Retailing

Blockchain May Help Walmart Stop Bad Food

- **The technology behind bitcoin could speed recalls**
- **"That's the difference between days and minutes"**

Mention blockchain, and many people think of bitcoin, the digital currency that relies on blockchain's database technology to track transactions and provide a secure alternative to conventional money. **Walmart Stores**, however, is using blockchain's ability to catalog huge amounts of behind-the-scenes data for a meat-and-potatoes purpose: identifying and removing food that's been recalled.

Like most merchants, the world's largest retailer occasionally struggles to deal with tainted food. When a customer becomes ill, it can take days to identify the product, shipment, and responsible vendor. Using a blockchain database, Walmart, using a single receipt, will be able to obtain crucial data, including suppliers, details on how and where the food was grown, and who inspected it. The database can give retailers more granular information, not just on the pallet but on each individual package. "If there's an issue with an outbreak of E. coli, this gives them an ability to immediately find where it came from," says Marshal Cohen, an analyst at researcher NPD Group. "That's the difference between days and minutes."

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It's also the difference between pulling a few tainted packages in a handful of locations and yanking all the spinach from hundreds of stores, according to Frank Yiannas, vice president for food safety at Walmart. "With blockchain, you can do strategic removals and let consumers and companies have confidence," he says. "We believe that enhanced traceability is good for other aspects of the food systems. We hope you could capture other important attributes that would inform decisions around food flows, and even get more efficient at it."

More than 1,000 outbreaks of foodborne illnesses are investigated by state and local health departments each year, according to the U.S. Centers for Disease Control and Prevention. The CDC estimates that 48 million people are afflicted annually, with 128,000 hospitalized and 3,000 dying. An outbreak can cripple a business—**Chipotle Mexican Grill** has suffered a year of falling sales after several such events.

Using blockchain technology co-produced by **IBM**, Walmart in October started tracking two products via the database: a packaged produce item in the U.S. (it won't say which one) and pork in China. The test involves thousands of packages shipped to multiple stores.

A blockchain is a distributed ledger in which companies doing business with each other—such as growers, distributors, and retailers—can record transactions securely. The database's strength lies in its resistance to tampering; it's difficult if not impossible to reverse a transaction or change an entry. A blockchain database can also hold much more data than what retailers get today, providing tools for more detailed analysis.

That could help Walmart deliver food to stores faster, reducing spoilage and waste. Cutting costs is critical for all retailers. Last year, retail sales rose only 2.1 percent, the smallest gain since 2009, according to the Retail Industry Leaders Association. Traditional offline merchants also continue to be pressured by **Amazon.com** and its efficient supply chain.

If the test is successful, Walmart will expand it to multiple food items in both countries, Yiannis says. "So far things are flowing smoothly and as expected."

Walmart has been at the forefront of new technologies before. More than a decade ago, it was an early adopter of wireless radio-frequency identification tags, requiring big suppliers to put them on shipping crates and pallets to help it better manage inventory across its supply chain. The retail giant began installing chip-card readers at U.S. checkout counters 10 years before the deadline mandated by credit-card networks such as **Visa** and **Mastercard**. This summer, it took Walmart Pay nationwide, becoming one of the first large retailers to introduce its own mobile-payment service. It's also expanding a service that lets consumers order groceries online and then go to a store for pickup.

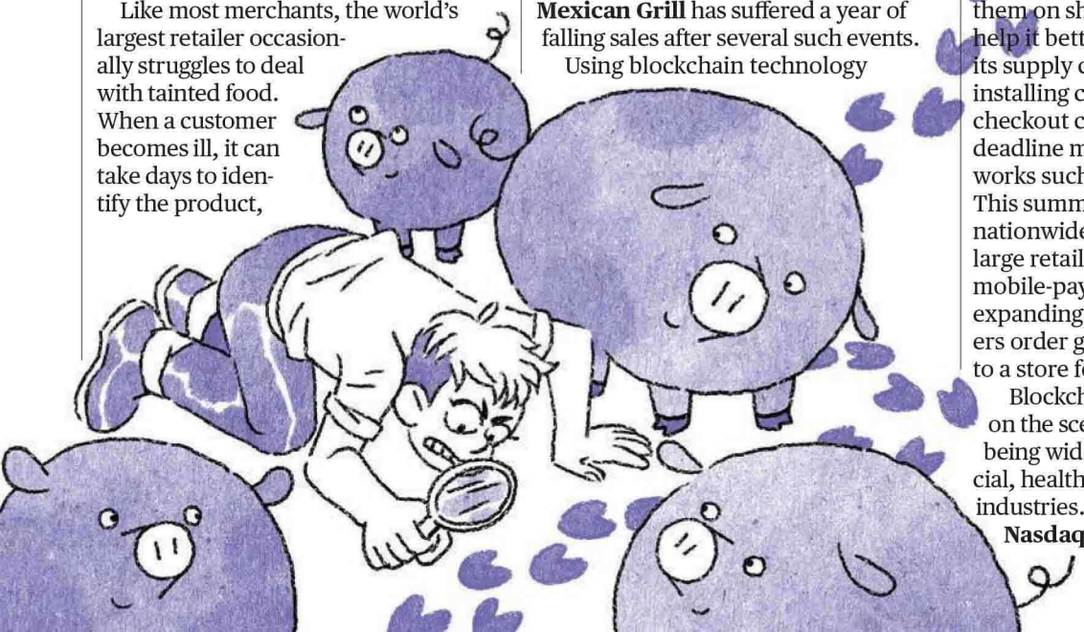
Blockchain, a technology that came on the scene only in 2009, is already being widely tested in the financial, health-care, and natural-resource industries. Companies such as IBM, **Nasdaq**, and **BHP Billiton** have deployed or are planning to deploy it to run their businesses more efficiently.

Fourteen of the top 30 banks are testing blockchain to see if it can be of use in their businesses, according to CoinDesk, an industry researcher.

In October the Walmart Food Safety Collaboration Center opened in Beijing. Through the Center, the retailer is collaborating with IBM and Tsinghua University to use blockchain to improve the way food is tracked, transported, and sold to consumers in China, where food safety is a hot-button issue. If Walmart adopts blockchain to track food worldwide, it could become one of the largest deployments of the technology to date.

"They are setting the new standards in terms of how technology can be implemented to solve a problem that's been with us for ages," says Paul Chang, an expert on the global supply chain at IBM. —*Olga Kharif*

The bottom line Each year, about 48 million Americans contract foodborne illnesses. Walmart is testing blockchain to address the problem.



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