

THE WALL STREET JOURNAL.

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<http://www.wsj.com/articles/SB10001424127887323777204578189391813881534>

WHAT THEY KNOW

Websites Vary Prices, Deals Based on Users' Information

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It was the same Swingline stapler, on the same Staples.com website. But for Kim Wamble, the price was \$15.79, while the price on Trude Frizzell's screen, just a few miles away, was \$14.29.

A key difference: where Staples seemed to think they were located.

A Wall Street Journal investigation found that the Staples Inc. website displays different prices to people after estimating their locations. More than that, Staples appeared to consider the person's distance from a rival brick-and-mortar store, either OfficeMax Inc. or Office Depot Inc. If rival stores were within 20 miles or so, Staples.com usually showed a discounted price.

WHAT PRICE WOULD YOU SEE?



"How can they get away with that?" said Ms. Frizzell, who works in Bergheim, Texas.

In what appears to be an unintended side effect of Staples' pricing methods—likely a function of retail competition with its rivals—the Journal's testing also showed that areas that tended to see the discounted prices had a higher average income than areas that tended to see higher prices.

Presented with the Journal's findings, Staples acknowledged that it varies its online and in-store prices by geography because of "a variety of factors" including "costs of doing business."

- How the Journal Tested Prices and Deals Online
(<http://blogs.wsj.com/digits/2012/12/23/how-the-journal-tested-prices-and-deals-online/>)

For years, the Internet, with its promise of quick comparison shopping, has granted people a certain power over retailers. At the click of a button, shoppers could find a better deal elsewhere, no travel required.

But the idea of an unbiased, impersonal Internet is fast giving way to an online world

that, in reality, is increasingly tailored and targeted. Websites are adopting techniques to glean information about visitors to their sites, in real time, and then deliver different versions of the Web to different people. Prices change, products get swapped out, wording is modified, and there is little way for the typical website user to spot it when it happens.



SNAPSAFE; HOME DEPOT; ROSETTA STONE

The Journal identified several companies, including Staples, Discover Financial Services, Rosetta Stone Inc. and Home Depot Inc., that were consistently adjusting prices and displaying different product offers based on a range of characteristics that could be discovered about the user. Office Depot, for example, told the Journal that it uses "customers' browsing history and geolocation" to vary the offers and products it displays to a visitor to its site.

Offering different prices to different people is legal, with a few exceptions for race-based discrimination and other sensitive situations. Several companies pointed out that their online price-tweaking simply mirrors the real world. Regular shops routinely adjust their prices to account for local demand, competition, store location and so on. Nobody is surprised if, say, a gallon of gas is cheaper at the same chain, one town over.

But price-changing online isn't popular among shoppers. Some 76% of American adults have said it would bother them to find out that other people paid a lower price for the same product, according to the Annenberg Public Policy Center at the University of Pennsylvania.

"I think it's very discriminatory," said Ms. Wamble, an insurance account manager in Boerne, Texas, who priced the Swingline stapler for the Journal this month. She was just



Staples.com appears to tweak prices based on a person's proximity to rival stores. In Texas, Trude Frizzell, left, saw a discount on a Swingline stapler compared with Kim Wamble, right, just a few miles away. *CATALIN ABAGIU FOR THE WALL STREET JOURNAL (2)*

10 miles or so down the road from Ms. Frizzell, but she saw higher prices on the Staples website than Ms. Frizzell did for all five products tested. Items tested included a pack of Bic pens, a case of orange masking tape, a set of crimped-end mailing tubes and a big safe.

It remains unclear precisely what formula Staples used to set online prices. Staples declined to answer detailed questions about the findings. It told the Journal that "in-store and online prices do vary by geography due to a variety of factors, including rent, labor, distribution and other costs of doing business."

It is possible that Staples' online-pricing formula uses other factors that the Journal didn't identify. The Journal tested to see whether price was tied to different characteristics including population, local income, proximity to a Staples store, race and other demographic factors. Statistically speaking, by far the strongest correlation involved the distance to a rival's store from the center of a ZIP Code. That single factor appeared to explain upward of 90% of the pricing pattern.

What economists call price discrimination—when companies offer different prices to different people based on their perceived willingness to pay—is commonplace and can be beneficial. Movie theaters give senior-citizen discounts. One traveler's willingness to pay top dollar for an airplane seat might mean other people will pay less.

In other cases, though, shoppers can be the loser. That same airline might easily just pocket the big spender's extra money and leave other prices unchanged.

Of course, not all price differences are instances of price discrimination. Prices driven down by competition wouldn't generally be considered discriminatory, for example.

Basing online prices on geography can make sense for various reasons, from shipping costs to local popularity of a particular item. Some retailers might naturally cluster in specific areas as well—a prosperous suburb, say—boosting the competitive pressure to discount.

But using geography as a pricing tool can also reinforce patterns that e-commerce had promised to erase: prices that are higher in areas with less competition, including rural or poor areas. It diminishes the Internet's role as an equalizer.

In the Journal's examination of Staples' online pricing, the weighted average income among ZIP Codes that mostly received discount prices was roughly \$59,900, based on Internal Revenue Service data. ZIP Codes that saw generally high prices had a lower weighted average income, \$48,700.

Staples didn't comment on the income split beyond saying that the company offers a low-price guarantee.

Online businesses have experimented with tailored offers since the dawn of the Internet era. In 1997, a startup called Personify sold software that tried to personalize Web pages for shoppers. For example, people taking a certain path through a site could be tagged as price-conscious and be shown low-end items, said Eileen Gittins, Personify's former chief executive.

"The idea was more advanced than the technology could support at the time," said Ms. Gittins. Today she runs an online company, Blurb, that lets people make books using their own photos.

In 2000, Amazon.com Inc. infuriated many customers when it sold DVDs to different people for different prices. Amazon called it merely a test and ultimately refunded the price difference to people who paid more.

In 2010, the Journal reported that Capital One Financial Corp. was using personalization technology to decide which credit cards to show first-time visitors to its website. Recent Journal follow-up testing indicated that Capital One was showing different users different cards first—either those for "excellent credit" or "average credit."



The Wall Street Journal is conducting a long-running investigation into the profound transformation of personal privacy in America.

Selected findings:

- The Wall Street Journal reconstructs the clash over the counterterrorism program (</articles/SB10001424127887324478304578171623040640006>) within the administration of President Barack Obama. (12/12/12)
- Companies today are increasingly tying people's real-life identities (</articles/SB10001424127887324784404578143144132736214>) to their online browsing habits. (12/07/12)
- Two students are outed as gay—provoking a crisis within their families—by a Facebook privacy loophole (</articles/SB10000872396390444165804578008740578200224>) . (10/12/12)
- Suspicious spouses are taking investigations into their own hands (</articles/SB10000872396390443995604578002751421246848>) as snooping technologies become cheaper and easier to use. (10/6/12)
- Americans' license plates are now being tracked not only by the government, but also by repo men (</articles/SB10000872396390443995604578004723603576296>) who hope to profit from the information. (10/2/12)
- Google bypassed the privacy settings on millions of Web browsers on Apple iPhones and computers—**tracking the online activities** (</articles/SB10001424052970204880404577225380456599176>) of people who intended that kind of monitoring to be blocked. (2/17/12)
- The government follows the movements of thousands of Americans a year by secretly monitoring their

cellphone records (/articles/SB10001424052970203733504577024092345458210) . (9/9/11)

- iPhone and Android apps secretly shared data (/articles/SB10001424052748704694004576020083703574602) about their users, a Journal investigation found. (12/10/10)
- Top apps on Facebook transmit personal identifying details (/articles/SB10001424052702304772804575558484075236968) to tracking companies, a Journal investigation found. (10/18/10)
- Plus, the global surveillance bazaar (/articles/SB10001424052970203611404577044192607407780) , a secretive phone-tracking "stingray" (/articles/SB10001424053111904194604576583112723197574) and RapLeaf's clever way of figuring out Web surfers' real names (/articles/SB10001424052702304410504575560243259416072) .
- See full privacy coverage (http://online.wsj.com/public/page/what-they-know-digital-privacy.html?mod=WSJ_topnav_na_tech)

Capital One says it gathers data about visitors while they are on its website and uses this information to suggest different products to them. "We do not use any of this data in credit decisioning or underwriting," a Capital One spokeswoman said. "We're making an educated guess about what we think

consumers will like."

This year, researchers in Spain studied more than 200 online retailers and found a handful of examples of price differences—including at Staples within Massachusetts—that appeared to be based on location and other factors. Those findings suggest that Staples' price adjustments have been present at least since this summer.

It is difficult for online shoppers to know why, or even if, they are being offered different deals from other people. Many sites switch prices at lightning speed in response to competitors' offerings and other factors, a practice known as "dynamic pricing." Other sites test different prices but do so without regard to the buyer's characteristics.

To find differences that weren't purely the result of dynamic pricing or randomized tests, the Journal conducted preliminary scans by simulating visits from different computers to a variety of e-commerce sites. If a website showed different prices or offers, the Journal then analyzed the site's computer code and conducted follow-up testing.

The Journal's tests, which were conducted in phases between August and December,

indicated that some big-name retailers are experimenting with offering different prices and products to different users.

Some sites, for example, gave discounts based on whether or not a person was using a mobile device. A person searching for hotels from the Web browser of an iPhone or Android phone on travel sites Orbitz and CheapTickets would see discounts of as much as 50% off the list price, Orbitz said.

Both sites are run by Orbitz Worldwide Inc., which in fact markets the differences as "mobile steals." Orbitz says the deals are also available on the iPad if a person installs the Orbitz app.

"Many hotels have proven willing to provide discounts for mobile sites," said Chris Chiames, Orbitz's vice president of corporate affairs. Hotels on Orbitz mobile sites also offer discounts "that might target shoppers in a specific geographic region," as determined by the physical location of the user, as well as "other factors."

Often, sites tailored results by geography. In the tests, Discover, for instance, showed a prominent offer for the company's new "it" card to computers connecting from cities including Denver, Kansas City, Mo., and Dallas, Texas. Computers connecting from Scranton, Penn., Kingsport, Tenn., and Los Angeles didn't see the same offer.

A Discover spokeswoman said that the company was testing the card, but that for competitive reasons, it wouldn't comment further on its "acquisition strategy" for new customers.

At home-improvement site Lowe's Cos., prices depend on location. For example, a refrigerator in the Journal's tests cost \$449 in Chicago, Los Angeles and Ashburn, Va., but \$499 in seven other test cities. Lowe's said online shoppers receive the lower of the online store price or the price at their local Lowe's store as indicated by their ZIP Code.

Home Depot's website offered price variations that appeared to be based on the nearest brick-and-mortar store as well. A 250-foot spool of electrical wiring fell into six pricing groups, including \$70.80 in Ashtabula, Ohio; \$72.45 in Erie, Pa.; \$75.98 in Olean, N.Y. and \$77.87 in Monticello, N.Y.

The company said it uses "IP address," a number assigned to devices that connect to the Internet, to try to match users to the closest store and align online prices accordingly.

Location also seemed to be important for some international companies. The Journal

saw Rosetta Stone, which sells software for learning languages, offering discounts of as much as 20% for people who bought multiple levels of its German lessons from certain locations in the U.S. or Canada, but not others from the U.K. or Argentina.

Rosetta Stone said it sometimes tests and offers different product “bundles” in different places. It also personalizes its suggestions based on how the visitor gets to the site, Rosetta Stone said—whether from a search engine, a social-media link, a mobile device or a PC. “We are increasingly focused on segmentation and targeting,” a spokesman said. “Every customer is different.”

The differences found on the Staples website presented a complex pricing scheme. The Journal simulated visits to Staples.com from all of the more than 42,000 U.S. ZIP Codes, testing the price of a Swingline stapler 20 times in each. In addition, the Journal tested more than 1,000 different products in 10 selected ZIP Codes, 10 times in each location.

The Journal saw as many as three different prices for individual items. How frequently a simulated visitor saw low and high prices appeared to be tied to the person’s ZIP Code. Testing suggested that Staples tries to deduce people’s ZIP Codes by looking at their computer’s IP address. This can be accurate, but isn’t foolproof.

In the Journal’s tests, ZIP Codes whose center was farther than 20 miles from a Staples competitor saw higher prices 67% of the time. By contrast, ZIP Codes within 20 miles of a rival saw the high price least often, only 12% of the time.

Staples.com showed higher prices most often—86% of the time—when the ZIP Code actually had a brick-and-mortar Staples store in it, but was also far from a competitor’s store. In calculating these percentages, the Journal excluded New York City and used the more than 29,000 “standard” ZIP Codes in the 50 states and District of Columbia. This meant things like ZIP Codes with only post-office boxes weren’t counted.

Prices varied for about a third of the more than 1,000 randomly selected Staples.com products tested. The discounted and higher prices differed by about 8% on average.

There were a few areas of the U.S. and its territories that offer exceptions. The Journal found that Puerto Rico was generally shown the higher prices no matter how close the ZIP Code was to local OfficeMax or Office Depot outlets. For Guam, on the other hand, tests of Staples.com almost always returned the lower prices, even though the nearest U.S. OfficeMax or Office Depot is listed online as being in Hawaii, nearly 4,000 miles away.

New York City, too, appeared to be a special case. Tests of Staples.com using ZIP Codes in the boroughs of the Bronx, Manhattan and Staten Island consistently saw higher prices, while Brooklyn and Queens saw almost only the discounted prices. This despite the fact that all parts of New York City look to be within 20 miles of a Staples competitor, according to the websites.

As a final test, the Journal ordered two separate Swingline staplers from Staples.com, from two nearby ZIP Codes—one costing \$14.29 and the other one \$15.79. The staplers arrived the same day. They appear to be indistinguishable from one another and do an equally thorough job of stapling.

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