HOW TO USE BLOCKCHAIN TO BUILD TRUST AND TRANSPARENCY IN THE FOOD INDUSTRY

Is blockchain food's saving grace?

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If you've been hearing a lot about salad recently, it's not because of the health benefits or the key to a balanced diet. In fact, it's quite the opposite. Due to another outbreak of the deadliest strain of E. coli in romaine lettuce that was loosely linked to lettuce grown in the Yuma, Arizona region, the CDC is warning all restaurants, grocery stores, and consumers in the U.S. to throw out romaine lettuce if you can't confirm its origin. The problem is, most packaging and other records don't indicate the region of origin. As a result, garbage cans everywhere are filled with romaine, and consumers are left to fear they may get sick and with less trust for an industry that already has trust issues.

Supply chains are only getting more global and complex, making it almost impossible for grocery stores and restaurants to guarantee the origin of the food

they sell. What's more, foodborne illnesses are on the rise, and the CDC estimates that one in five people in the U.S. gets sick due to contaminated food each year. When a contamination is discovered, supply chains scramble to locate the original contamination site, which can take months to discover, if at all. And the while, food companies lose millions of dollars and arguably more damaging, consumer trust. Food companies have been facing these challenges for decades, but one technology has the potential to revolutionize supply chain and food safety: blockchain.

Blockchain is a technology designed to bring transparency and efficiency to supply chain record-keeping. In the food industry, companies are beginning to implement blockchain to improve the way food is tracked, transported and sold to

consumers. Blockchain improves transparency by providing a permanent, secure record of transactions that are then grouped into "blocks". Without going into technical details, transactions are only recorded after consensus among participants is reached, and the blocks can't be removed or altered in any way after. This ensures that every touchpoint, from farm origination, batch numbers, factory and processing data, expiration dates, storage temperatures, and shipping detail are permanently recorded. Should an issue such as an inventory error or a contamination scare arise, businesses can easily reference any given touchpoint and handling details to pinpoint what could have gone wrong, and most importantly, where?

Currently, most businesses in the supply chain operate separately, with no end-to-end view of

the entire chain. It's also not uncommon, even in this digital age, for some supply chain businesses to track products using pen and paper. These methods that are at play now make the supply chain prone to error and gaps of information, so when a problem does arise, the entire supply chain needs to shut down to protect consumers.

Being able to pinpoint exactly where an error occurred in the supply chain is critical for the food industry. In the case of the romaine lettuce outbreaks, every brand, supermarket, and restaurant that distributes romaine lost significant money because the source of the E. coli could not be identified. Had blockchain been used, food companies could have referenced the blocks of information to determine which bags or bunches of lettuces were affected, the farms they originated on and if any errors occurred along the supply chain that could have led to contamination. This makes it possible to strategically remove contaminated packages instead of pulling every package of romaine lettuce in hundreds of thousands of stores across the U.S. In addition to decreasing costs, brand reputation will be preserved as well as consumer trust in the participating companies. Blockchain can also be used to

proactively ensure food is kept safe before it reaches consumers to eliminate foodborne illness. For example, meat products have to remain at temperatures below 37 degrees Fahrenheit during transit and 145 degrees Fahrenheit or higher depending on the type of meat to remain safe to consume. When grocery stores receive a delivery of meat, if they are using blockchain they could easily ensure that safe temperature were maintained during transit and storage before putting them on shelves, potentially stopping an outbreak of foodborne illness before it occurs.

Another common problem in the food industry is food fraud. Foods such as milk, olive oil, grains, honey, spices and organic produce are far too often faked, diluted or adulterated. Having a secure record and traceability of these products significantly reduce or eliminate the chance that it is fraudulent. Consumers like to know where their food comes from, and as technology is making it more traceable. Companies are starting to make food originations and ingredients more transparent on labels to show them where their food comes from and to gain customer trust.

Although blockchain has incredible potential to revolutionize food

safety, skeptics wonder how adoption will take place on a wide scale. Additionally, skeptics will say the information that's recorded in the blockchain is only as good as the person who is entering the information. To address these issues, the companies who are beginning to implement blockchain, such as IBM and Walmart, are ensuring that there aren't extraneous steps for people to record information along the supply chain. Over time, as more information becomes more accessible on the blockchain, the quality of data will also increase. While it is technically possible for a person to forge incorrect information, the ability to easily identify the incorrect data and who was responsible for entering it is a deterrent for those looking to enter false information.

Many technologies claim to have the potential to revolutionize various industries. In the case of blockchain, the technology is addressing a very real, important problem in the food industry. Blockchain is already starting to be implemented, and once adopted on a wider scale, the food industry could see some much needed trust and transparency restored. More importantly, consumers will be safer, and won't need to fear their salads.