their simplicity, they encompass *any* element of a page, making them a potentially biased measure. For example, if a firm's webpage has five graphics, the page would receive six hits each time it is accessed — one for the page and five for its graphics. Hence, the number of hits on a website can be misleading. Typically the number of people visiting a website is a fraction of the hits registered. Additionally, websites using multiple frames in a single page have inflated hits figures. As reported in *Marketing News*,¹⁵ a University of Southern California study found that when only hits were measured, the number of visits was underestimated by 39 per cent compared to the information gathered when assessing the number of log-ins. The average number of pages seen was overestimated by 64 per cent and the time a visitor spent at a given location was overestimated by 79 per cent. In addition, hits fail to reveal the effectiveness of an online advertisement, because they do not track navigation after a visitor opens a particular page. Furthermore, hits do not capture the demographics of the user population, do little to assess the quality of the user's online experience and communicate nothing about purchase decisions.

Clickstream data represent the path a visitor takes when navigating a website. They register what pages customers visit and in what order.¹⁶ Clickstream figures measure the succession of mouse clicks each visitor makes. This analysis tracks how many pages are shown to the user, how long it takes pages to load, how often the user hits the browser's back/stop button and how much data are transmitted before a user moves on to another page. Marketing researchers use clickstream data to quantify the user's behaviour. These data keep track of the particular pages viewed, what the user places in or removes from a shopping cart and what items are purchased. Hence, clickstream can analyse path navigation, shopping cart activity, entry and exit point behaviours and search term or keyword usage.¹⁷

Several other measures have been developed using the mouse 'click' as the basis for data collection. *Click-through* measures how many visitors select a banner ad and visit the subsequent page. The *click rate* captures the number of times an online banner ad is clicked and divides it by number of times the ad is posted. For example, if a banner ad on ESPN.com pops up in front of a visitor 100 times and is selected once,

Commonly-used measures on the web

Measures capture
'quantity' not
'quality'

this translates into a 1 per cent click rate. Clickstream, click-through and click-rate data are widely used measures, and yet these measures do not reveal information about demographics and purchasing decisions.

Some marketers suggest that clickstream data or related measures rarely correlate with purchase rates.¹⁸ Hence, the rate of converting a viewer into a purchaser should be computed because it communicates how many people were actually moved to purchase. The *conversion rate* takes the number of online advertisement viewers and divides it by the number of product purchasers. Hence, the conversion rate captures awareness to purchase following the AIDA framework. But this measure merely yields a number and does little to investigate the factors influencing someone to move beyond exposure to actual purchase.

Impressions represent the number of times an advertising banner is seen, and these are usually tracked via server log files. The current definition of impressions is any instance of online advertisements being displayed, and as such is defined as an agreement between the buyer and seller for online advertising space.¹⁹ Most web advertising is sold based on the number of impressions expected (ie CPMs). Despite its prevalence as a tool for pricing online advertising, there is no industry standard for counting impressions. Since a single web page can contain multiple ads, a site might register more impressions per unit of time than web pages viewed per unit of time. In addition, impressions may be inflated due to the problem of cached pages, since cached data can be refreshed and then counted as a new impression.

Visits measure the total number of people visiting a website in a specified period of time.²⁰ This records the visitor's server name, IP address, type of web browser and visit length. In addition, it can track where visitors come from and their flow through a website (ie clickstream), and note the links through which they leave the site. The primary concern with a visits measure is that if someone visits a web page multiple times during the given period, each one is counted as a separate visitor, potentially biasing estimates. Such duplication can be avoided by using cookie file or IP address information. Hence, the term *unique visitors* is the number of unduplicated people visiting a site over a particular time period. Despite being able to extract unique visitors, these measures still fail to yield information about user demographics and purchasing decisions.

Compared to hits, *stickiness* is meant to measure website attractiveness. Stickiness is defined as the total amount of time a customer spends on a single site. Stickiness is often reported as the average minutes per month visitors spend at a site; sometimes stickiness is measured in terms of the average number of page views. The rationale for stickiness is that the time spent on the site is directly proportional to a website's appeal. But this measure may also be misleading, as a consumer might spend a lot of time on a site because he/she cannot figure out how the site is arranged or how to discover his/her desired information.

Registration is a way in which to track user demographics. In addition, this method can create data for a customer database that can be used to generate interface/content personalisation and facilitate purchase (such as

Amazon.com's one-click shopping feature). Registration provides free access to content as a reward for filling out a form. An inherent problem with registration is that consumers tend to forget the various user names and passwords that they use across websites. Consumers may re-register using different information or log in under a borrowed user name and password. In addition, some potential customers may prefer not to reveal demographic information or be turned off by the request. Thus, the information gathered may potentially overestimate or underestimate the actual number of visitors.

Web surveys are another way of collecting online consumer behaviour data. This approach differs from many of the methods reported above because respondents are solicited for their participation as opposed to the data having been covertly obtained from log and system files. Web surveys, similar to traditional mail survey research, are usually posted on a server and individual e-mails are sent to consumers in the sampling frame urging them to take the survey.²¹ Online surveys can reach a limitless number of respondents within a few hours at a significantly lower cost than the traditional mail approach. These are significant advantages in obtaining information about a product or service. But the data rely primarily on recall of past experience, hence the web survey does not take advantage of the features of the medium because it fails to capture consumer behaviour as it occurs in real time.

Some firms are beginning to use pop-up windows to circumvent the limitations of web surveys and capture consumer behaviour in real time.²² But *pop-up web surveys* have several drawbacks. Consumers often confuse these with advertising, and, more importantly, they may disrupt the purchasing process. In addition, pop-ups tend to be small, thereby limiting the number of questions that can be asked. Thus, pop-up surveys may annoy consumers, impede response rates and generate incomplete data.

From the above, one can derive that many of the widely adopted online marketing research techniques do not provide a complete picture of online consumer behaviour. Hence, there is a need to identify other methods that will take a closer look at the online consumer experience. The following discussion highlights several approaches that attempt to provide richer data, with special emphasis given to usability studies.

Online marketing research: More recent developments

Marketers currently advocate supplementing existing techniques with methods that more adequately reflect the online consumer experience.²³ As discussed above, figures yielded by the earlier measures may appear impressive but may not necessarily be meaningful, and many of the widely adopted online marketing research measurement techniques are potentially misleading. Accordingly, many researchers support using site-based research methods that are both quantitative and qualitative.²⁴ Qualitative online marketing research techniques can be used to supplement quantitative techniques. Also, these are usually less expensive than more traditional marketing research approaches and can provide more timely information.

Need for 'richer' data

Ethnography on the internet

Netnography

Although direct marketers have used this technique since the late 1990s, Kozinets²⁵ recently introduced *netnography* to academic literature on marketing research. This methodology adapts traditional anthropological ethnographic research techniques to the study of cultures and communities emerging in computer-mediated communications. Hence, netnography is the study of cyberculture, which is defined as ‘the shared patterns of behaviour and their associated symbolic meanings expressed through computer mediated communications’.²⁶ Netnographic data include research field notes and cultural artefacts, such as newsgroup postings, e-mails and digital photographs.

The primary advantage of this technique is ease: it is faster, simpler and less expensive than traditional ethnographic techniques, and behaviour that is specific to the medium is obtained. Furthermore, it captures data in a relatively unobtrusive and natural manner — from home using a computer. The field has yet to establish guidelines on how specifically to collect netnographic data and judge their validity and reliability.

The primary limitation of the netnographic method is its representativeness; it is a technique developed primarily for studying cyberculture and/or virtual communities. These types of cultures/communities are identified as groups that have members familiar with one another, derive their identity from group membership, utilise a group-specific language and construct in/out-group boundaries.²⁷ Kozinets,²⁸ through his experience in administering this technique, identified three key issues of implementation. First, there are the pragmatic issues of time and preparation. Second, similar to traditional ethnographic techniques, the researcher must understand the appropriate cultural entrée. He/she should spend significant time visiting newsgroups, developing relationships and becoming an accepted community member. Third, there is uncertainty about the nature of respondents and their interactions, raising questions about the authenticity of the data. For example, respondents may fabricate an online community persona. Despite its limitations, netnography is a useful online market research technique that delves deeper into the online consumer experience, yet it is most appropriate for analysing cultural data.

Surveys

Various marketing research consulting firms have developed their own survey measures for assessing website effectiveness. Unfortunately, most of these techniques are proprietary and information about these measures is not available to firms unless they become clients. There are a few instruments on the market, WebQualTM being among the first, that have reported their contents in the academic marketing journals.²⁹ The WebQual questionnaire was constructed from consumer perceptions of website quality, interviews with website designers and an analysis of a Fortune 500 company’s criteria for determining a website’s quality. The measure was tested for validity and reliability, using two separate student samples. The remaining items represent 12 components of website

WebQual™: A scale for measuring website quality

quality: informational fit-to-task, interactivity, trust, response time, design, intuitiveness, visual appearance, innovativeness, flow, integrated communications, business process relationship and substitutability. WebQual's scale items can be found at www.webqual.net/pages/255745/index.html.

Other survey instruments, similar to WebQual, have been published in the academic marketing journals. These measures include an attitude towards a website scale, a perceived website quality scale and an e-loyalty scale. Chen and Wells' attitude towards a website scale consists of six items.³⁰ While student samples as well as people from industry were used to develop this scale, its small number of specific items limits its application to a narrow domain. Aladwani and Palvia's website quality scale consists of 25 items that encompass four constructs: specific content, content quality, appearance and technical quality.³¹ They also used student samples for scale development. Srinivasan *et al.*'s e-loyalty scale measures customer loyalty for a particular website.³² Thus it does not specifically serve the purpose of measuring website effectiveness, although it does indirectly communicate such information. For any of the above-mentioned scales, a marketer could hire a consulting firm (or develop similar measures) to run the items on the target audience and determine how well the firm's website measures up to some predetermined objective standard. It should be noted that there are also academic researchers who identify the important content categories for business websites, but they fail to suggest ways of measuring consumer perceptions of these dimensions.³³

Survey technique

The strengths of survey techniques, such as those reported above, lie in statistical validity and reliability. Specifically, the authors of WebQual claim that, although there several survey tools to assess website effectiveness on the market, their instrument is the first and the only measure to assess effectiveness from the visitor's perspective.³⁴ One drawback to the scales mentioned above is that most of the measures were developed using college student samples, potentially limiting their applicability to a wider audience. Furthermore, these measures have other inherent drawbacks. As surveys, they rely on respondent recall. If a firm would like to assess consumers' opinions in real time, via a pop-up survey, some of the measures are quite lengthy. For example, 12 components of website quality, each with multiple items for assessment, have to be answered for WebQual. In addition, these scales are global measures of website quality; they do not assess or diagnose particular website elements that might be problematic for consumers. If a firm scored low on one dimension of the scale, such as design, it would be difficult for a marketing researcher to locate the design flaws. As such, it would be hard to give specific recommendations for design improvement from the data. Because of this, scales like WebQual seem best suited for comparing consumers' overall perceptions of competing websites, as opposed to addressing problems with the design of an individual website.

Corporations often fail in converting clicks into purchases. It is thus necessary for marketers to go beyond attracting customers to their website; they need to know the critical factors influencing consumer

purchase. For example, almost 70 per cent of all Amazon.com's sales are from repeat customers,³⁵ suggesting why website quality should be monitored and constantly improved. Lynch has identified site quality, affect and trust as three of the most important factors that drive consumers' purchase and repeat purchase intentions.³⁶ Wolfenbarger and Gilly singled out website design, fulfilment/reliability, privacy/security and customer service as strong predictors of customer satisfaction and favourable attitudes towards a website.³⁷

The next section addresses how usability studies can be leveraged to understand consumer website perceptions, data valuable in improving website design.

Usability studies

Traditionally, usability studies have tested the suitability or potential success of a product or system design by analysing the experiences of first-time users (ie those who have never visited the website before), who then form opinions from that initial contact. The rationale is that if their experiences are unsatisfactory, it is unlikely they will use the product again, much less purchase it outright. Usability studies examine consumers' actual usage of a product. *Usability studies*, the authors suggest, are a useful technique for measuring the quality of a consumer's experience when interacting with a website.

Capturing consumer experiences

Marketers can use usability studies to learn about consumer experiences for improving website design and compare a firm's website against its competitors'. Any company wishing to conduct these studies can establish usability labs, where a panel of consumers is observed while browsing a website and discussing their perceptions and experiences. This arrangement is similar to Gillette's research facility, where a panel of consumers tries various manufacturers' razors and provides feedback on their perceptions of quality for each.³⁸ Gillette gains a better understanding of its own products as well as their competitors'.

The process of conducting a usability study

The primary goal of usability studies is to improve product or service usability. More specifically, in recent years usability studies have increasingly aided in improving software so that target audiences have less difficulty with a final product.³⁹ Observing how people interact with a given software package enables firms to improve product design, thereby enhancing user experience and improving commercial viability. Thus, usability study results in the given context can assist webpage designers in arranging and presenting information to the user in a clear and straightforward format. The essence of the technique is to watch target market consumers use a website in real time. Hence, the method is especially valuable when users struggle at particular points within a website. Observing these struggles closely allows the researcher to discover flaws in existing design and generate alternative solutions for improvement. Study data can also help a firm learn about competitors' websites; information from such a focus can be incorporated into its own designs to make improvements.

Usability studies assess website quality by examining three core elements: comprehension, which includes ease of learning, ease of use and memorability; navigability, which encompasses the ability to move through the various layers of a website smoothly, error frequency and error severity; and involvement, which captures the site's ability to engage the consumer and provide information that compels user interest and retention and consumers' overall subjective satisfaction.⁴⁰ A trained specialist (or team of specialists) usually administers the study. The usability administrator assists in planning and administering the test — a role similar to that of a focus group moderator. The administrator interacts with the user while observing his/her behaviour during the experience.

Data collection

Implementing a usability study consists of six steps: planning the project's scope; recruiting participants; developing scenarios; conducting the test; analysing the data; and drawing conclusions from the results.⁴¹ Planning the project's scope involves determining what needs to be tested. To do so, the administrator or research team identifies a firm's specific concerns, goals and objectives related to its website strategy. For example, a firm may find its site has a high click rate but a low conversion rate. This suggests a design problem, but provides little direction on how to address it. The firm can have its marketing research department conduct a usability study to uncover particular website areas in which consumers become bogged down in the design.

Another aspect of usability studies includes identifying the appropriate sample. Data can be collected through individual interviews or focus group. The sample size can be as small as one or as large as 12 — eight to ten participants usually generate ample data. The administrator or research team defines acceptable ranges for demographics, psychographics and behaviour patterns for the participants. Participants are recruited on the basis of a brief written questionnaire, referred to as the respondent screener. Once the sample is recruited, the next step involves developing different scenarios which are presented to the consumer for evaluation, and determining the budget and location for conducting the test.

Nielsen argues that a general rule of thumb in budget considerations is to take 10 per cent of the cost allotted to product design (ie the website) and devote it to usability testing.⁴² But the true cost can vary, depending on the specifics of the project. Table 1 presents the time and cost

Table 1: A time and cost comparison of various internet marketing research tools

Technique	Time to complete study	Cost of study
Web metrics*	Ongoing	\$250/month for full set of services
Netnography	3 weeks–1 year	\$40,000–\$75,000
Web survey	2 weeks–15 weeks	\$3,000–\$5,000
Usability	2 days–4 days	\$1,000–\$27,000

Note: Time and cost estimates are based on hiring a professional marketing research firm to conduct the study. These are average figures that can vary based on the idiosyncrasies of a particular study.

*Web metrics is a general term used to describe those marketing research techniques that quantitatively capture website usage, such as hits, clicks, impressions, visits and stickiness.

expenditures necessary to complete a professional-quality usability study. The table also shows similar figures for those techniques discussed above.

A key usability study feature is that consumer interviews (given as they use the product/system) are done according to a carefully structured protocol.⁴³ The protocols are developed by the test administrator or research team and involve tasks the participant is instructed to accomplish during the session; each protocol is pre-tested and refined before it is administered. The instructions for task completion tend to be vague, since the researcher is interested in understanding how the task is completed by each respondent.

During test administration, the facilitator instructs the participant to complete a task, asking him/her to use the 'think aloud' protocol as he/she proceeds.⁴⁴ In addition, the researcher can ask the respondent for his/her opinion on selected aspects of the website. These questions are usually open-ended and probe for subjective reactions and concerns. The test sessions are at least audio-taped, with an increasing number being videotaped. These recordings provide an opportunity for multiple observations of participants. In addition, a trained team of observers may watch the test, listen to the participants and take notes. After completing the interview, respondents are debriefed.

Usability data analysis

Usability study data are primarily behavioural and take two forms. First, the approaches (or paths) participants take in trying to solve a given problem provide insight. Results are analysed not in terms of whether the respondent accomplished a task successfully, but in terms of identifying problems the respondent encountered while using the website. Failure and discovery both illustrate the average user's experience. (The test administrator should never correct or assist a respondent in his/her attempts to solve the task.) Log and system files can reveal emerging clickstream patterns and highlight time needed to accomplish the task. Observations of recorded behaviour combined with the log/system file data indicate what in particular is amiss with a website's design.

Interpreting the data

Second, respondents' thoughts and opinions have been captured via the 'think aloud' protocol and open-ended questions asked while the participant is actually engaged. These data tend to be richer than those obtained through focus groups or in-depth interviews, as the usability studies are based on actual behaviour, as opposed to intentional (or recall) data. The verbal data can be assessed by any standard method of protocol analysis for in-depth interviews or focus groups (see, for example, Wang⁴⁵).

These forms of data can be combined to identify problems with website design and possible corrective measures. This involves first compiling the data across all participants. Problems are listed and sorted by frequency, severity and priority. The research team brainstorms solutions that can be implemented via improved website design. If necessary, website designers are consulted for technical solutions. Finally, the redesign is implemented and tested to ensure improved usability within the target market.

Discussion and conclusions

Usability studies are an important tool for assessing the quality of a consumer's website experience. Because there is no industry standard for website design, organisation or features, most pages are based on a combination of visual appeal and functionality. There are multiple options and possible paths taken to complete a website purchase — some of which may not be planned or obvious to the designers. Poor organisation and structure can cause shopping cart abandonment, cognitive overload due to complex navigation, decreased sales, diminishing repeat visits and reduced firm credibility. In fact, analysts estimate that between \$3bn and \$19bn in sales are lost each year because of poor online customer experiences.⁴⁶ Over 65 per cent of consumers abandon their shopping carts during a website visit,⁴⁷ which is indicative of inadequate webpage design; Nielsen argues that e-commerce firms can double their sales by making their sites easier to use.⁴⁸

Usability research provides a deeper understanding of consumer needs and their interactions on an individual site. Compared to web surveys, such as WebQual, usability studies can be tailored to collect relevant information for any individual organisation in real time. The data can be used to pinpoint website design problems and give specific recommendations for improvement. Thus, usability studies serve several functions for a firm. They can be used to test a website at different stages in the design cycle; compare alternative page designs to determine which is optimal for the target market; and verify a firm is meeting the strategic goals set for its website.

Several other advantages exist when utilising such an approach. Most widespread online marketing research methods do not explicitly seek participant consent. Data are collected rather covertly via log and system files which are automatically coded when a visitor browses a site. Explicit consent is obtained from each participant involved in a usability study. Moreover, several of the commonly used online research techniques generate potentially misleading results. Well-administered usability studies generate more accurate and meaningful data that can be easily validated via member checks.

The marketing literature shows that the effort that a person expends in reaching a goal is directly related to the satisfaction he/she experiences upon its attainment.⁴⁹ The degree to which customers are satisfied with a product or service determines whether they will make additional purchases or make recommendations to others. This explains the value of perceived customer satisfaction. The quality of the customer experience often determines a product or service's success. Therefore, it is vital that initial website experiences be satisfactory to generate return visits and purchases. Many mainstream online marketing research techniques, which utilise system log file analysis (identifying how many consumers visit a site, where they went and for how long), provide useful but limited information on website usage. They cannot individually assess the quality of a user's website experience. It is better to combine these approaches with usability studies to develop a deeper understanding of web-based consumer behaviour, directly measure website performance, gain detailed

Understanding the consumer better

feedback on a website's functionality and provide a comparison with competitors' sites.

References

1. Zinkhan, G. M. (2002) 'Relationship marketing: Theory and implementation', *Journal of Market-Focused Management*, Vol. 5, No. 2, pp. 83–89.
2. Peppers, D. and Rogers, M. (1993) *The One To One Future: Building Relationships One Customer At A Time*, Doubleday, New York.
3. Craig, C. S. and Douglas, S. P. (2001) 'Conducting international marketing research in the twenty-first century', *International Marketing Review*, Vol. 18, No. 1, pp. 80–90.
4. Catterall, M. and Maclaran, P. (2002) 'Researching consumers in virtual worlds: A cyberspace odyssey', *Journal of Consumer Behaviour*, Vol. 1, No. 3, pp. 228–237.
5. Craig and Douglas, ref. 3 above.
6. Prahalad, C. K., Ramaswamy, V. and Krishnan, M. S. (2000) 'Consumer centricity', *Informationweek*, 10 April, pp. 67–76.
7. Siegel, C. (2004), *Internet Marketing: Foundations and Applications*, Houghton Mifflin, Boston, MA.
8. Wolfinbarger, M. and Gilly, M. C. (2001) 'Shopping online for freedom, control, and fun', *California Management Review*, Vol. 43, No. 2, pp. 34–56.
9. IAB (2000) 'IAB internet advertising report: 1999 summary results', PriceWaterhouseCoopers, www.iab.net/news/content/revenues.html, 18 April.
10. Chandon, J. L., Chtourou, M. S. and Fortin, D. R. (2003) 'Effects of configuration and exposure levels on responses to web advertisements', *Journal of Advertising Research*, Vol. 43, No. 2, pp. 217–230.
11. Siegel, ref. 7 above.
12. Murphy, J. and Forest, E. (1997) 'Hits, views, clicks and visits', in Brady, R., Forrest, E. and Mizerski, R. (eds) *Cybermarketing: Your Interactive Marketing Consultant*, NTC Business Books, American Marketing Association, Chicago, pp. 257–266.
13. Struse, D. (2000) 'Marketing research's top 25 influences', *Marketing Research*, Vol. 11, No. 4, pp. 4–10.
14. Murphy and Forest, ref. 12 above.
15. *Marketing News* (1998) 'Tallying the hits', *Marketing News*, 14 September.
16. Bucklin, R. E. and Sismeiro, C. (2003) 'A model of website browsing behaviour estimated on clickstream data', *Journal of Marketing Research*, Vol. 40, No. 3, pp. 249–268.
17. Danna, A. and Gandy, O. H. Jr (2002) 'All that glitters is not gold: Digging beneath the surface of data mining', *Journal of Business Ethics*, Vol. 40, No. 4, pp. 373–384.
18. Moe, W. W. and Fader, P. S. (2001) 'Uncovering patterns in cybershopping', *California Management Review*, Vol. 43, No. 4, pp. 106–118.
19. Danaher, P. J. and Mullarkey, G. W. (2003) 'Factors affecting online advertising recall: A study of students', *Journal of Advertising Research*, Vol. 43, No. 3, pp. 252–258.
20. Murphy and Forest, ref. 12 above.
21. Cobanoglu, C. and Cobanoglu, N. (2003) 'The effect of incentives in web surveys: Application and ethical considerations', *International Journal of Market Research*, Vol. 45, No. 4, pp. 475–489.
22. Compton, J. (1999) 'Instant customer feedback', *PC Computing*, Vol. 12, No. 12, pp. 234–238.
23. Craig and Douglas, ref. 3 above.
24. Jayawardhena, C., Wright, L. T. and Masterson, R. (2003) 'An investigation of online consumer purchasing', *Qualitative Market Research*, Vol. 6, No. 1, pp. 58–66.
25. Kozinets, R. V. (2002) 'The field behind the screen: Using netnography for marketing research in online communities', *Journal of Marketing Research*, Vol. 39, No. 1, pp. 61–73.

26. *Ibid.*
27. Muniz, A. M. Jr and O'Guinn, T. C. (2001) 'Brand community', *Journal of Consumer Research*, Vol. 27, March, pp. 412–432.
28. Kozinets, ref. 25 above.
29. Loiacono, E. T., Watson, R. T. and Goodhue, D. L. (2002) 'Webqual: A measure of website quality', in Evans, K. R. and Scheer, L. K. (eds) *Marketing Theory and Applications*, American Marketing Association, Austin, pp. 432–438.
30. Chen, Q. and Wells, W. D. (1999) 'Attitude toward the site', *Journal of Advertising Research*, Vol. 39, No. 5, pp. 27–37.
31. Aladwani, A. M. and Palvia, P. C. (2002) 'Developing and validating an instrument for measuring user-perceived web quality', *Information & Management*, Vol. 39, No. 6, pp. 467–476.
32. Srinivasan, S. S., Anderson, R. and Ponnnavolu, K. (2002) 'Customer loyalty in e-commerce: An exploration of its antecedents and consequences', *Journal of Retailing*, Vol. 78, No. 1, pp. 41–50.
33. Ranganathan, C. and Ganapathy, S. (2002) 'Key dimensions of business-to-consumer web sites', *Information & Management*, Vol. 39, No. 6, pp. 457–465.
34. Worcester Polytechnic Institute Media Relations (2000) 'Rating a website: WPI professor devises system to judge quality', press release, 16 October, www.webqual.net/pages/255745/index.htm.
35. Hof, R. D., Green, H. and Brady, D. (2000) 'Suddenly, Amazon's books look better', *Business Week*, 21 February, pp. 78–81.
36. Lynch, P. D. (2001) 'The global internet shopper: Evidence from shopping tasks in twelve countries', *Journal of Advertising Research*, Vol. 41, No 3, pp. 15–24.
37. Wolfinbarger, M. and Gilly, M. C. (2003) 'ETailQ: Dimensionalizing, measuring and predicting etail quality', *Journal of Retailing*, Vol. 79, No. 3, pp. 183–199.
38. Grant, L. (1996) 'Gillette knows shaving — And how to turn out hot new products', *Fortune*, 14 October, Vol. 134, No. 7, p. 207.
39. Kaasgaard, K. (2000) *Software Design and Usability*, Copenhagen Business School Press, Copenhagen.
40. Mariampolski, H. (2001) *Qualitative Market Research*, Sage, Thousand Oaks, CA.
41. Dumas, J. S. and Redish, J.C. (1993) *A Practical Guide To Usability Testing*, Ablex, Norwood, NJ.
42. Nielsen, J. (2000) *Designing Web Usability*, New Riders Publishing, Indianapolis.
43. Weiss, S. (2002) *Handheld Usability*, John Wiley & Sons, Chichester.
44. Albaum, G. (1996) 'Thinking about answers: The application of cognitive process to survey methodology', *Journal of Marketing Research*, Vol. 33, No. 3, pp. 373–379.
45. Wang, S. (1996) 'Toward formalized object-oriented management information systems analysis', *Journal of Management Information Systems*, Vol. 12, No. 4, pp. 117–128.
46. Tedeschi, B. (1999) 'Good website design can lead to healthy sales', *The New York Times*, 30 August, www.nytimes.com.
47. Siegel, ref. 7 above.
48. Nielsen, ref. 42 above.
49. Hanna, N. (1978) 'Can effort/satisfaction theory explain price/quality relationships?', *Journal of the Academy of Marketing Science*, Vol. 6, Winter, pp. 91–100.