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Sometimes it's relatively easy to know what your customers are doing. In e-commerce, advances in tracking and analytics have made it possible for retailers to understand what individual customers are doing *before* they make a purchase, and to gather and analyze hundreds and thousands of data points to identify trends.

Brick-and-mortar stores haven't had the same advantage.

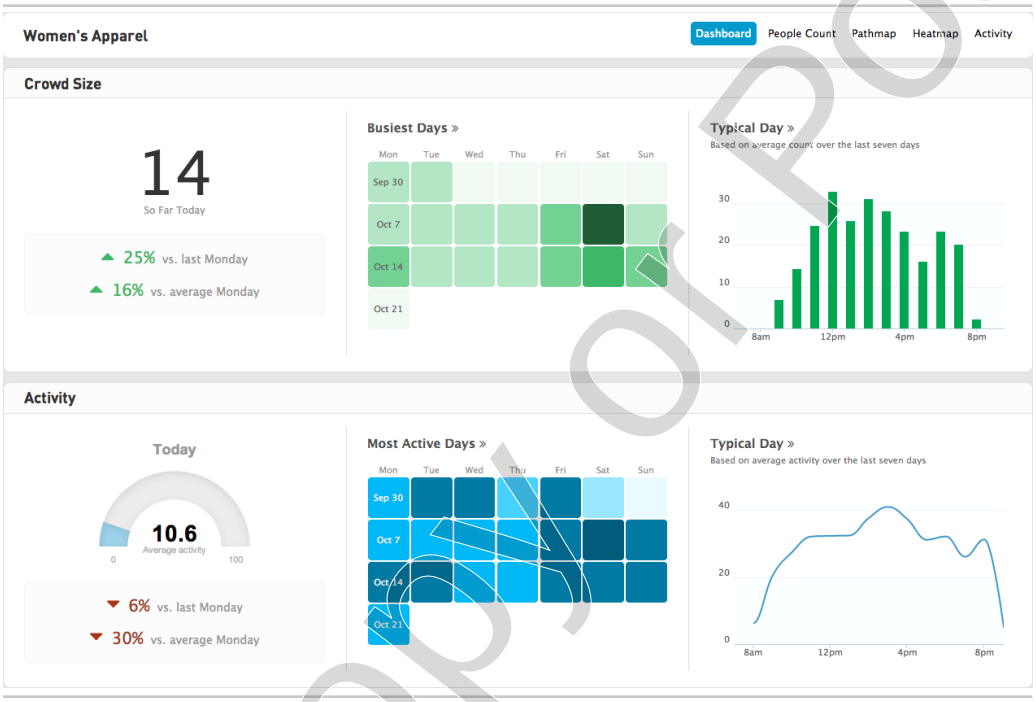
"Retailers are all using scanner data to track what happened at the point of *sale*," says Sam Hui, an associate professor of marketing at NYU's Stern School of Business. "But they have no idea what's really happening at a point-of-purchase *decision*."

This is changing with the emergence of location analytics. Take Alex and Ani, which designs and retails jewelry, and Belk, a department store chain. Both have signed on with Prism Skylabs, a software company, to map in-store customer behavior.

By using a store's existing security cameras, or installing new ones, Prism (no relation to the NSA program) is able to track the movement of a store's customers and identify patterns. "We're not really looking at any individual; we're looking at what a group of people over a period of time do," says senior vice president of managed services Cliff Crosbie. "That's the really big thing: Identifying what a volume of people do over a period of time, and how you read that information."

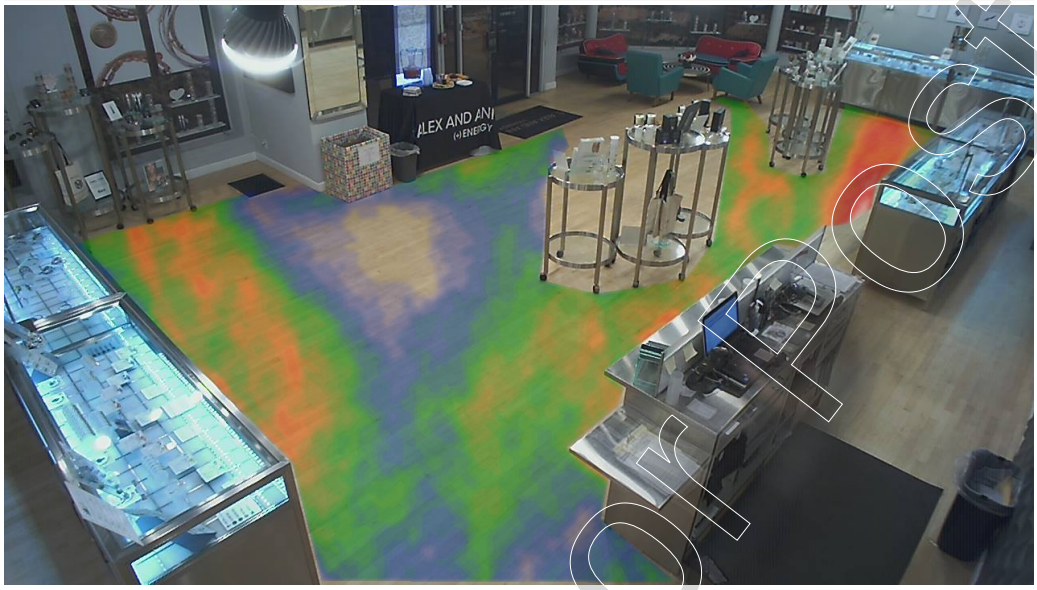
In many ways, Prism is capturing the simplest aspects of shopping, aspects ecommerce websites now take for granted. "Retailers want to know what parts of their store are busy, and where customers

particularly shop. So, if there's a promotion on, when do people stop there and what do they do?" Prism can also track what happens on individual days, or over time, using a dashboard like this (rather than reams of Excel spreadsheets):



These simple, color-coded data visualizations allow retailers to turn a store floor into an analytics narrative. (A new version also takes weather into account.)

Prism can also convey information on customer movements as a heat map. Consider this example from Alex and Ani during a pilot program during last year's holiday season, which tracked customer movement on the floor over a three-week period. The redder the location, the more frequently it was trafficked:



For chief technology officer Joe Lezon, the results were both helpful and surprising. “We now know that there was a certain area in our store people went to more often,” he told me. “We also realized that 98% of the people turned right when they first entered the store.” Lezon, along with Alex and Ani’s head of merchandising and head of sales operations, used the data to inform product placement.

In one instance, a slower-moving product was moved to a more trafficked location, resulting in an uptick in sales. And when the location of store’s more popular items were shifted, Lezon and his team were able to watch the process by which customers were able to locate them.

Both Lezon and Greg Yin, Belk’s vice president of innovation, told me that the heat mapping is particularly valuable when it comes to maximizing the value of staffing – making sure customers have a salesperson to assist them, easing the burden of the busiest times on sales associates.

Yin also says collecting and visualizing this data has helped his company test out in-store assumptions quickly. “I don’t think we’re in a place in the industry right now where we can invest 12, 18 months in a long [research] project because the technology will have changed by then,” he explained. “It’s not about building out big, long-term solutions. It’s about building a foundation in our stores and online so we can move as our customer moves.”

And while there are some privacy concerns, Prism, unlike other kinds of online tracking, promises a level of anonymity.

“We’ve had cameras in stores for years,” Yin reminds me. “But the nice thing about Prism is that it’s anonymizing. There’s no personal data being reflected because it’s all aggregated.” At the same time,

he recognizes that "when we're talking about location-based marketing, we're really talking about personalization."

And when it comes to personalization, there has to be a give-and-take between the customer and the store; "research shows that many customers are willing to opt into these kinds of things as long as there's some kind of [benefit] in exchange."

He notes, however, that the kind of bartering with personal information that's resulted in so many successful recommendation algorithms, for example, doesn't necessarily translate to the in-store experience. "We have to understand that the online customer is different than the in-store customer, and that the expectations might be different," he says. "When you get into facial recognition and trying to assess out the demographics of a customer coming into your store, then you're getting into a little bit more of a gray area."

And when it comes to just physically walking into a store, there's no real way for a customer to opt out of becoming a data point that, presumably, might make the shopping experience better in the future. A 2013 Pew study found that 64% of American adults cleared their cookies and browser history to become less visible online; even Prism's Cliff Crosbie notes that more people are switching off their WiFi in stores. While Prism's technology removes the actual images of customers – something Crosbie says is "the right thing" to do – being tracked is still a hidden part of the shopping experience.

This is all the more important considering the fact that companies are just starting to experiment with how location analytics can both improve a shopper's experience and boost their own sales. "We can correlate a slight uplift in the sales for slower moving products," says Lezon."But in general, this is a tough metric."

"We could definitely see, after changing a display, the traffic really picking up there," Yin explained. "The next obvious piece is to really be able to triangulate some sales against that."

Those sales are what's most important to Yin. "I don't come in every morning and say, "How am I going to innovate today? That doesn't really exist," he explains. "The question is, 'How do we drive business? How do we provide a great customer experience? How do we best equip our associates?"

"This is a really interesting time in retail," he continues. "All of these technologies are starting to come together – whether it's mobile, whether it's social, whether it's analyzing a lot of data – and they're coming together to meet the customer. At the end of the day, understanding customer behavior in stores and being able to take actions on it is a problem we're trying to solve."

For Joe Lezon, the ultimate goal is the coupling of data based on a customer's online *and* in-store experience.

"My ideal situation, to be honest, is: Gretchen, you walk into my store," he says to me. "I know who you are. I know why you're there: Your daughter's birthday is next week and you want to buy her a gift. At the same time, I know what you've purchased in the past so I can actually help direct you to the right products."

"How do you merge all the data together to get a full 360-degree view of the customer? That's where all this is going."

Imagine what that visualization might look like.

Editor's note: This post was updated on May 9 at 2:30pm ET.

Gretchen Gavett is a senior editor at Harvard Business Review.