

practices of the search engines; (2) pay the search engine providers to be listed on the paid sponsors' sections; and (3) consider liberating yourself from dependence on search engine traffic.

Either originating from a search engine (organically or otherwise) or coming from other sites and places, what is most important for an e-commerce site is to maximize the likelihood of customer transactions. Having a lot of visitors without sales is not what a typical e-commerce site is built for. Application Case 5.7 is about a large Internet-based shopping mall where detailed analysis of customer behavior (using clickstreams and other data sources) is used to significantly improve the conversion rate.

Application Case 5.7

Understanding Why Customers Abandon Shopping Carts Results in a \$10 Million Sales Increase

Lotte.com, the leading Internet shopping mall in Korea with 13 million customers, has developed an integrated Web traffic analysis system using SAS for Customer Experience Analytics. As a result, Lotte.com has been able to improve the online experience for its customers, as well as generate better returns from its marketing campaigns. Now, Lotte.com executives can confirm results anywhere, anytime, as well as make immediate changes.

With almost one million Web site visitors each day, Lotte.com needed to know how many visitors were making purchases and which channels were bringing the most valuable traffic. After reviewing many diverse solutions and approaches, Lotte.com introduced its integrated Web traffic analysis system using the SAS for Customer Experience Analytics solution. This is the first online behavioral analysis system applied in Korea.

With this system, Lotte.com can accurately measure and analyze Web site visitor numbers, page view status of site visitors and purchasers, the popularity of each product category and product, clicking preferences for each page, the effectiveness of campaigns, and much more. This information enables Lotte.com to better understand customers and their behavior online, and conduct sophisticated, cost-effective targeted marketing.

Commenting on the system, Assistant General Manager Jung Hyo-hoon of the Marketing Planning Team for Lotte.com said, "As a result of introducing the SAS system of analysis, many 'new truths' were uncovered around customer behavior, and some of them were 'inconvenient truths.'" He added, "Some site-planning activities that had been undertaken with the expectation of certain results actually had a

low reaction from customers, and the site planners had a difficult time recognizing these results."

Benefits

Introducing the SAS for Customer Experience Analytics solution fully transformed the Lotte.com Web site. As a result, Lotte.com has been able to improve the online experience for its customers as well as generate better returns from its marketing campaigns.

Since implementing SAS for Customer Experience Analytics, Lotte.com has seen many benefits.

A Jump in Customer Loyalty

A large amount of sophisticated activity information can be collected under a visitor environment, including quality of traffic. Deputy Assistant General Manager Jung said that "by analyzing actual valid traffic and looking only at one to two pages, we can carry out campaigns to heighten the level of loyalty, and determine a certain range of effect, accordingly." He added, "In addition, it is possible to classify and confirm the order rate for each channel and see which channels have the most visitors."

Optimized Marketing Efficiency Analysis

Rather than just analyzing visitor numbers only, the system is capable of analyzing the conversion rate (shopping cart, immediate purchase, wish list, purchase completion) compared to actual visitors for each campaign type (affiliation or e-mail, banner, keywords, and others), so detailed analysis of channel effectiveness is possible. In addition, it can confirm the most popular search words used by visitors for each campaign type, location, and purchased

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Application Case 5.7 (Continued)

products. The page overlay function can measure the number of clicks and number of visitors for each item in a page to measure the value for each location in a page. This capability enables Lotte.com to promptly replace or renew low-traffic items.

Enhanced Customer Satisfaction and Customer Experience Lead to Higher Sales

Lotte.com built a customer behavior analysis database that measures each visitor, what pages are visited, how visitors navigate the site, and what activities are undertaken to enable diverse analysis and improve site efficiency. In addition, the database captures customer demographic information, shopping cart size and conversion rate, number of orders, and number of attempts.

By analyzing which stage of the ordering process deters the most customers and fixing those stages, conversion rates can be increased. Previously, analysis was done only on placed orders. By analyzing the movement pattern of visitors before ordering and at the point where breakaway occurs, customer behavior can be forecast, and sophisticated marketing activities can be undertaken. Through a pattern analysis of visitors, purchases can be more effectively influenced and customer demand can be reflected in real time to ensure quicker responses. Customer satisfaction has also improved as Lotte.com has better insight into each customer's behaviors, needs, and interests.

Evaluating the system, Jung commented, "By finding out how each customer group moves on the basis of the data, it is possible to determine customer service improvements and target marketing subjects, and this has aided the success of a number of campaigns."

However, the most significant benefit of the system is gaining insight into individual customers and various customer groups. By understanding when customers will make purchases and the manner in which they navigate throughout the Web page, targeted channel marketing and better customer experience can now be achieved.

Plus, when SAS for Customer Experience Analytics was implemented by Lotte.com's largest overseas distributor, it resulted in a first-year sales increase of 8 million euros (US\$10 million) by identifying the causes of shopping cart abandonment.

Questions for Discussion

1. How did Lotte.com use analytics to improve sales?
2. What were the challenges, the proposed solution, and the obtained results?
3. Do you think e-commerce companies are in better position to leverage benefits of analytics? Why? How?

Sources: From Heightening customer loyalty and optimizing channels, SAS, Customer Success Stories sas.com/success/lotte.html (accessed March 2013). Copyright © 2016 SAS Institute Inc., Cary, NC, USA. Reprinted with permission. All rights reserved.

SECTION 5.8 REVIEW QUESTIONS

1. What is a search engine? Why are they important for today's businesses?
2. What is a Web crawler? What is it used for? How does it work?
3. What is "search engine optimization?" Who benefits from it?
4. What things can help Web pages rank higher in the search engine results?

5.9 Web Usage Mining (Web Analytics)

Web usage mining (also called **Web analytics**) is the extraction of useful information from data generated through Web page visits and transactions. Analysis of the information collected by Web servers can help us better understand user behavior. Analysis of this data is often called **clickstream analysis**. By using the data and text mining techniques, a company might be able to discern interesting patterns from the clickstreams. For example, it might learn that 60% of visitors who searched for "hotels in Maui" had searched earlier