

User Experience and the Bottom Line

A META Group White Paper

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User Experience and the Bottom Line

Content & Collaboration Strategies, Enterprise Analytics Strategies

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Executive Summary

To date, de facto metrics to assess Web site value are related to “eyeball” volume (e.g., unique sessions, duration of session), but this rarely reflects the true benefit of a Global 2000 (G2000) Web site or Web page, because advertising revenue is not the site’s primary goal. For most G2000 companies, value is found in the sell-side commerce, self-service, lead-generation, community-building, or informational aspects of the site. Indeed, Web site spending by G2000 enterprises closely parallels the recent dynamics of the dot-com market — dot-com companies without a valid business model collapsed; similarly, G2000 Web sites without an identifiable benefit (e.g., contribution to sales, marketing, or customer service) will also fail. These wasted Web investments not only reduce corporate earnings (attacking the bottom line), but also discourage additional Web investments that could increase business opportunities (attacking the top line).

As a result, business-oriented metrics or key performance indicators (KPIs) gauging the efficacy of a Web site as a customer channel have emerged in some organizations. These metrics will be segmented according to specific business objectives (customer service, sales, operations) that, in turn, drive Web page functionality (e.g., content-driven, application delivery). Moreover, these metrics identify how well organizations package people and process around Web technology to create a real customer channel. A derivative and potentially detrimental impact of business-based KPI adoption will be felt in the Web development team, with future Web site redesigns being engineered specifically to demonstrate improved measurement over time — potentially at the expense of less tangible or quantifiable Web site improvements. In particular, attitudinal metrics about a user’s overall satisfaction must be combined with easier-to-define metrics (e.g., performance, reliability, clickstream analysis) to gain a comprehensive indication of a user’s overall quality of experience (QoE).

This report will explain how to create a QoE measurement framework, including a definition of the three major KPI categories: 1) Web site performance and reliability; 2) usage and clickstream analysis; and 3) usability. Once the metrics have been defined, systems management and analytic tools must be put in place to collect the necessary data and continually report these metrics to the

appropriate constituency. Furthermore, organizational roles and responsibilities must be defined and mapped to operational tasks. Finally, this report will identify clear business benefits derived from measuring QoE metrics extensively. Note that, because the focus of this paper is QoE measurement, it will not discuss solutions that directly improve QoE (e.g., e-service for usability, server clustering for performance).

The Emergence of the Web Site as a Customer Channel

It took a dot-com implosion, but the role of a Web site as a customer channel that is complementary to other channels (e.g., direct sales, call center, resellers) has been clearly defined for most Global 2000 organizations. Customer relationship management (CRM) programs implemented in the last two years have categorized customer life-cycle activities around four primary phases: engage (e.g., marketing), transact (e.g., commerce), fulfill (delivery of product), and service (e.g., post-sale support). Organizations can then analyze customer relationships in terms of “ETFS” patterns that illustrate how customers interact with companies in terms of channels and points of interaction (e.g., Web sites). In the course of this life cycle, a customer will transition (hopefully without restrictions) across different channels. For example, a product purchased on a Web site can usually be returned at a “brick and mortar” retail store. An e-mail marketing campaign that drives prospects to a Web site displaying promotional information can bolster sales leads for a direct sales force.

This cross-channel customer life-cycle model creates dramatic synergies capable of optimizing business results. For most Global 2000 organizations, online channels such as the Web and e-mail are significantly cheaper than offline channels. Certain customer segments might also prefer electronic channels to the telephone or physical stores. As a result, business processes can be restructured to manage at least part of the customer life-cycle — typically engage and service — through more effective online alternatives. For example, servicing a client inquiry through an automated Web site with natural language query recognition diverts that query away from a more expensive call center. The cross-channel customer life-cycle model also facilitates the routing of more important transactions or customers to optimized resources (e.g., a service representative might offer a co-browsing session to a repeat, high-value customer).

Now that the Web site has assumed its role alongside the other more venerable customer channels, Global 2000 organizations must ensure that the Web site is engineered to deliver the best possible experience for each customer. Without this quality of experience, the Web site can damage the overall brand image of the company. The days of a Web site being a separate dot-com entity are over, both on the balance sheet and in the perceptions of customers. As a result, organizations must clearly define the purpose of the Web site and its role in fulfilling the customer life cycle.

Most Web sites can be broken into the following business models: commerce, community (e.g., customer-to-customer interactions), information (e.g., publish, speed sales cycle, generate leads), and service (e.g., self-service, customer support). This categorization is necessary because different business models will require different measures of success. Below, we expand on the four different types of sites and the user behavior the site is trying to induce.

Commerce

A commerce site is designed to enable prospects and customers to execute a transaction (e.g., purchase a product or service) and must be tied to analytics that will help business stakeholders understand the reasons behind Web site abandonment. Examples of commerce sites are gap.com and eddiebauer.com, whose sites are designed to replicate and enhance the real-world shopping experience by offering customers a personalized environment. One META Group client that tied performance and usability metrics to Web site ROI was able to achieve a 10% reduction in shopping cart abandonment, leading to a 17% revenue increase. Other success measures include:

- Greater consumption of products/services (deeper penetration)
 - Higher up-sell/cross-sell rates (broader penetration)
 - Reduction in customer abandonment
- Revenue measures
 - Uplift per transaction
 - Increased transaction frequency
 - ROI/NPV metrics
- Better customer efficiency/pricing
 - Offers targeted to individual needs (potentially more dynamic pricing at the point of sale)
- Increased customer acquisition
 - Higher conversion ratios
 - Less elapsed time (prospect to client)

Community (e.g., Relationship Building)

A community Web site addresses the need for intimacy between the organization and its customers, or among customers themselves. This type of site is trying to generate interest in the company or product, build closer relationships, and promote further customer “team building” and collaborative interaction. Community-focused Web sites like Charles Schwab’s offer prospective customers incentives to become members. These can include topic-oriented threaded discussions that offer the prospective customer an opportunity to become more deeply involved with the company or product. Although also considered commerce sites, Amazon and eBay are good examples of community sites because they

enable customers to share opinions on products and to communicate with each other. Measuring the effectiveness of a community Web site is different from measuring a commerce site, because user experience is subjective and requires anecdotal feedback from users tied to empirical success measures (e.g., how many people come to a specific brand section, participate, and come back), as well as a measurement of the amount of collaboration that is done (e.g., how many people post things, whether it is read and valued). Other success measures include:

- Improved customer or employee knowledge/learning
- Greater customer reach
- Number of community members (registration metrics)
- Retention and churn rates of community members
- Actions of community members (to surveys and offers) versus non-community members

Information

An informational Web site is designed to enable users to gather basic information about a company's history, mission, philosophy, products, services, and job opportunities. This is increasingly accomplished via dynamic/personalized information aimed at a particular user segment identified via clickstream information and customer self-identification. The focus is to promote the organization and products, reduce the sales cycle, and generate leads while leaving the transaction to other sales channels. Success measures of an informational site include:

- Increased customer retention
 - Greater loyalty/satisfaction
 - Increased effectiveness/more utilization of site resources
- Better customer efficiency
 - More productive time on the site (tasks are streamlined)
- Lead generation
- Reduced sales cycle

Service

A service Web site is focused on customer-initiated interactions by delivering customer support requests to an automated resource that answers inquiries without (or with less) human intervention. It typically requires alignment between Web teams and the customer support organization. Moving customer queries away from offline resources (i.e., the call center) enabled a META Group client to show a 15% cost savings. In its simplest form, a frequently asked questions (FAQ) page could be considered e-service, but most G2000 organizations are looking for more elaborate capabilities. We expect strong adoption of natural language query mechanisms that use artificial intelligence or linguistic techniques to understand

the user's question and provide some type of useful answer (perhaps in concert with FAQs and other navigational aids). To measure the success of a service-oriented Web site, companies should consider:

- Improved customer knowledge/learning and satisfaction
 - Increased effectiveness/more utilization of site resources
- Better customer efficiency
- More productive time on the site (tasks are streamlined)
- Reduced customer support costs or improved use of customer service resources

Bottom Line

The Web site has assumed a complementary role, instead of a cannibalistic one, as a customer channel. Global 2000 organizations are clearly defining the scope and purpose of Web sites around four primary categories: commerce, community, information, and service.

Defining a Quality-of-Experience Measurement Framework

Customers' impressions of a Web site are influenced by many factors — user interface design, management of user interactions, navigational structures, trustworthiness (e.g., privacy/security), and factors associated with doing business via the site itself (service and fulfillment). During the next few years, establishing metrics and key performance indicators around customer QoE will require an analytical framework that includes multiple assessment techniques (e.g., audience measurement, surveys, performance/use analytics). Most current QoE measures are response-time-focused. Although valuable, critical business decisions concerning site investments in functionality, infrastructure, and operations should take into account real customers' perceptions and attitudes.

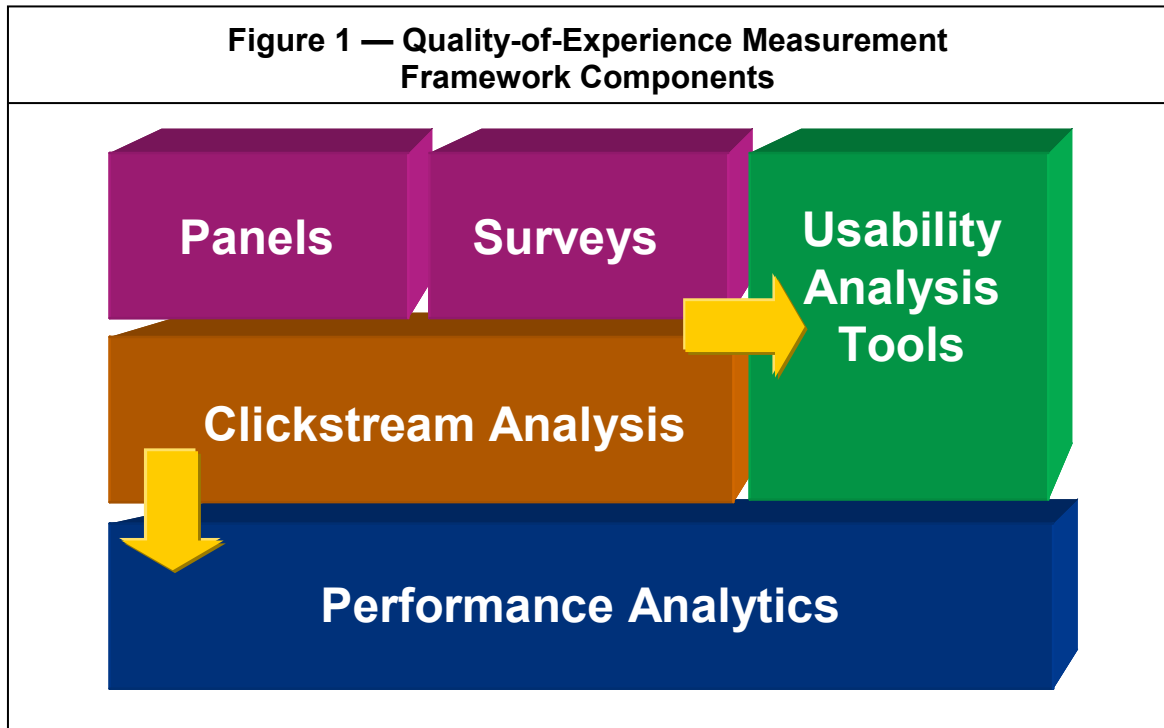
During 2003/04, organizations should invest in business intelligence (BI) frameworks (spanning process, technology, and staff) to provide customer-centric guidance to infrastructure and operational investments. Innovative organizations will exploit these activities by integrating QoE measures into strategic e-business initiatives (e.g., e-commerce, CRM). Companies failing to capitalize on business intelligence frameworks risk reduced ROI from misdirected investments and marginalized brand perceptions by customers.

The hybrid nature of QoE efforts compels organizations to understand market segmentation and its related impact on selection criteria. Although there are many components to a QoE measurement framework (see Figure 1), most of the tools fall within three primary categories: clickstream analytics, performance and reliability, and usability.

Clickstream Analytics

Clickstream analysis evaluates user sessions, interactions, and the sequence of pages visited. These tools transform Web site usage information into more explicit information about users' sessions, such as what they buy and what pages they visit on the site. The tools also establish a baseline around online usage behaviors. The clickstream analysis space is very fragmented, and solutions in this area represent only one part of a broader customer intelligence analytic system. Web analytics specialists such as NetIQ/WebTrends, WebSideStory, and Coremetrics dominate the clickstream analysis space. However, Web analytic functionality from traditional BI organizations (e.g., SAS, Informatica, SPSS), CRM (e.g., E.piphany), and portal vendors (e.g., IBM, Vignette) is being used to measure Web site performance. In particular, the QoE value of clickstream

analytics is in “sessionizing” user interactions into more meaningful metrics. The primary application of clickstream analysis for QoE measurement is to report metrics such as abandoned transactions and identify problematic path sequences.



Performance and Reliability

Most performance monitoring products are thought of in two ways: 1) measures of the underlying response time of the IT systems; and 2) measures via a user view of how well certain activities can be performed. Performance monitoring is one of the most mature QoE components and is currently used by more than 75% of G2000 companies. Performance analysis tools such as Keynote, BMC, and Mercury can track the reliability of a Web site, enabling organizations to gain trouble-shooting capabilities. Performance monitoring is most effective in gathering real data on competitors’ response time for benchmarking purposes. We believe correlating clickstream and performance is paramount to establishing a quality-of-service baseline.

Usability Analysis

Usability analysis products measure a Web site via a user view of how well certain activities can be completed beyond mere response time and performance. These services include certain assumptions regarding Web site ergonomics when assessing site structures (e.g., navigation). Using software to simulate browsing

behavior or technology that enables manual tracking, simulation vendors such as WebCriteria and Decise determine if end users are utilizing a site effectively, ensuring the effectiveness of overall site design, and giving feedback as to what aspects are ineffective. Keynote's WebEffective performs similar tasks by sampling real users. There are two primary subsets of usability analysis: surveys and panels.

Web-Based Surveys

Online survey companies (e.g., Inquisite, MarketTools, Keynote, Survey.com, Satmetrix) enable organizations to ask directly for information and opinions. Many vendors, such as Perseus and Scantron, offer valuable back-end consulting to design surveys, interpret results, and plan future corporate strategy based on results. We expect that many e-survey vendors will be acquired by operational and analytical CRM vendors (e.g., Siebel, E.piphany, Broadbase). Traditional large-scale survey vendors (e.g., Harris Black, Greenfield, Gallup) interested in offering a complete evaluation of customers will also diversify via more targeted performance-based surveys.

Audience Panels

Panel vendors (e.g., Vividence, ComScore NetValue, Gomez, NetRatings) gauge Internet behavior, activity, and opinions. However, we believe it is difficult to obtain granularity with such tools. They can look at broad sites and track Web activity, behavior, and opinions on the sites to which their panel members go. Panels are most successful in monitoring top-100 Web sites, but many brick-and-mortar sites fall below their radar screens (e.g., with more specific or granular Web sites, it becomes difficult to have a sample size broad enough to draw any large conclusions). Large organizations investing in strategic marketing initiatives will find panels useful in uncovering industry trends and gathering real-time feedback from target customers. During the next two years, META Group contends online survey and panel organizations will increasingly become integrated.

Bottom Line

In developing a quality-of-experience business strategy, organizations need a strong analytical platform and must design analytics into the Web site as part of their design efforts. Although there is no single-vendor solution, IT departments can custom-blend solutions to configure with this strategy.

Structuring Organizational Roles to Execute

Three organizational groups that exist in most Global 2000 organizations map directly to the three categories of the QoE measurement framework defined earlier in this paper. The server and network infrastructure group has ultimate authority to maintain service levels relating to a Web site's performance and reliability. The enterprise analytics group, often referred to as the "data warehouse team," should be responsible for collecting and reporting clickstream data. Finally, the Web team that controls all site production activities should be in charge of collecting Web site usability feedback from customers. Our research indicates two of these organizational groups — the infrastructure and the Web team — are appropriately tasked with performance/reliability and usability measurement, respectively. However, the analytics team in most G2000 organizations is not in charge of clickstream data collection. Instead, this task is performed, often reluctantly, by the Web team. To help repair this situation, we will outline how organizations should reorganize their clickstream analysis responsibilities.

Our research indicates the enterprise analytics team is significantly involved in just 20% of Web analytics projects. Most Global 2000 organizations rely primarily on the Web team and marketing departments for collecting requirements, evaluating vendors, and implementing a solution. This arrangement was tenable during the era of data marts and stovepiped analytics, but enterprise analytics teams responsible for running the data warehouse must play a larger role, if not the lead, in managing Web analytics initiatives.

While we acknowledge the difficulties of creating and maintaining an enterprise data model, the broader role of the enterprise analytics team better enables correlation of Web data with other customer channels (e.g., call center, sales) and business processes. Moreover, marketing departments have saddled reluctant Web teams with the technical responsibility of analyzing Web site activity. This reluctance is one reason Web analytics outsourcers, which minimize the role of IT, have been increasingly selected over labor-intensive software solutions. Although we expect outsourced service providers to continue as the preferred solution, enterprise analytics teams will increasingly lead Web analytics project during the next 12-24 months. During the next five years, efforts to create a customer information master file will culminate in a broader analysis of the Web site's role in a multi-channel strategy. By 2007, 80% of Web analytics projects will be managed centrally by the enterprise analytics team, as part of the data warehouse.

The Web Team

The Web team's role in managing the Web analytics initiative is analogous to the role an SAP project team plays for ERP analytics (e.g., technical advice, instrumentation). With the increasing popularity of page beacons as a data collection technique, the Web team will need to coordinate JavaScript tags with Web content management platforms. In particular, custom variables created to optimize Web analytics must be rendered through dynamic pages. In addition, overall Web site design and usability remain a primary task of the Web team, so in this case, the Web team becomes more of a user of Web analytics reports than a provider of them.

We expect customer feedback mechanisms (e.g., Informative, Enviz, Vividence) to be used increasingly to collect performance metrics on Web site usability. Furthermore, analytics in general will be tied to portal framework initiatives, where each portal user receives real-time updates of key performance indicators (KPIs) predefined for a given community. The Web team will be responsible to ensure this data is integrated into the B2E, B2B, and B2C portal frameworks. Finally, the Web team must oversee the collection of personally identifiable information (PII) from the Web site and ensure PII data collection complies with corporate privacy policies.

Infrastructure and Operations

In the early days of the Internet, separate infrastructure teams were created to support Internet infrastructure. Our research indicates these redundant teams have been consolidated into central infrastructure and operations groups. It is this central team that must create service levels and track performance and reliability metrics with respect to Web sites and all online services (e.g., e-mail). The infrastructure and operations team must work with both the Web team and business owners of the Web site (e.g., sales, marketing, customer support) to ensure insight derived from performance and reliability measurements is used to make channel decisions. We believe most G2000 organizations are doing a reasonable job at that task, but QoE measurements are still limited by one technical fact. There are virtually no reports provided in most G2000 shops that directly correlate performance with behavioral success on the Web site (e.g., online transaction). It would be useful to show the impact that performance and reliability have on the efficacy of a Web site, but unfortunately, technical limitations often prevent this correlation.

Enterprise Analytics

The major barrier inhibiting a holistic approach to business performance management (BPM) is the difficulty of technology integration across stovepiped

data sources. To overcome these barriers, most organizations focus on data integration of ERP, CRM, and SCM deployments, but the integration must also occur across personnel (i.e., organizational constituents). The role of the integrator should be played by the enterprise analytics team because this group is best positioned to solicit requirements, build data models, design reports, and integrate data across all data warehouse initiatives and business process owners. Incorporating Web analytics will be a challenge because virtually all Web channel statistics facilities use proprietary data models and business intelligence tools. Nevertheless, there are examples from some verticals (e.g., retail, telecom) where strong enterprise analytics teams have had success integrating Web analytics with other parts of the business.

For 10 years, enterprise analytics teams within IT have serviced business intelligence requirements for a cross-section of business process owners. Pushing Web analytics under the enterprise analytics umbrella will leverage these collaborative relationships for the ultimate benefit of the company. Thus, a central analytics group will consult with business process stakeholders about “actionability” of the data. Through this consultation, the enterprise analytics team will develop KPI measurements with a top-down tiered approach, then measure the business process to collect benchmarks. The increasing use of Web sites to automate various business processes only strengthens the argument to build these KPIs into a Web analytics solution.

Business Process Owners

The business performance management (BPM) life-cycle process includes setting a metric, measuring performance with that metric, and developing actionable business plans to guide future performance. The dominance of the Web analytics domain by marketing groups is evident because most reports and, consequently, BPM metrics are marketing-focused (e.g., cross/up-sell, lead generation). The marketing department should still play a major role, but organizations must realize that it is just one user group of a larger Web (and enterprise) analytics initiative. All business process stakeholders (e.g., sales, customer service, product managers, resellers) must participate by generating requirements and interacting with reports.

For example, auto manufacturers use the “car configurator” on their Web sites as an indicator of customer preference for car designs. Marketing has been able to feed this information to influence production schedules, but only recently have car dealers been given access to this information (or had it broken down by dealer geography). Now these dealers have better insight into which options to order (e.g., how many SUVs with a third seat). This example demonstrates how breaking down technical restrictions improved some collaboration regarding analytics, but it was not until the organizational restrictions were eliminated that

the benefit of this insight was fully realized (i.e., all business process owners were able to use the data).

Bottom Line

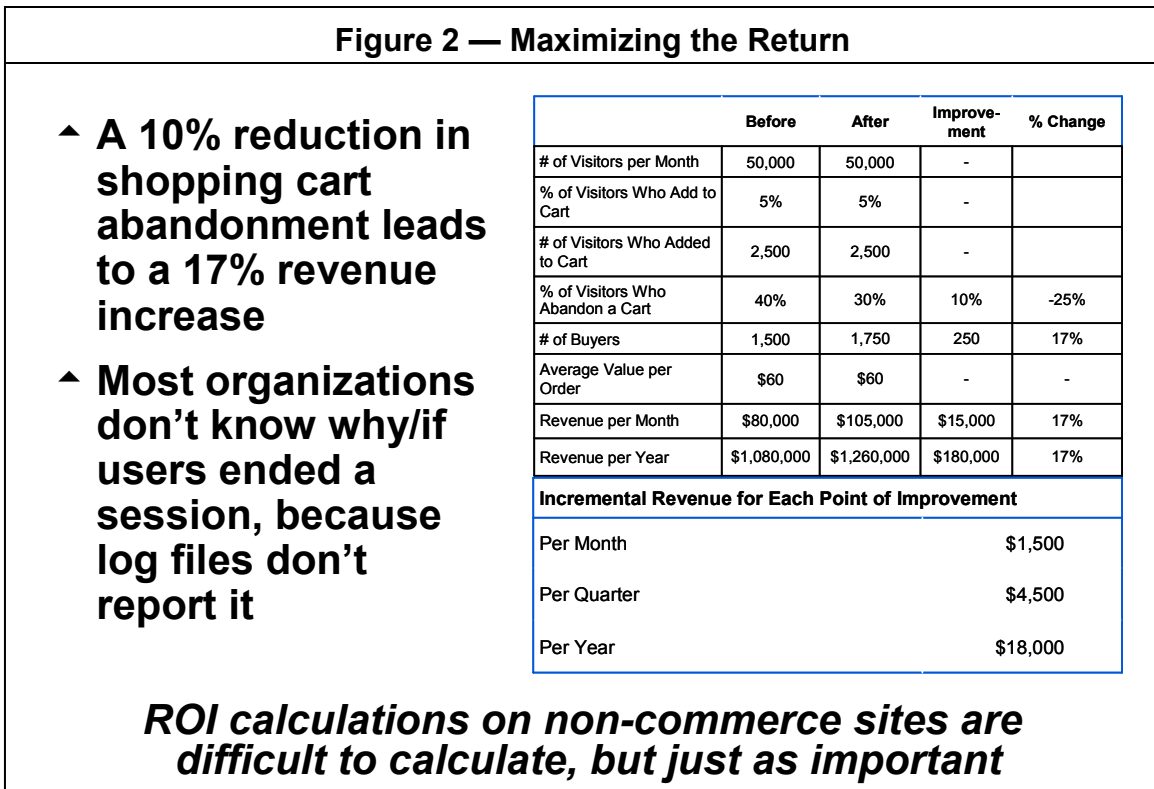
Organizational teams should be restructured with a broader role for enterprise analytics teams — to minimize the parochial view of Web activity and limited insight that data mart architectures provide. The infrastructure group and Web team should maintain control of measuring performance/reliability and usability metrics, respectively.

Measuring the Return on Investment From a Positive User Experience

By 2004, 75% of Global 2000 enterprises will have consistent Web site benefit metrics that are tracked regularly to show improvement over time. Metrics related to Web site performance (e.g., page view response time) and Web site design (e.g., number of clicks to accomplish a task) will be virtually universal across G2000 enterprise accounts. We have explained QoE as an amalgam of different Web diagnostic tools tied to process and measurements, which tie metrics to user behavior. Although metrics may vary, general categories related to customer loyalty, reduced sales cycle, self-service, etc. will map to Web site behavior types: content (information-focused), self-service (community-focused), application (commerce-focused), and collaborative (service-focused). Once the general category is identified, the specific formula to calculate the value of the metric must be determined by the enterprise. For example, metrics for commerce effectiveness must be linked to the execution of some customer-oriented target (e.g., this would be community, purchased merchandise, attending a product seminar) achieved after that customer viewed a particular Web page, but determining which customer target to choose depends on specific business processes. It is important to recognize the metrics designed to assess the business benefit of a Web site are unique to the goals and processes of that particular enterprise. Typically, a plethora of metrics will be adopted, but a manageable number (<5-10) should be used to manage any one user's behavior group (e.g., commerce, information, community, service).

Because the cost for Web site deployments and ongoing (i.e., multiyear) operations can easily surpass \$10 million, Web site business justification has become a top concern for G2000 organizations. Most predeployment justifications use pro-forma estimates of productivity improvements, cost savings, and increased revenue opportunities, but once the project is approved, these estimates are frequently disregarded. Instead our research indicates the business case for Web sites relies on the post-deployment collection of data to feed specific metrics that communicate the Web site's quality of experience and overall value. Tracking these metrics with an ongoing systemic process will be critical to ensuring the success of a Web site.

Figure 2 provides a simple calculation for an e-commerce site. Although the lost revenue opportunities resulting from a poor QoE for a commerce-oriented site are readily apparent, we believe QoE degradation dramatically impacts content, lead generation, and e-service-oriented sites as well. Often, poor usability leads users to quickly terminate their session. These terminated sessions directly lead to uninformed consumers, decreased lead generation, and unfulfilled service requests. Beyond the Web, these terminated sessions also have damaging impacts on the overall brand reputation of the organization.



Bottom Line

Fervent adoption of business-centric Web site metrics enables organizations to assess Web site investments based on key performance indicators linked to channel performance and contribution to sales, marketing, customer service, and product objectives.

Conclusion: User Recommendations

The Web channel is rarely responsible for all aspects of the customer life cycle. However, most Global 2000 organizations have upgraded the strategic abilities of their Web sites as primary customer channels to engage, transact, fulfill, and service customers. In this role Web sites will complement other channels in a hybrid-channel market strategy. As a result, the quality of experience (QoE) encountered by Web site users directly impacts the organization's brand image. We believe G2000 organizations should implement a QoE measurement framework across three categories: performance/reliability, usability, and clickstream analysis. Organizational groups charged with monitoring these metrics should be clearly identified to quickly identify lapses in QoE that jeopardize a brand's reputation.

Specifically, the server and network infrastructure team should monitor the Web site's performance and reliability, while the Web team should monitor usability metrics (e.g., customer's attitude about a Web site's facility). Fortunately, most G2000 organizations are already formalizing these responsibilities in both of these groups. However, our research indicates that clickstream analysis metrics are collected almost exclusively by the Web team. Although we do believe the Web team should be closely involved with clickstream data collection and should use the related reports to identify site design and layout issues, it is the enterprise analytics group that is best suited to manage the clickstream analysis process. In particular, the analytics team (often referred to as the "data warehouse team") already operates the infrastructure to handle massive data collection and has the expertise to customize reports and handle complicated data management tasks.

The cost of diligently measuring QoE will provide a significant return by ensuring Web sites are optimized to perform a particular task (e.g., commerce, lead generation, e-service, information dissemination).

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