

Open Learning Forum

Food Safety: How Blockchain Mitigates Losses During U.S. Meat Recalls

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Executive Summary written by GBBC

Introduction

Multiple large meat recalls in the U.S. in 2018 made clear that the meat supply chain is both inefficient and ineffective; it is estimated that farmers lost roughly \$454 in revenue due to meat recalls in 2018. Blockchain technology has the ability to streamline the meat supply chain while improving traceability, trust, and transparency.

Traceability

Frank Yiannis, Deputy Commissioner for Food Policy and Response at the Food and Drug Administration (FDA), called blockchain “the equivalent of FedEx tracking for food.” Blockchain requires independent confirmation from all stakeholders before a transaction can be uploaded. This is a significant improvement over the current system; IBM and Maersk estimate that a single container shipment of flowers generates over 200 communications, sign-offs, and approvals, accounting for about 20% of shipping costs. Blockchain technology can reduce tracing time from months to 2.2 seconds and allows firms to quickly identify contaminated meat. This is accomplished by replacing existing paper-based tracking with digital inputs that are quickly verified by stakeholders.

Trust

Blockchain technology creates a robust and irreversible ledger of records. The nature of a blockchain ledger encourages stakeholders to input correct and verified information. Currently, only 21% of recalls are detected by the firm itself; blockchain can assist firms in proactively identifying the source of contaminated meat.

Transparency

The meat supply chain generates a wealth of information that is rarely shared: expiration dates, storage temperatures, batch numbers, farm origination, and factory and processing details. Limited supply chain visibility increases operational costs; in 2018, 88 of 125 U.S. meat recalls were the result of operational mistakes. Blockchain platforms and their associated transparency enable stakeholders to address operational issues in a timely manner.

Next Steps

Education of all stakeholders, including regulators, is crucial to implementing blockchain solutions in the food supply chain. Firms can learn from incumbent firms like Walmart, Starbucks, and IBM to develop pilot projects.