

Embracing digital food transparency: why not start now?

Incoming regulations and standards are making the case plain: food manufacturers need to prepare for a digital food supply chain. Why not start now?

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There are benefits to be had for all through a realisation of this transformation, yet right now most food manufacturers are hesitant. In their hearts, they know that a move from manual track and trace to digital is coming. In their heads is a growing realisation that it could be good for their business. In fact, with legislators and retailers starting to insist on digital transparency in the food supply chain, it is not an exaggeration to say it will be critical to the continued existence of every food manufacturer.

Many have nagging worries about cost and complexity, some are assessing the technological trends, biding their time for the right wave to surf on. In fact, there is no need to be either complex or expensive. The technology already exists.

The first step is data collection, then this data must be shared throughout the supply chain, however the latter cannot happen if the data does not exist in an accessible form.

So, this is where they should start, data collection. Even the smallest farmer can participate, by accurately

weighing each batch of potatoes on industrial scales before a lorry takes them away. Keeping that data (the weight and logistics information) in a database puts the farmer in a position to contribute to the digital transformation of the food supply chain. It potentially also allows the end customer to see the origin and, if the data is captured, the field from which they were harvested.

Early adopters

This concept of information sharing is critical to digital track and trace, enabling the identification of the whereabouts of specific batches of food at any given time in the past or present, in a matter of seconds. However, digital food chain transparency has already been shown by early adopters to benefit food manufacturers.

One such is the US company Golden State Foods (GSF), which has a manufacturing facility producing over 160 million pounds of beef products per year. The company has partnered with IBM to create a digital supply chain system based on blockchain technology, Radio Frequency Identification (RFID) and the Internet of Things (IoT).

The project is the subject of a YouTube video, during which Guilda Javaheri, GSF's Chief Technology Officer, explains:

"It is not just about digitising your supply chain; it is about reducing the hours of reconciliations that companies go through. It also optimises the inventory throughout

the supply chain. You are going to be able ultimately to have the right product at the right time and the right place. Can you imagine how much wastage today can be prevented with that kind of information? That is what makes this pilot unique – because manufacturers, distributors and customers are really sharing the data, and that is really the common goal that everyone is striving towards."

Blockchain explained

Blockchain is a chain of linked blocks of data records, each bearing a cryptographic hash of the previous block. Once data is recorded in a block, this then becomes part of the cryptographic hash in the next block, so data cannot be altered retroactively without changing all subsequent blocks that show that data.

It essentially creates a digital ledger of transactions that is duplicated and distributed across a network of participating computer systems. The technology is therefore considered secure and incorruptible.

Systems, devices and sensors that are capable of automated machine-to-machine communication can all be part of a blockchain system, and this includes food safety machines such as product inspection devices.

Starting steps

How should food manufacturers approach the need to start developing a digital food supply chain?

- Start auditing the nature of the food transformation data gathered in their plant plus investigate if they are collecting the necessary data for digital track and trace at batch level.
- Look strategically at how this data is collected and stored. Analogue technology must be replaced with digital; if possible, manual processes need to be automated; data held on local servers should be migrated to a data hub on the premises or to the Cloud.
- Start talking to blockchain

technology providers, to get a feel for the issues at stake and what can be achieved. IBM is currently the front runner here, but there are other potential providers. System suppliers such as those in product inspection can also help.

- Consider how to oversee the cultural changes that implementing this digital transformation will require within their organisation.

Many food manufacturers will find – perhaps to their surprise – that they are already in a good position to embark upon a process of transformation.

The technology may seem complex, but its implementation is relatively straightforward.

The change of culture, however, will need to be carefully managed. Staff will need to understand and accept that, within the blockchain, other organisations will have visibility of their company's data.

The transparency will be real and immutable. Leadership will be required to drive change and demonstrate commitment.

Getting in good shape

Amidst the talk of blockchains and connectivity, of digital and data, it is easy to lose sight of what this technological transformation is all about. It is about providing a system in which batches of food can be quickly tracked and traced, and in which critical actions taken by companies dealing with that food in the supply chain can be proven and trusted.

Ultimately, it is about demonstrating that the necessary due diligence has been shown along the supply chain – from farm to fork – to deliver safe food to the consumer.

It is unavoidable that there will be disruption and cost to food manufacturers as the industry transitions to a digital supply chain.

However, it also needs to be recognised that early entrants will gain commercially. A digital future is not just in the future, as the time to start counting and compiling, assessing, and progressing, is already here.

