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## We Know What You Ought To Be Watching This Summer

New Software Helps Web Sites Hone Their Recommendations; What Your Shoes Reveal

By SARAH MCBRIDE and VAUHINI VARA (July 31, 2007; Page D1)

Robb Hecht rents mostly dramas and science-fiction flicks from Blockbuster.com. So he was surprised when the movie service served up a recommendation for "Rize," a documentary about an urban dance style in South Central Los Angeles -- and even more surprised when he liked it.

That makes Mr. Hecht, an adjunct professor of marketing at New York's Baruch College, a success story for Blockbuster Inc., which has revamped the software on its Web site to persuade customers to rent more movies.

Previously, Blockbuster.com's recommendations relied heavily on the obvious: recommending another Jack Nicholson film or horror movie to somebody who had just watched "The Shining," for instance. But with newer software it began using about two years ago, the site now looks at subtler factors -- such as whether previous movies a customer rented were mindless or challenging, or whether they were plot-driven rather than character-driven.

Online purchase recommendations have been around for years, but they've often generated complaints for being simplistic or just plain wrong. These days, some Web sites are relying on increasingly sophisticated techniques to help steer customers to additional products.

The system Blockbuster uses, which was developed by a Cambridge, Mass., company called ChoiceStream Inc., works by assigning characteristics to an individual item and searching for other items that share the same characteristics. By combining that data with older techniques for making recommendations -- like looking at a consumer's past purchases, or seeing what other people who bought the same item also bought -- it comes up with a very targeted suggestion. ChoiceStream calls its technique "attributized approach."

Better recommendations have become crucial to online retailers as they try to keep their sales growing even as the numbers of new online shoppers are slowing. They're betting that more-sophisticated recommendation services can keep customers on a retail Web site longer and persuade them to buy more stuff while they're there.

"Creating this service that knows you, in this market of superabundance, is probably the single most important way of building loyalty," says ChoiceStream CEO Steve Johnson.

### What's Behind Those Web Site Recommendations

Here's how an online retailer might link from one item to another:

#### ■ Video

##### "Crash" & "Little Miss Sunshine"

Shared traits: dysfunctional social groups, dynamic pacing and an interdependent ensemble cast

##### "One Hour Photo" & "The Last King of Scotland"

Shared traits: a strong central character, sustained tension, disturbing events and moral questions

##### "Live Free or Die Hard" & "Unforgiven"

Shared traits: violent, macho and with expected endings

#### ■ Music

"The Police" compilation CD, Nick Drake's "Family Tree" collection, Arcade Fire's new album "Neon Bible" & Phish

Shared traits: passionate, intense, reflective, dramatic and earnest



Sources: Blockbuster; ChoiceStream

Mr. Hecht was steered to "Rize" by Blockbuster.com because he had at least one other musical in his queue ("Chicago") plus at least one other documentary ("March of the Penguins"), according to ChoiceStream. Combining that with the fact that, based on past rentals, Mr. Hecht enjoys edgy, urban movies, it recommended "Rize."

The point is to come up with recommendations that "may be non-intuitive but surprisingly enjoyable nonetheless," says a spokesman. Since adding the software, Blockbuster says it has lost fewer customers, in percentage terms, to rival services, and the number of movies in the average customer's "to watch" list has grown by almost 50%.

Besides ChoiceStream -- which also works with Time Warner Inc.'s AOL unit, Apple Inc.'s iTunes and Movielink, a service owned by a consortium of studios -- other companies creating a second generation of recommendation software have names like CleverSet Inc. and Omniture Inc.'s Touch Clarity.

"How do we help you find the things you had no idea you're looking for?" is how one eBay Inc. spokesman describes the question that in-house engineers



are working on, while declining to go into details. The online auctioneer says recommendations will likely make up part of the overhaul of the site that it will start unveiling later this year. Analysts say that it's important for eBay to find ways to squeeze more revenue out of the visitors to its site in order to keep growing, and better recommendations could be one way to accomplish that.

To that end, eBay in May paid \$75 million for a start-up called StumbleUpon that recommends Web content -- potentially including things like auction listings -- based on a user's browsing history. eBay hasn't yet said how it plans to integrate the StumbleUpon technology into its own service, though.

Elsewhere, discount retailer Overstock.com Inc. has started using software from ChoiceStream to better target its emails to customers by analyzing their tastes. Here's how it works: Say you visit Overstock and browse for shoes. When Overstock later launches an email-advertising campaign to get customers to buy jewelry, it can send you an email with personalized recommendations based on what it knows about your tastes from your shoe-browsing habits. Somebody with a weakness for sleek stilettos would likely be steered toward modern, stainless steel pieces rather than ornate or chunky jewelry, says CEO Patrick Byrne.

The targeted emails have increased the rate at which email recipients go on to make a purchase between 25% and 50%, says Mr. Byrne. "If you're listening to Nine Inch Nails versus Bach, it picks up an expression of what your taste is like, and then, as you go into books or movies or purses, it carries that on," he says. He compares the technology to a real-world salesperson at a store like Nordstrom: If she helps you shop for dresses 10 times, chances are she'll be able to also recommend shoes that you like.

"There's definitely more sophistication in the recommendation services now," says Sucharita Mulpuru, a senior analyst at Forrester Research who studies online sales and marketing. With more sites installing them, consumers are increasingly likely to stumble across some of these targeted recommendations as they surf the Web. Companies that implement them usually see at least a 10% bump in sales, she says.

Most older systems rely on a technique called "collaborative filtering" that looks at other customers who clicked on a similar product, and recommends other products they bought. Or they look at a consumer's purchase history and make suggestions accordingly, a technique called "behavioral targeting."

Those algorithms work well in certain situations, but not all. Basing suggestions on what other customers who bought that product did requires massive amounts of data on those other customers. The technique falls short when a product is brand new.

Alternatively, basing recommendations purely on past purchases can backfire when the purchase was a gift -- for example, when a person who once bought a

fishing rod for someone else is constantly nudged toward tackle boxes, wading boots and the like despite their lack of personal interest in the activity.

Amazon.com, some of its customers complain, is one site prone to this sort of faux pas. The retailer says it has worked hard to improve its recommendations by asking customers if their purchase is a gift so it doesn't get factored into the recommendations, for example, and encouraging customers to rate items they have bought so Amazon can improve its personalized suggestions. The online store also has a link on recommended items titled "Why Was I Recommended This?" so customers can get a better sense of how the system works. Amazon's recommendation software, which is updated regularly, is produced in-house.

Of course, some tried-and-true systems have hardcore fans. Many Netflix customers love the feature that makes suggestions based on the movies liked by other people who rate movies the same way they do. Greg Cervelli, a 30-year-old director of product management at business-networking site LinkedIn, says he recently switched to Blockbuster.com for movies but still checks back with his old Netflix account for recommendations.

Recommendation programs are also emerging as a key component of online music programs. ChoiceStream's technique of identifying characteristics for each product is similar to Pandora.com, which has cataloged 500,000 songs.

Pandora's analysts note whether each song contains any of the 400 musical attributes they track, ranging from whether they are played in major or minor key to the type of voice the singer has, and how dominant that attribute is. When listeners tell Pandora what songs they like, the software homes in on the underlying characteristics and serves up more songs accordingly. ChoiceStream powers the recommendations at eMusic.com Inc., a paid music-subscription service.

Not everyone is crazy about this flood of personalized recommendations, though. Linus Kafka, a lawyer turned historian who lives in Los Angeles, calls them "creepy" and delights in trying to trick the software. "Each time I ordered something, I would order something completely different and silly in order to sabotage the system," he says.

In the past, he has ordered philosophy tomes by Friedrich Nietzsche on Amazon and thrown in a couple of Danielle Steel paperbacks, in the hopes that readers who browse through the selection of her racy novels on the site will look at the "Customers Who Bought This Item Also Bought" section and see titles like "Thus Spoke Zarathustra."

"I don't like being targeted for marketing," he says. "I find it a compromise of my own privacy. I think they should sell me the item, and the relationship should end there."

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