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The Mobile & Internet Performance Authority™

White Paper

User-Centered Design: A Comparison of Measurement Methods

The Internet and Its Users Are Different

The Web requires a unique approach to evaluating customer experience. Gaining this insight requires leveraging the most critical elements of traditional market research and usability methods while combining both behavior and attitudes. Making compromises on audience size or the data collected is counterintuitive to the Web. Some of the most commonly used research methodologies include behavior tracking and log files; focus groups; usability studies; consultant reviews; online surveys; and robotic agents. The most insightful approach combines the advantages of multiple research methods while still providing excellent predictive insights into Web site effectiveness. The cumulative results from user testing are critical for designing effective Web sites that engage users and turn them into repeat customers. This paper explores user research methodologies and highlights the value of Keynote's innovative approach.

Behavior-Tracking Tools and Log Files (Traffic Analyses)

Behavior-tracking tools (e.g., Web server logs) may reveal what users did on a site, but not why they did it. Analysis of log file data alone does not reveal whether a user has abandoned a full shopping cart because he changed his mind after seeing the shipping prices, or whether he did not feel comfortable giving his credit card number over the Internet. Without knowing a user's goals, it is impossible to interpret whether or not he or she is successfully achieving them.

Focus Groups

Traditional focus groups can provide qualitative data and insights throughout the design process. Yet they can test only small samples, providing insufficient data points for making critical business decisions. In addition, qualitative data depends on interpretations by the moderator and may come from idiosyncratic test participants. Raw data is usually in the form of session videotapes that are difficult to analyze beyond the moderator's report.

Usability Tests

Usability tests typically require users to test a site in an unfamiliar setting, often with unrealistically superior computer equipment – conditions that may lead to inaccurate assessments of a site's performance. These tests also require highly skilled moderators, special labs, and complicated logistics for participants, making them expensive and time-consuming. A typical usability study can cost \$40,000 and take as long as six weeks.

Consultant Reviews (Heuristic Evaluations)

In this method, experts review Web sites against a checklist of normative standards and general best practices. While this method may uncover problems and act as a starting point in assessing design issues, its effectiveness depends on the level of expertise of the evaluator and the quality of the information used to construct the checklist.

Online Surveys

Surveys poll users via traditional market research studies delivered online, via telephone or through e-mail. Surveys gather feedback and opinions from large samples of random users by asking a series of closed- and open-ended questions. Principal shortcomings of surveys include their inability to capture behavioral information, making it difficult to assess

how people actually interact with a site and whether users complete tasks successfully. Self-reported behavior is an unreliable measure of success: One cannot rely on surveys to identify problem spots on a Web site.

Robotic Agents

Products that use robotic agents are able to assess a Web site in relation to predefined goals, but can only measure the mechanical aspects of the site and are accurate only to the extent that the robot faithfully simulates human behavior. These robotic inspections cannot assess the subjective aspects of a site or provide insight into a customer's perspective, preferences, satisfaction, or comprehension – all critical elements needed to understand the entire customer experience.

Competitive Testing

Competitive testing can reveal strengths and weaknesses of an online presence against key competitors, providing strategic direction on how to best compete. But competitive testing is very difficult to do well with traditional methods.

Syndicated Research Rankings

Syndicated research reports (e.g., Netratings/JD Powers/Bizrate) can be helpful in showing basic site traffic metrics and can be a good way to get strategic direction for an industry, since they can incorporate large samples, more sophisticated analytics, and third-party objectivity. Unfortunately, many traditional approaches use surveys that do not capture sufficient depth to provide real customer insights into how companies can improve most effectively. Worse, many rankings are not based on customer reactions at all but on analyst opinions, which can be misleading.

Pop-Up Site Surveys

Site pop-ups are commonly used in order to learn more about users' attitudes, perceptions, and experiences. They gather both qualitative and quantitative data. Common uses include customer satisfaction rankings, user requirements analysis, brand awareness, concept testing, and market analyses.

Field Tests

Field tests are useful for obtaining a complete understanding of when, where, and how people interact with a company's products or services. However, observation of actual customer behavior can be difficult to implement because Web users are scattered across the globe. It is important to be able to understand and measure how a wide spectrum of users navigate and make choices when using the Web.

Card Sorting

Card sorting allows companies to understand how customers categorize products, rather than how companies view them, and what nomenclature customers can relate to. Card sorting techniques are useful but are difficult to implement.

User Centered Design

Keynote can provide help with all of these different types of research by incorporating the critical aspects of each approach. It provides the intent-based context (task approach) of traditional usability testing; large samples associated with surveys and traffic analysis tools; the qualitative data and verbatim reactions of focus groups and usability labs; the behavioral analysis (clickstreams, page views, time intervals) of usability labs and traffic analyses; and a realistic setting (with users' normal Internet connections) that are only associated with traffic analyses. In addition, Keynote's analysis tools make it easy to see how the quantitative and qualitative data relate to each other and come together to form rich customer insights. These user-centric insights are the precise points necessary for identifying ease of use, increasing engagement, and designing sites that people will really use.

Keynote evaluates customer experience by inviting large samples of individuals to interact with a live Web site. Panelists log on where they normally access the Web and use a small downloadable companion to Microsoft's Internet Explorer, called the Keynote Connector. Users then pursue a predefined set of tasks, such as registering or using a site's shopping cart feature. Keynote's technology records user behavior (e.g., the URLs they follow, time spent on each page, and number of page views) and provides question prompts and opportunities for making open-ended comments.

Users typically begin by answering background, expectation, usage, awareness, and brand positioning questions before interacting with a site; and end with satisfaction, future intentions, and a re-measurement of brand positioning questions. Keynote automatically compiles this data and presents it via a Web-based interface for easy analysis of top-level concerns. The software provides the opportunity to drill down from behavioral data to verbatim comments from users, making the data easily interpretable to inform decisions about Web site design and operation.

Real People Interacting with Real Web Sites

Keynote evaluates customer experience by collecting detailed qualitative and quantitative data from large samples of individuals (typically 200 to 800) as they attempt a series of real-life tasks on the Web. Keynote samples users according to target customer profiles from the Keynote Research Panel (KRP) of more than 160,000 Web users, or directly from a client's private panel of actual customers.

In order to capture verbatim comments from users accessing the site, Keynote studies intercept live users and ask them instantly to participate in Web site evaluations. This results in the ability to associate real customer comments and link them to quantitative behavioral data (e.g., clickstream statistics or page views). Capturing the experience of real Web users is the only way to obtain insight into users' subjective thoughts and feelings about a site.

Intent-Based Context and Task-Based Testing

Without knowing what customers are trying to achieve, it is impossible to know whether or not they have been successful. In Keynote evaluations,

the user's intentions are known. Using the Keynote Connector, the user pursues a predefined set of tasks (such as registering or using a shopping cart) in a method known as task-based testing. With task-based testing, users' goals and intentions are clearly understood and success rates can be determined and compared across the spectrum of users.

Clickstream Analysis addresses the need to understand user intent through the task-based testing approach. This method, common in traditional usability lab settings, establishes a uniform set of goals (called objectives) that all users pursue. Because user intent is a known variable, Keynote can operationally define and measure success rates for particular tasks. The results can then be linked to qualitative comments and user satisfaction ratings. It is also possible to design open-ended objectives to allow for user-driven exploration of the site.

Site Evaluations Conducted in Natural Settings

Because Keynote's technology enables remote site evaluations, panelists can participate from any location, at any time of day. Participants access the computer they use every day in their homes or offices, from their own Internet connections, browsers, and computers without having to conform to the constraints of a more artificial testing environment.

By testing in a natural setting, the evaluation experience more accurately represents users' normal Web use conditions. It provides more accurate study results by minimizing interviewer or moderator bias that can arise in a lab or focus group settings. In addition, the flexibility to participate from a variety of locations, such as home, work, or school, at points around the globe, increases the spectrum of potential study participants and produces more accurate test results. Remote settings also offer anonymity, encouraging panelists to express thoughts and feelings with candor.

Keynote CE Rankings

Keynote CE Rankings deliver a standardized comparison of customer experience across the top sites in an industry. For each study, customers are randomly assigned to sites and each sample performs the same tasks and answers the same questions, allowing direct comparison across the sites. The studies provide a competitive benchmark from which clients can evaluate their site's performance against industry norms over time; examine industry-wide drivers of acquisition, loyalty, brand and online adoption; identify competitors' strengths and weaknesses; and learn best (and worst) Web practices.

Keynote Customer Discovery and Tracking Studies

Keynote Customer Discovery and Tracking Studies evaluate the customer experience while performing tasks related to a specific industry. Customers start at a blank Web page and are asked to use any resource on the Internet to perform a task, such as plan a vacation or find information on a medical condition. These studies provide insight into research or shopping processes across the Web – where customers go, the reasons they go there, and the feelings customers have as they go from site to site. Companies can learn how to better capture the attention of Web users and improve their messaging and site customer experience to increase the likelihood of customer acquisition and retention.

Research Expertise

A team of professionals with backgrounds in experimental psychology, market research, quantitative management consulting, mathematical modeling, Web usability, and technology publishing develop and refine the innovative Keynote approach. The approach has been applied to a wide variety of Web sites, producing results consistent with other sources of customer experience data while providing more actionable insights. The logic and benefits of the Keynote approach can be best understood in comparison to current alternative methods, described in the next section.

Building a Comprehensive View of Your Online Customers

Table 1 summarizes Keynote’s capabilities compared with traditional approaches that offer just a slice of information. Keynote’s methodology incorporates the critical aspects of each approach. It provides the task-based approach of traditional usability testing; the large samples associated with surveys and traffic analysis tools; the qualitative data and verbatim reactions of focus groups, usability labs, and surveys; the behavioral analysis (clickstreams, page views, time intervals) of usability labs and traffic analyses; and a realistic setting (with users’ normal internet connections) that are only associated with surveys and traffic analyses. In addition, Keynote’s analysis and reporting tools make it easy to see how the quantitative and qualitative data relate to each other and come together to form rich customer insights.

	Task-Based Approach	Large Samples	Qualitative Data	Behavioral Data	Natural Setting	Analysis & Reporting Tools
Focus Groups			X			
Usability Labs	X		X	X		
Surveys		X	X		X	X
Traffic Analysis		X		X	X	X
Robotic Agents						X
Keynote Method	X	X	X	X	X	X

Table 1. Keynote methodology incorporates the critical aspects of each research method.