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# A New Secret Weapon for Electronics Shoppers

By DAMON DARLIN  
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IF only shopping for electronics were as easy as buying a car.



Matthew Ryan Williams for The New York Times

Oren Etzion is a co-founder of Decide.com.



Matthew Ryan Williams for The New York Times

Shopping with a smartphone.

There was a time not so long ago that buying a car was one of the worst shopping experiences. As you drove off the dealer's lot, you couldn't escape the feeling that you hadn't gotten the best deal.

Then something changed that made shopping for a car almost, well, fun, like shopping is supposed to be.

That something was information. Much to the annoyance of the dealers, a car buyer could obtain reliable data on auto prices. For only a few dollars, [Consumer Reports](#) estimates what a dealer paid for the car and what, after a fair markup, the buyer should pay. A shopper often got enough information to know when it would be the best time to buy the car.

Buying a camera or a smartphone isn't as easy because we lack information about prices. There is the illusion that the Internet has provided what we need to know about the prices, but that jumble of information makes any buying decision more confusing and anxiety producing.

The fact of the matter is, the shopper is not on a level playing field with the retailers and the manufacturers. They know, thanks to the Internet, more about you and your intentions than you could ever know about theirs. Every time you look at a product on a site, every time you buy a product online, you are providing valuable signals.

When companies scrape the Web and collect those billion of signals and sophisticated software collates the data and interprets it, you don't stand a chance. It is just too difficult and expensive for you to gather all the information. And in any case, you probably lack the degree in mathematics and computer science needed to parse the data.

Yet nearly everything you spend money on is determined by the algorithms they create. The prices of your airline ticket and hotel room, even your rent, are determined this way. Electronics and other consumer goods are priced the same way.

Over the last few years, price comparison sites like [Pricegrabber.com](#) and [Bizrate.com](#) have proliferated. Google and Bing have started providing similar information. That neatly solved the where-to-buy problem.

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Along came price tracking sites, like [NexTag.com](http://NexTag.com), that provide historical information. It is certainly useful to know where you can get a product for just a few dollars less, especially when those sites also calculate taxes and shipping costs for you.

Price-alert sites like [FreePriceAlerts.com](http://FreePriceAlerts.com) inform you by e-mail when the price of a coveted item drops. That all these services are available on mobile devices that you can use in stores to determine the best price has certainly made shoppers a lot smarter.

Perhaps the biggest consumer weapon arrived this year in the form of [Decide.com](http://Decide.com). It is a Web site, and more recently an [app for mobile devices](#), that collects and mines billions of transactions to determine what the best price is and whether there will be an even better price soon.

"It's the first time when-to-buy is addressed," said Mike Fridgen, Decide's chief executive officer.

For example, Decide.com said last week with 81 percent confidence that the Panasonic Viera 50-inch plasma TV (model TC-P50S30), a popular model, would drop within the next two weeks. It also predicted, with 62 percent confidence, that a new model would come along within three months.

Scoff if you will, but a week before [Thanksgiving](#), Decide.com was advising shoppers to hold off buying a 16-gigabyte [iPad](#) because it predicted a price drop. Apple did lower the price of that model by \$41 on [Black Friday](#), the big shopping day that follows Thanksgiving.

Then again, it suggested you would be safe to buy the 64-gigabyte model before Thanksgiving, but Apple lopped \$61 off the price on Black Friday.

"We are not clairvoyants," said Oren Etzioni, a University of Washington computer science professor who co-founded Decide. "We give consumers visibility."

Decide is run by many of the same people who built Farecast, a site that gave consumers a fighting chance against the airlines, which are constantly changing prices to match demand.

"Consumers have no access to big data," said Mr. Etzioni, who also founded Farecast.

After he sold Farecast to Microsoft for \$115 million — it is now part of the Bing search engine — Mr. Etzioni went looking for another consumer problem to solve. He discovered that there was also considerable price volatility in electronics. Certainly, over the long term, the prices of electronics steadily drop. But during the shelf life of a new product, prices rise and fall. And, to Mr. Etzioni's surprise, it was not random volatility. Companies were constantly changing prices to meet changing demand just like the airlines.

That meant his company's computers could search the Web for prices of products — it looks at 10 billion of them in a 60-terabyte database — note changes and then look for patterns. It also searches for news reports and rumors in order to guess when new models may be coming out. Mr. Etzioni calls it "scaling information extraction."

He said that Bill Gates, the co-founder of Microsoft, had recently stopped by his lab at the University of Washington and looked at Mr. Etzioni's research. "He was surprised by the degree of volatility in consumer electronic prices, which reminded me just how unaware even the most savvy people are of the prevalence of dynamic pricing in consumer electronics," he said.

"We really feel the industry needs an honest broker," Mr. Etzioni said.

The access to big data and analytics improves how we make decisions. That this information is available on mobile devices only enhances its utility. The increased information transparency coupled with the use of smartphones in stores is driving a consumer revolution, said Mr. Fridgen, because it provides shoppers the information they need when and where they need it.

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The balance of power has shifted, he says. Most retailers know that shoppers can easily find a better deal using their mobile devices. Almost half of American retailers have a policy allowing store personnel to negotiate prices, he says.

As the software gets more refined, the power relationship between consumers and the retailers and makers will change, although, Mr. Etzioni concedes, it will never really be a level playing field.

Guessing where prices are going is a big step forward. It was not easy, and it is still not complete. But Mr. Etzioni already has his eye on the next problem, which he says is even harder: a Web site that tells you what to buy. The decision-making process, it turns out, is remarkably complicated because he has to build an algorithm, a personalized "value formula," that finds the sweet spot for each shopper. "Some people value some things more than others," he said.

"What we really see, and I am very excited by this, is the increased transparency," Mr. Etzioni said. "The inexorable trend is towards transparency."

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