MASTERCARD HELPS MERCHANTS **UNDERSTAND CUSTOMERS** AFTER CHECKOUT

Subway almost scrapped the $5 Footlong; McDonald's All Day Breakfast was a toss up. Mastercard's analytics service helped save them both. Here's how the payments company analyzes transaction data to gauge whether strategies will sink or swim.

Mastercard technology powers **73 billion** transactions a year, helping merchants move **$5.9 trillion** in **150 currencies.** And every one of those digital payments leaves a trail of data ripe for capture — on individual consumer behavior, global trade and every rung of commerce in between.

"At this point, the data, and how we work with the data, is as important as the transactions themselves," says Mastercard's president of operations and technology Ed McLaughlin.

The tech giant is best known as a digital payments company, putting 2.5 billion cards adorned with interlocking red-and-
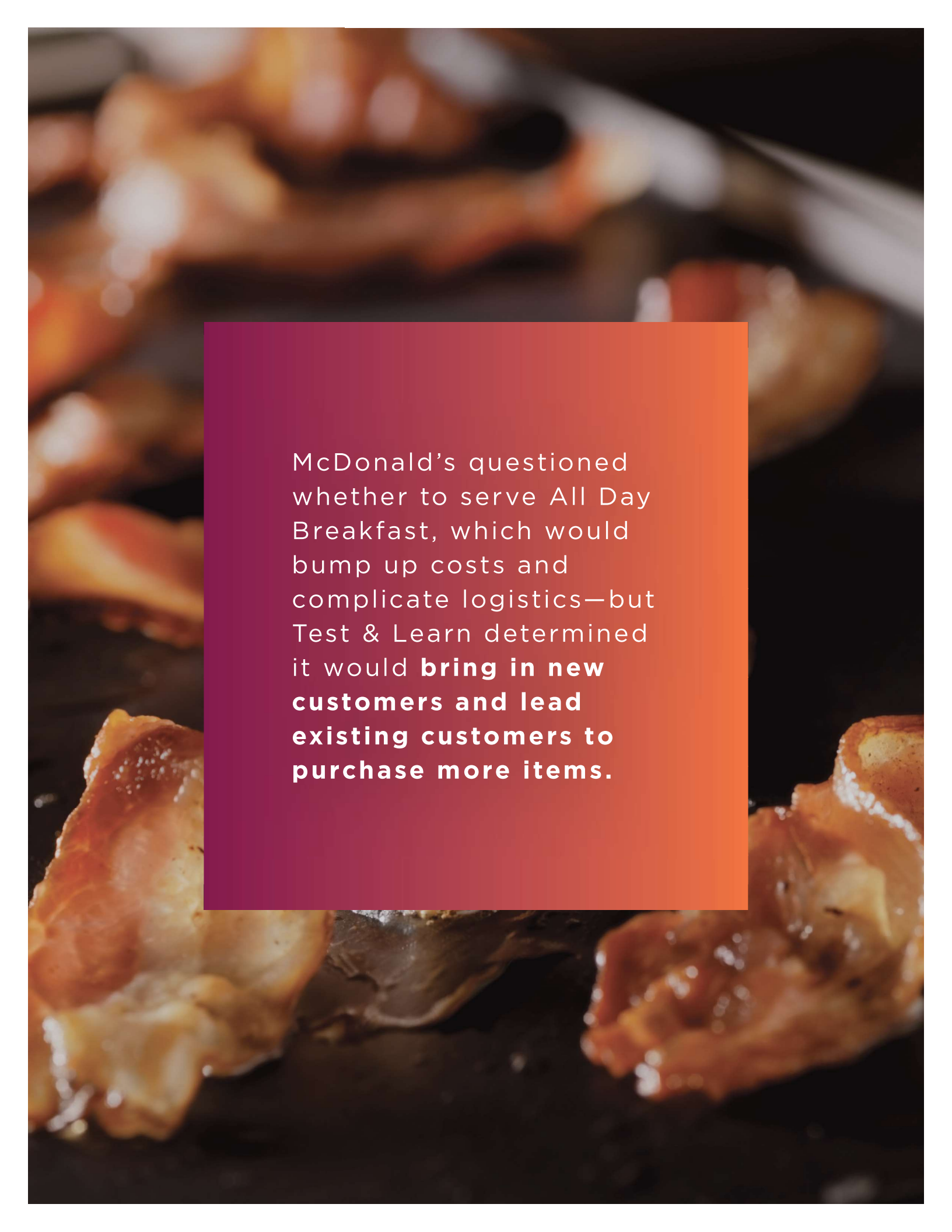
yellow circles in consumers' wallets. But Mastercard's trove of transaction data has also opened the door to a lucrative side hustle as an analytics consultancy, offering merchants insight into how new strategies will affect their bottom lines. The impact on Mastercard's own bottom line has been dramatic; since 2018, its data services have been growing faster than its core business offerings.

HOW IT WORKS

Mastercard helps merchants see the pixels in the context of the bigger picture. As data experts, it can enable, say, a retailer to find patterns in the purchases that take place within its own four walls. And as a global platform that stores plenty of anonymized data, it can also offer that retailer the ability to understand its customers, neighborhood and category beyond the confines of its own shop.

"We can see things like, where do people who are shopping with you generally shop? What do they do before and after

McDonald's questioned whether to serve All Day Breakfast, which would bump up costs and complicate logistics—but Test & Learn determined it would **bring in new customers and lead existing customers to purchase more items.**

they shop with me?" says McLaughlin. That means an expanded view of both customers and local sales patterns — like when foot traffic spikes and how a business is performing compared with area competitors.

> ## "ONE OF THE GREATEST PREDICTORS OF SUCCESS
> is not only what you're doing but what everyone else on your block is doing."

Based on aggregate data, for example, Mastercard can help a merchant decide on the optimal time to open in the morning or where else they could succeed by pinpointing neighborhoods where similar businesses are thriving. "What a wonderful way to think about expanding, one of the riskiest things for a small business to do," says McLaughlin.

Mastercard became a power player in this category in 2015 with its $600 million acquisition of Applied Predictive Technologies (APT), whose Test & Learn software allows companies to determine how initiatives will fare before investing in them. The idea is for large companies to avoid the potential money pit of launching a new product by conducting trials at a few test sites and using predictive analytics on the data produced to model what a full-scale roll out would look like.

The process begins with a question, McLaughlin says: Should a bank extend its store hours? Should a retail chain open up a new location? Should McDonald's serve All Day Breakfast?

The latter is one of McLaughlin's favorite Test & Learn success stories, and the answer, by popular demand, was yes. With sales of breakfast items soaring, the fast-food chain wondered whether offering them 24/7 would boost revenue. There are risks to expanding a menu, including ingredient costs and the logistics of throwing more tasks at a high-volume, short-order kitchen. But the analysis predicted, and delivered, a doubly optimistic outcome: All Day Breakfast would bring in new late-brunching customers and up the margins of existing customers' checks.

ROI is determined by more than simply sales, of course. "You need to make sure you're not just measuring what you're looking for but any unintended consequences around it," says McLaughlin. "It's not just, are they buying more breakfast? But do your overall sales get impacted or go up and down? Do you have a novelty effect where you get a surge [but] it's actually going to sparkle and fade?"

About 40% of experiments are killed before launch — and knowing they'll flop is just as valuable as getting the green light. In one case, a food market chain tested a new lunch item in select locations. It was an instant hit, and, based on APT insights, it was taken off the menu almost as quickly. The new product was *so* popular that it was undercutting sales of other more profitable menu items, resulting in a net loss.

Subway's famed $5 Footlong was almost slashed for similar reasons; an initial trial showed that increased sales did not offset the price decrease. But a Test & Learn simulation showed that Footlong customers were frequently adding on items like chips and drinks, boosting overall profits.

The potential is course-changing for businesses but reaches beyond companies' bottom lines. Mastercard has partnered with governments and nonprofits to study trickle-down socioeconomic effects, like how local commerce shapes cities' standards of living. "By combining commerce statistics with crime statistics, we can actually build a business case for public safety," says McLaughlin. A well-placed grocery store, for example, could have significant impact on a community's overall ability to thrive. "We can show that as things become safer, the types of stores and merchants change. The hours they're open becomes different." Insights like these can guide investment in public safety and urban planning. Mastercard has also used predictive analytics to assist in disaster relief efforts; when hurricanes hit Florida and Texas in 2017, Mastercard provided emergency services vehicles with real-time updates on which gas stations were low on fuel.

DATA OPENING THE DOOR

Mastercard's expansion into data services was, in many ways, "a natural next step," says Aarti Sharma, vice president of Mastercard and head of its data warehouse.

It was already processing 450 million transactions daily and recording anonymized data on each one — and while many companies are now playing catch up on organizing the data they capture, Mastercard has long had rigorous structuring and labeling practices in place to advance functions like customer service and user verification. Digital payments companies recognized early on, for example, that analytics could help close the loop on what McLaughlin considers a perennial industry problem: "Anything you do to make [a payment] more secure tends to make it a lot less convenient."

Mastercard's latest advancement in this space came through another acquisition, NuData Security, which uses machine learning and behavioristics to remove friction from the verification process. By picking up on payers' digital habits, the software can identify them with greater ease and certainty. "We can learn over time, in a very specific way, how you hold the device, how fast you type, the angle you do it. It's basically gathering and observing how you use [your device], which is almost impossible for a fraudster to recreate," says McLaughlin.

Trust becomes especially critical when third parties are getting a piece of the action, as with Test & Learn. At Mastercard, the solution is to deal in conclusions, rather than selling the data they're based on. Merchants who use Test & Learn will never see details of Mastercard's 450 million daily transactions, which are scrubbed and anonymized. Instead, they're offered insight on trends and correlations extracted from that data that can be used to guide strategy. Not only does this practice keep user identities safe; it also ensures reliable outcomes, Sharma adds. "Scrubbing helps remove data anomalies and thus helps provide better and more accurate insights."

Ultimately, Sharma says, "data is of no value if it cannot be used to enable insights," and that's exactly what Mastercard's analytics services offer merchants — the ability to take guesswork out of whether a strategy will sink or swim, replacing flimsy predictions with yes-or-no answers. The work of the strategist, then, becomes asking the right question. ■

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