Smart marketers are overcoming the challenges of online research

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Until recently, online surveys represented only 5% to 10% of all market research conducted in the United States. Academics and practitioners alike, however, are recognizing the potential for using the Web as a communication medium to conduct survey research, partially because of the sheer number of potential respondents now online.

While survey methodology itself remains constant, technology now gives us improved access to target populations, design flexibility, and data-handling capabilities as never before. Technology has been used increasingly in survey research over the past decade in the form of computer-administered surveys such as CATI (computer-assisted telephone interviews), CATS (completely automated telephone survey), disks-by-mail, e-mail surveys, and computer-based fax.

The next natural transition was to the exciting real-time medium of the Web

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Executive Summary

An online survey conducted with marketing and IS communities shows that, despite widespread acceptance of this research method, respondents still believe sampling issues are most important when considering the validity of online surveys. A minority of respondents, those who didn't believe they had success with online surveys, said it was because of low response rates. This article discusses some advantages of online surveys and offers suggestions for improving validity.

and the lure of more accurate data, fast data collection, and reduced costs. There's also the potential for locating hard-tofind respondents who themselves "find" the researcher by visiting the company's Web site relevant to their interests, and in building online panels of pre-recruited individuals who participate in weekly surveys over a designated period. Additionally, one of the exciting features of the Web is that it can make use of multimedia applications with audio and video presentations or product comparisons. A researcher can utilize virtual reality software that lets visitors inspect three-dimensional models of products, such as cars, cameras, and medical equipment. Researchers can manipulate product characteristics, such as color, design and price, to determine an optimal product. But what kind of success are Web researchers finding?

Address the Challenges

While many resources exist that describe the advantages and challenges of conducting Web-based surveys, we decided to ask a group of professional researchers their opinions of and experiences with this technology. We conducted an informational survey of two popular electronic lists, ELMAR (an AMA-sponsored moderated e-mail network for marketing academics) and IS WORLD in information systems. The memberships of the lists are composed of both academics and practitioners. We were primarily seeking the acceptance level, strengths, and drawbacks of electronic surveys, as well as actual experiential evidence of this population. Results from this survey's 85 researcher respondents, as well as our own experience, show that the choice of an appropriate delivery medium is a critical aspect of survey research design. The Web works best for sample groups who have Internet access, are comfortable with computers, and have some motivation to complete the survey. The researchers in our sample reported ease in reaching their target market, accurate and high quality data without coding or reentry, fast data collection, low costs, and an overall easier process. Most considered their surveys to be a success because the response rate met or exceeded their expectations. A few reported lower response rates than a previous paper version of their survey and problems with multiple responses or with reaching their target.

Several issues can particularly affect the validity of e-research

efforts, starting with sample selection, survey design, response tendencies, and technology challenges. As is often a complaint with online surveys, we suffered from sample selection problems ourselves. Asking list subscribers to respond to a survey about online surveys hardly reflects a probability sample, but our efforts did provide interesting comments and experiences about this survey method.

Sample Selection

Our survey respondents indicate that sampling error is by far the most important issue when considering the validity of online surveys. While the population of Web users has been growing dramatically, with broadened gender and age demographics, certain market segments may not be adequately represented among them. The approximate 40% of households without Internet access likely differ in socioeconomic and education levels from those online. To use the Internet as a research environment, we have to make assumptions that the non-online population does not differ significantly in decision-making ability, and that we can identify a representative sample from among Internet users.

A distinct challenge of e-research that affects sample quality is our choice of sampling units in the form of listed e-mail addresses, electronic subscription groups, and heavily visited Web sites. Buying an e-mail list that is expensive and not always fresh is a logical first step. Unfortunately, people change their email addresses more often than they change phone numbers. Surveys to well-defined samples clearly alleviate this problem. Precise targeting results in a good sample and should improve response rates as well as data quality.

On the other hand, regular Web users are beginning to expect electronic communication. A recent online survey reported that 32% of consumers indicated they only responded to online surveys, stating they were more convenient than other ways of responding. In some cases, online surveys may be the only way for consumers to respond. In researching the mobility-disabled market, we found that these respondents physically can type and click more easily than write on paper. While computer users with disabilities almost always have an Internet connection, mainstream advertising to the disabled community has not been well-explored by IT marketers. Therefore, the industry has some catching up to do with online marketing and research with this consumer group.

A.C. Nielsen now claims more than 90,000 participants worldwide. Carefully designed and managed panels can be highly productive, assuming panel effects are monitored. Using groups recruited via probability sampling, inclusion of non-Internet households, use of an Internet appliance to offset hardware variation, weekly participation on a variety of subjects, and careful monitoring of attrition impact can make these survey efforts consistent and valuable. A new concern is the emergence of the "professional cyber respondent," a person who looks for these panels, somehow prepares for the topic at hand, or otherwise distorts the responses and panel effects.

An example of a successful and appropriately targeted survey is a customer preference and satisfaction survey linked to

the home page of a client company. It resulted in more than 3,000 usable responses from the company's frequent flier population. A high percentage (66%) of respondents chose to include free-form comments about various aspects of their Web experience. While this survey was deemed successful in terms of the rich data collected, an attempt to estimate a sample response was difficult. At the time of this survey, few organizations collected metrics on Web site visits. A guess by one marketing representative was that the response represented perhaps one-half of one percentage point of potential traffic, although they had no way of knowing and were pleased with the data collected.

Survey Design

While researchers may borrow the "how-to" of designing online surveys from the literature on traditional surveys, many know little about transferring well-designed surveys to electronic versions. Monitor size and resolution can affect

how the survey appears to the user, and response times can frustrate participants if the survey is too long or contains many graphic elements. Few survey resources concentrate solely on Web survey design issues, rightly placing Web surveys into the overall context of datagathering devices. The temptation by first timers is to overuse technology, setting aside basic survey design guidelines.

A major design decision closely tied to sample selection is whether to have unrestricted, screened, or recruited respondents. While restricting access to a survey instrument with a PIN number may increase the task load for the respondent, the resultant data will be of higher quality and the response rate

can be more accurately determined. And, according to a 2002 study, having a manual

login (vs. an automatic one) does not decrease response rates, but does increase overall degree of data quality. An open Web survey, on the other hand, may result in many responses, but more difficulty in estimating how responses fit the general population.

Web surveys can take the place of mail and phone surveys as long as the sample demographics fit and respondents can access the site. Web surveys may be more detailed and flexible than email surveys. And certain potential respondents, such as internal groups of employees, channel members, and beta testers, may be readily reached via e-mail. Sophisticated survey development software offers the potential for attractive layouts, sophisticated skip patterns, and control over survey access and answer behaviors, such as not letting respondents go back and change answers. At the same time, we feel Web surveys are not the place for artistic license, and work best when they are perceived to be as conventional as a paper survey.

Response Tendencies

While some sources claim the response rate for electronic surveys, including e-mail surveys, are often less than other survey methods, others conducting mixed medium research report that mail and Web surveys suffer from comparable measurement and response errors. Most of our e-researchers are willing to accept lower response rates for online surveys, however, arguing the lower cost and convenience of e-mail and Web forms make up for the disadvantages. We hear this particularly from small firms, where the rapid technological change of the Web enables them to compete directly with large organizations.

Web researchers clearly like to use incentives to improve response rate and note they don't always seem to be needed upfront, as is the advice for mail surveys. Response will be improved if the survey is short, relevant, and of interest to the respondent. Failure to meet these criteria cannot be compensated by incentives. Follow-up reminders used with traditional

paper surveys may be used for Web surveys also, typically on a faster cycle. Unlike a mail-based paper survey, there's no artifact to get placed in a to-do pile, so an e-mail reminder with a link to the survey site may be more successful.

> One of our respondents discussed in detail a survey targeted to corporate users that was implemented following Don Dillman's tailored design process with five mailings: (1) introduction and announcement, which should come from the highest possible level in the organization; (2) first request with detailed instruction and a powerful statement that indicates why the survey is important (to us and to them) and

what they'll get from it; (3) reminder notice, only to those that have not

responded; (4) third and final notice, only to those that have not responded; and (5) acknowl-

edgement and thank you note to all that responded. A sixth mailing can be sent later if a summary of results was promised to participants. This survey received a 70% response over three weeks and used a drawing and a promise of the results as incentive to increase response. The site was password-protected, and developed in house with readily available Web tools.

In addition to being fast and economical, some researchers note that online surveys are fun. Respondents are more likely to add free-form comments to express their opinions than they would be with paper surveys, including those of a sensitive nature.

Survey Validity

Certainly validity issues cannot be ignored just because you're designing a survey for a "hot" medium. Some researchers suggest performing additional traditional surveys to

Web surveys can take the place of mail and phone surveys as long as the sample demographics fit and respondents can access the site. correct for the possible bias in online surveys due to nonresponse, both at a respondent level and a missing observation per case level. They believe a low-response rate should be expected in online surveys and the statistical value of online data is often limited. Others note online surveys that ask the same questions as telephone surveys may yield different results because respondents may differ demographically, behaviorally, and psychographically from the general population. On the other hand, the Internet can reach people not available by phone or too impatient to respond to mail surveys. Results from online and offline research are often similar, so a multimode method of paper, e-mail, and Web surveys may improve response rates.

A methodological study by one of our international respondents explored Internet usage. The sample frame was selected from e-mail listings in a public telephone directory, a source, unfortunately, not available in the United

States. The response was beyond their expectations at 50%, and as a result they had "very good numbers" (their words) for each of several experimental groups. They tracked responses by embedding a unique identifier within the URL link for each individual's email address as it was pulled from a database. This allowed the researcher to monitor multiple responses and easily assign random treatments prior to the initial e-mail invitation.

Our researchers generally feel Web surveys are no less valid than other forms of data collection and can be more valid because they help eliminate data entry errors. Personal contact is another strong method to increase response.

Technology can be used to personalize participation messages, which shows a tendency to improve response rates. Researchers warn against using large mailing lists without some degree of personalization. An easy method is to address the initial e-mail to the general group, while including each name as a blind copy. Their name only shows on the message, protecting list privacy yet offering some personalization.

Technology Issues

Just as Web surveys give us new options for display, content control, and multimedia, they present some different technical problems compared to other survey forms. These problems include the variability of browser software, measurements from an inaccurate computer clock of the time taken to complete a task, and frustration over slow response times. The Web designer's final product may be viewed on computer screens of different size and resolutions, with various operating systems, and one of several generations of popular Web browsers. Survey questions and answer sections that appear neatly laid out on one computer screen may be wrapped and confusing on another.

As with most Web design, we don't know our respondent's computer setup and must design for the lowest common denominator of browser, processing power, and Internet connection. Additionally, we must gather enough system input from each user to filter out multiple responses sent either intentionally, or when slow network response results in multiple clicks of the enter button. This happens at the same time we reassure participants on how the data will be used and that their privacy will be maintained. An interesting alternative to dealing with user hardware variation was an English firm's joint venture with a chain of Internet cafes. Subjects were invited to participate in market research in a controlled, yet relaxing, environment.

Many survey designers are mixed on the design choices of radio buttons vs. drop-down lists. Some feel the radio button choice is clearer and easier for the respondent. A drop-down list, however, shortens the length of the view-Long surveys able survey and passes the value of the response selected, while radio button choices pass a binary onare sometimes broken or-off value that can result in lost data if the form is not carefully in small sections to hide their coded. Drop-down list choices may be linked to skip patterns length from respondents, to move the respondent forward to an appropriate question. Drop-down lists may be just as the telephone overused by some designers and are not appropriate for a short interviewer says it will just number of alternative choices. If drop-downs are used, the first be another minute! choice should always be a "click here" option, rather than the first

option on the list, to avoid biased results from respondents who missed that question or left the default choice showing. Also keep in

mind that if multimode surveys will be conducted, the visual presentation of the questions and answers may influence user selection, just as color on the Web page may draw unnecessary attention to one question or another.

An interesting dilemma is presented in the argument over a single, continuous scrolling survey page vs. a set of short pages connected with next buttons. Users don't like to scroll, so a survey design with many separate pages is a good idea. Survey designers are concerned that respondents may lose a sense of context and need to refer to a previous answer as they respond to other questions down the page. Unless there's a reason to prevent the respondent from looking back, the general convention reflects continuous scrolling. Additionally, long surveys are sometimes broken up in small sections to hide their length from respondents, just as the telephone interviewer says it will just be another minute!

Researchers in our sample still do a lot of their survey coding by hand although many commercial survey packages are

now available. They are available in many price ranges and with an increasingly sophisticated set of options, including online outsourcing of the entire process. Some include statistical data analyses and graphing tools, while others are primarily Web design tools. A good package reduces all concerns about data collection and database stability and offers an easy and intuitive design interface. Newer packages can give the researcher more design options, along with stricter access control, more sophisticated skip patterns, and control over the respondent moving back through the form to change answers. Some packages also allow questions to be marked as required and will not allow the respondent to move past them. This brings up some serious human subjects issues, and many survey researchers believe this practice can create unnecessary frustration and irritation. A better alternative is to include a "prefer not to answer" alternative.

With any self-administered survey, instructions must be clear, as there is no option for personal help. Respondents may become frustrated and quit without completing the entire document. Web technology offers wonderful options for context-sensitive help presented upon a movement of the mouse over a help icon or more detailed guidance as needed in a popup window.

The challenge with Web survey design is using the technology to improve data collection methods without presenting a cognitive overload to the respondent. Continuous scales, for example, may help the respondent choose a more accurate level of agreement, but confusing presentation or lack of explanation can override their value. A choice of a specific answer on a drop-down box can present a customized set of questions dynamically created for that response. The complex branching of paper surveys can be transparent on the Web, easily guiding the respondent over non-applicable sections.

Web surveys are becoming more reliable and easier to use, but researchers shouldn't assume Web-based surveys are always the best communication medium. General Web surveys are better at reaching consumers, while targeted surveys for corporate users are effective. Web surveys also signal a technology-savvy image.

Consider all possible data collection modes, or a multimode strategy, for your survey. Additionally, privacy concerns may cause some potential respondents to stop completing online surveys. Hopefully, we won't see so much overuse of the medium that Web surveys become another annoyance along with unsolicited e-mail.

If the Web survey method is the most appropriate for your purposes, remember all of the guidelines of traditional survey design, sample selection, and validity, while learning how to harness the technology. In short, we have more to keep in mind, but more potential ways to present multimedia formats and gather valid research data in a cost-effective and accurate medium.

Whether we should use e-research, whether it is valid, and how it compares to traditional research methods are moot points. Use technology where it makes sense to drive change and improve your research capabilities. Research, just like business in the new economy, is being transformed by the online



TIPS FOR SURVEY SUCCESS

Don Dillman, survey guru and author of Mail and Internet Surveys: The Tailored Design Method (1999, John

Wiley and Sons), reminds us that completing a survey is a social exchange. To maximize response rates and success, he recommends the following:

- Establish trust
- Provide token of appreciation in advance
- Note sponsorship by a legitimate authority
- · Make the task appear important
- Increase reward
- Show positive regard
- Ask for advice
- Make questionnaire interesting
- Communicate scarcity of response opportunities
- Reduce social cost
- Avoid subordinating language
- Make questionnaire short and easy
- Minimize requests for personal information
- Avoid inconvenience

medium. Increasing access to the Internet is broadening the demographic pool of the general online population, online communication is fast and efficient, and many survey respondents prefer it today. Some of the user interface issues need clarification, along with research into the use of incentives. Eresearch needs continuous monitoring to determine its direction, appropriate use, and long-term effectiveness.

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