

# Reaching for Blockchain

Retailers and tech partners are pressing adoption in food safety

by M.V. GREENE

For retailers and suppliers selling and distributing food products, the path from “farm to fork” can set in motion a perilous journey.

Within the food supply chain, companies have a two-pronged duty, says Bob Wolpert of Golden State Foods, an Irvine, Calif.-based global food service company that supplies product to fast-food restaurants, most notably McDonald’s.

The first and foremost responsibility is to ensure consumer safety and health, says Wolpert, who is Golden State’s corporate senior vice president and president of its Quality Custom Distribution division. Secondly, if there is an issue such as contamination, companies must be able to narrow the scope of any market impact.

“If you had an issue with a bag of spinach, you wouldn’t want to stop selling spinach in all locations around the world for five days until you figured it out,” Wolpert says. “You’d want to try to stop selling it in the specific markets you knew the product went to.”

## TRACKING CAPABILITIES

Golden State Foods and others, including retailers Walmart and Kroger and suppliers such as Dole, Driscoll’s, McCormick, McLane, Nestlé, Tyson Foods and Unilever, have recently joined with IBM to bring greater transparency to global food procurement. The platform they are relying on is blockchain — the “distributed ledger” technology whose invention occurred as a means of facilitating the Bitcoin cryptocurrency.

The blockchain collaboration is seeking to remake how global food is driven by directly connecting the industry’s key players — growers, processors, distributors, suppliers, retailers and regulators — with a shared view of the transaction history of products as they make their way through often-convoluted



supply chains, according to Brigid McDermott, IBM vice president for blockchain business development.

Last year’s announcement of the program noted that 10 percent of people worldwide get sick each year from contaminated food causing food-borne illnesses, with about 400,000 deaths.

As what she calls a “trusted system of record,” McDermott points to blockchain’s potential for contributing to food safety as transformative because of the technology’s ability to relentlessly track transactions at the enterprise level within a cloud environment. Users see the same data and can only append or update entries rather than make fundamental changes based on their own competitive needs. In a sort of “myth-versus-reality” review of whether blockchain is truly the next greatest thing in technology, industry analysts are opining in blogs, podcasts and other media about how vast its use will ultimately be.

McDermott contends that blockchain can create the same value proposition for

a one-acre farmer in a foreign country as it would for a factory farmer in the United States or even a mom-and-pop retailer or Fortune 100 retailer.

“At that point, you will see the adoption across all fronts,” she says. “The fundamental problem (in food supply chains) is traceability.”

## ‘THE SAME TRUTH’

Owing to principles of openness as a value to multiple parties that typically are marketplace competitors, IBM’s platform is being advanced as an open-source technology housed by the Linux Foundation’s Hyperledger group. Linux is built on the concept of supporting software developers in establishing and sustaining open source technologies irrespective of market competition.

In explaining how blockchain can work, McDermott offers a layman’s analogy to classic movies about criminal enterprises where there invariably would be two sets of books in order to launder money and hide ill-gotten profits. In contrast,



IBM's blockchain system seeks to "allow collaboration in a trusted manner across a diverse ecosystem" through transparency, she says.

"You don't want two sets of books. You want a single set of books," McDermott says.

And the distributed ledger design of blockchain — where information is stored in a shared database synchronized across a network hosted at multiple sites by a variety of institutions — gives all parties "access to the same truth," she says.

In addition to food safety, the IBM blockchain platform supports projects in industries ranging from financial services, supply chain and logistics to government and healthcare. The technology eliminates the burden of organizations communicating their supply chain transactions only within their proprietary portals and networks, McDermott says.

"You can more freely share the information and make yourself comfortable that you are not giving your competitors advantages that you yourself are not getting," she says. "You have the ability to store information in such a way that you have consensus among parties on that information as it is put onto the chain."

## EXCEEDING EXPECTATIONS

Frank Yiannas, Walmart's vice president of food safety, is bullish on the application in the food sector and says it falls into line with Walmart's approach to promoting safety in global food sourcing.

The retailer has worked with IBM and Tsinghua University in China to test the use of blockchain to help enhance food safety in that country. Walmart CEO Doug McMillon traveled to Beijing in 2016 to help launch the Walmart Food Safety Collaboration Center, committing \$25 million over five years for the project.

Yiannas says Walmart has tested the traceability of Chinese pork products using blockchain, along with another pilot to trace Mexican mangoes, and both results have been sterling.

"The two pilots have been extremely successful, and they've exceeded our expectations," Yiannas says.

Most food-borne illnesses involve produce since it is grown outdoors and subject to contamination by air, water and animals, according to Yiannas. The pork testing was important to the collaboration with Tsinghua University since it is a highly favored animal product among Chinese consumers, akin to chicken or beef in the United States, he says.

In addition to the authentication qualities of a blockchain platform, what was astonishing about the pork test, Yiannas adds, is that Walmart was able to dramatically reduce the process of tracing the product.

In the past, the process "took us almost seven days ... to trace back to the farm," he says. "With the blockchain technology we were able to do it in 2.2 seconds."

## GREATER VISIBILITY

As an expert in food sourcing, Yiannas was happy to join with IBM to trumpet the process into the larger initiative with the other brands, and for the past year intense testing has been occurring. Yiannas, author of the academic text "Food Safety Culture: Creating a Behavior-Based Food Safety Management System," says sourcing food globally is a complex matter with many

interdependent and interconnected parts.

Yet food sourcing remains largely a hidden endeavor. In today's online economy, where consumers can easily order products from anywhere in the world, providing greater visibility on the way in which food flows from farm to the consumer is paramount, he says.

"There's a lot of anonymity in the food system today. If you see some of the food safety scares that have happened around the world, the ability to track and trace and shine a light on how everything flows is important," Yiannas says. "We think that transparency leads to greater accountability and responsibility."

Wolpert of Golden State Foods sees blockchain in food safety almost as an altruistic opportunity to benefit the whole spectrum of consumerism.

"We see it as all boats rise as the food safety tide comes in and we are able to sleep well at night because the industry in general is more secure around tracking and tracing ingredients," he says. "We really see a role in how we can help the industry pilot and then adopt this, and do it in a way that it is open." **STORES**

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