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Data Mining: Customer Data Knocking at Your Door



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There is valuable data many merchants don't convert to useful information, and that can have a profound impact on sales. Data points that often go unchecked include: items visited but not purchased, abandoning shopping carts because the shipping cost is too high or abandoning the cart because the user interface is clunky.

Every interaction an enterprise has with customers, partners or suppliers instigates a new trail of data that can create a deluge effect over a short period of time. Experts predict that within a few years, it won't be uncommon to see enterprises with networks and databases storing over 100 TB (terabytes) of information. Today's challenge is extracting the useful information that can be applied to improving operations from the less useful. That's where data mining comes in.

Even before this recent explosion of information, IT solutions targeting various industries and marketing under the term "data mining" have already gone through the hype phase with disappointing results. For example: traditional retail -- including food centers looking for ways to manipulate shopping behaviors to increase sales by the slightest of margins -- implemented these first-generation systems.

Many companies later found that these costly solutions created by IT generalists looking to capitalize on a booming sector were far too nonspecific to make real impacts. On the contrary, many of today's data mining solutions tailor to individual companies and market needs, and are built by providers experienced in specific sectors.

Gathering Data

One area data mining has caught on in tremendous fashion is the e-marketplace. The rapid growth of the Internet and e-business, the increase in online transaction processing and the expansion of large databases that support customer-facing applications have contributed significantly to this data explosion. This unprecedented growth is driving demand for data management solutions because of an increasing need to maintain easy access to historical information both for internal and external operations.

For example, a company may need to protect interests by retrieving historical financial transactions to satisfy customer inquiries and resolve claims. In other cases, corporate policy or government regulations dictate that data must remain accessible for years after it is collected. In terms of e-commerce, there is valuable data many merchants don't convert to useful information, and that can have a profound impact on sales. Data points that often go unchecked include: items visited but not purchased, abandoning shopping carts because the shipping cost is too high or abandoning the cart because the user interface is clunky.

One of our clients, for example, was able to get a 40 percent jump in the sale of an item by just lowering its shipping cost by 50 US cents to bring it under 10 dollars, which was a critical break point in the users' minds. The incremental margin from the additional sales offset the cost of the shipping fee reduction by approximately a 20:1 ratio. Another example is where an apparel customer was able to increase conversion of visitors that came to a product page by over 30 percent by adding an image for every color that the item was available in. By being able to see the item in that color, customers were more amenable to purchasing the item than having to guess how it would look in that color.

E-Commerce Fraud

One critical area often overlooked with respect to data mining is historical information pertaining to fraudulent transactions. E-tailers are on high alert as [credit card](#) fraudsters become more sophisticated and enjoy anonymity online. Smaller businesses are most at risk, as they are often considered easier prey for credit card fraud in comparison to larger online storefronts with more IT resources. However, even larger e-tailers fall prey, and when it happens, it usually ends up on the front page of *The Wall Street Journal*.

According to a recent report by [Gartner](#) (NYSE: IT), \$2 billion in e-commerce sales were lost in 2006 because of [security](#) fears. The firm estimates that half of those losses came from consumers avoiding sites that appeared to be less secure, while the remainder came from those refusing to buy online at all due to security concerns.

This is where data mining can be extremely valuable. While all companies implement at least some form of precaution to guard against online fraud, most don't couple with data mining systems that can add an additional layer of security. The trick to fraud is managing by exception. Let the e-commerce system catch the exception instead of trying to eyeball each order, then use historical trending to identify any weak points.

Be sure to check address verification systems (AVS) and screen orders with both traditional e-commerce systems and data mining.

AVS, which runs automatically when an order is placed, matches the customer's credit card number with his or her billing ZIP code. Ensure that your fraud prevention is not limited to credit card orders. Bogus checks and Western Union transfers also have a high incidence of fraud.

Screen orders that meet certain criteria for an additional level of verification. For example, screen all orders over \$200 going to a P.O. Box or scheduled for overnight delivery, so the order may be put on hold and reviewed before processed.

Data mining and analytics can dramatically reduce fraud by simply running a check report on select parameters two to three times a day, looking for unusual patterns. This will help to red-flag orders that are suspect. Even something as basic as this could cut fraud in an organization by 50 percent.

New Business Intelligence Systems

Most corporate information is not made available to the right people in a manner that makes sense, according to Jupiter Communications. To address this issue, new business intelligence (BI) systems utilize both data mining and Web portals to provide ubiquitous access to critical business information from anywhere an Internet connection is available. These systems offer a high degree of summarization, charting and visual representation of data (dashboard-style views) to improve productivity.

Several business intelligence solutions have recently hit the marketplace, including those from [Ignify](#), [Cognos](#) (Nasdaq: COGN) and [Business Objects](#). Ignify's platform, called the "BI Portal," enables enterprise performance management across multiple systems by tracking key performance metrics (KPIs) for each function across an organization. For example, easy-to-read business score cards enable managers to identify how many customers were serviced within a certain time frame and with what profit margins. A simple three-point warning system with green, yellow and red lights indicate system status on several business and key performance indicators. Alerts provide warnings to users when KPIs dip into danger zones.

The Cognos 8 business intelligence platform, by Cognos, also incorporates a complete range of BI capabilities such as reporting, analysis, scorecarding, dashboards and business event management but takes it further by extending access to the popular BlackBerry devices for users on the go.

This is the age of information, and businesses who can best transform raw data in useful information that streamlines or improves day-to-day processes will gain tremendous competitive advantages. As corporations continue to become more global and disparate, storing and tracking data will become increasingly difficult.

Data mining and business intelligence systems will ease data management, having evolved by combining solid data gathering, analytics and reporting methods that can be accessed from any device with Internet access. These newer systems can be used not only for traditional process refinement and historical trending, but also for nonconventional means such as beefing up security for online transactions.

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