



(left to right) **Santhosh Shanmugam**, Senior Statistical Modeler and Developer; **Dan Lynn**, Director of Strategy and Customer Insights and **Sandipan Ganguly**, Senior Statistical Modeler and Developer

Expedia grows revenue while customers reap bargains

The world's leading online travel provider runs SAS® predictive analytics to fight fraud, increase revenue and build customer loyalty. A three- or four-week SAS project focused on a particular element of Expedia's business can boost sales by up to 10 percent, worth tens of millions of dollars.

Industry

Hospitality and Entertainment

Business Issue

Expedia strives to offer customers low-cost deals while simultaneously increasing overall company revenue.

Solution

SAS® predictive analytics allows Expedia analysts to build models that run in real-time using massive data sets.

Benefits

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The Bellevue, WA-based travel company is a pioneer in offering hotel, plane and car reservations online. By striving to better understand its customers' desires, Expedia is finding innovative ways to increase revenue. The company relies on SAS software to mine and analyze the data it has gathered from a decade of Web traffic and \$18 billion in annual travel-related bookings.

"SAS gives us a clearer view of the millions of customers who come to our Web sites every day," says Dan Lynn, Expedia's Director of Strategy and Customer Insights. "Personalized, behaviorally triggered service is critical in online travel. Incorporating large assortments of preference variables into the analysis of huge databases like ours requires heavy lifting that only SAS provides. Now, faster than ever we can pass great deals to our customers, and the net ROI to us is huge."

Expedia applies SAS in three key ways:

- Inventory selection optimization.** When a hotel gives Expedia what SAS flags as a particularly good value deal, the Expedia Web site prominently displays the listing. "Good deals for the consumer are good deals for us," says Sandipan Ganguly, Senior Statistical Modeler and Developer.
- Web site design.** What makes us linger on Expedia's Web site? What motivates us to click through and eventually book a flight, hotel room or car? Expedia conducts regular comparisons of different Web site layouts, looking for the best combination of content and graphical images to drive

revenue. "We experiment to see whether a particular offering or display turns any needles," Ganguly says.

- Fraud reduction.** Expedia must "score" every credit card transaction within hundreds of milliseconds in order to decide whether to confirm a purchase on the spot or to hold it for a second look. If a transaction is later found to be fraudulent, the credit scoring system "learns" from the mistake and the SAS data mining models are automatically "retrained" to flag similar behavior in future transactions. "With SAS, we are reducing charge-backs because our predictive models can take brand new information and immediately crank out more accurate results. It's like automatic decision making in real time," says Santhosh Shanmugam, Senior Statistical Modeler and Developer.



Expedia™

Marketers routinely segment customers into groups so that they can target ad campaigns and promotional events accordingly. Instead of being locked into using predefined groups based on demographics, SAS lets Expedia "discover" customer segment groups based entirely on the customers' purchasing behavior. One surprising finding was the large number of

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travelers who turned out to be business travelers. This group's frequency of travel and the days and time they traveled better matched the established "business traveler group." Further analysis showed this new customer segment is much more sensitive than leisure travelers to seeing a full range of options specific to their time needs, so Expedia was able to create display and marketing specifically tailored to appeal to its newly discovered customer profile.

Another area where SAS predictive analytics helped was in the capture and tracking of preference details to track what happens when a hotel is given high marks from travelers and regional market managers. "We've found they receive a five to 10 percent boost in conversion for the following

year. This confirms the value of these customer-driven programs to our partners," Lynn says.

All of the automated programs and analysis involve very large data sets in databases managed in other vendors' products. "Other products are too slow when it comes to the complicated predictive modeling, and they can't handle the large data sets like SAS can," says Shanmugam. Best of all, the work Shanmugam and Ganguly produce is highly regarded. "Expedia has a highly data driven approach to success, and we know the calculations turned out by SAS are accurate and reliable. Our management appreciates how the insights uncovered by SAS make good business sense. So they trust the results."



**THE
POWER
TO KNOW.**

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