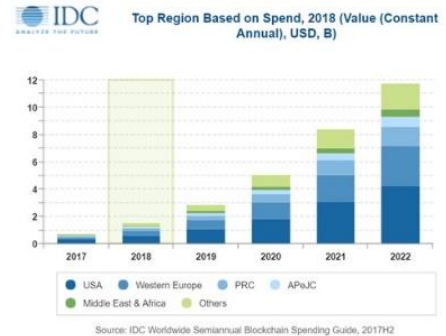


## Blockchain<sup>1</sup> in Foodservice: Foundational Investments in Data are Needed

Investments in blockchain are expected to reach \$2.1 billion this year, according to IDC research, and there are several high profile blockchain pilot programs currently underway in the foodservice industry. With the potential to shake up our approach to big challenges like recall readiness and menu labeling, blockchain interest is reaching a fever pitch.

However, within the frenzy of attention lies major misconceptions about what blockchain can actually do. Let’s examine two of the most popular blockchain use cases being explored in the food industry—traceability and transparency—and explore how manufacturers, distributors, and operators can effectively evaluate blockchain’s potential. By becoming better educated about various blockchain myths, foodservice industry stakeholders can make more informed and realistic blockchain implementation decisions.



### The Traceability Myth

Blockchain has brought renewed attention to traceability, as it represents an opportunity for business processes that are essential to traceability to move faster. For example, blockchain’s built-in smart contracts can automatically enforce terms, conditions, and business rules, eliminating the errors and inefficiencies associated with current manual processes. However, blockchain alone does not provide the basic building blocks of effective traceability.

**Blockchain alone does not provide effective traceability**

It’s true that leading technology providers are rapidly developing blockchain product offerings that can help companies leverage blockchain for traceability. There are several food manufacturers who have joined the highly-publicized [IBM Food Trust](#) to explore how to best use blockchain for withdrawals. Additionally, [FoodLogiQ Labs](#) launched a pilot program involving customers IPC/Subway, Smithfield Foods, Tyson Foods and others to pioneer blockchain usage in foodservice.

But those piloting blockchain have already adopted foundational standards for product and location identification as well as event data sharing. While some are further along than others, most companies eyeing blockchain have established the key business processes that enable supply chain visibility. It is vital that the industry not lose sight of collectively implementing foundational data standards that have been in progress for many years. [GS1 Standards](#) can help ensure data interoperability between systems and provide a singular approach to creating, sharing and maintaining product information as it flows along with products moving through the supply chain:

<sup>1</sup> For more details on the capabilities promised by blockchain, see [Hot Topics: Blockchain in Food Service](#) along with other articles at <https://www.supplychainscene.org/search/node?keys=blockchain>.

- A Global Trade Item Number (GTIN) - This globally unique identifier of products can be recognized in all trading partner systems, even across geographic boundaries.
- A Global Location Number (GLN) is the interoperable unique identification number for supply chain partner locations or functional entities such as a farm, manufacturing plant, a distributor’s loading dock, or a restaurant location or accounting department anywhere in between. They help a company record each stop a product has made in the supply chain or where business steps like invoicing or payment occur.
- GS1-128 barcodes, when applied at the case level, enable companies to encode product identifiers as well as additional information such as batch/lot/serial numbers, best-by dates, variable weight information and more—key details that help companies isolate affected product during a withdrawal. Think of the GS1-128 barcode as a license plate for logistics units, due to its serialized nature.

Not only do these standards enable more efficient orders between trading partners, they support current requirements for members of the food supply chain to maintain records of “one up/one down” visibility of the product’s movement through the distribution channel. They will make up the fundamental basis that blockchain is layered upon and help eliminate the challenges associated with proprietary numbering systems and manual processes that continue to hinder food traceability progress.

### ***The Data Accuracy Myth***

In many ways, blockchain applications are emerging during a perfect storm of changing consumer attitudes and shifting cultural norms. Guests are demanding more from the restaurants they visit. They expect menus to be detailed with information, and they want access to better information about food when they search online. A [recent study from Cone Communications/Echo](#) found 65% of consumers say it’s important to understand how their food is produced, 51% want clear and accurate labeling, and 47% want clear information on ingredients and sourcing. If incomplete or inaccurate data is encountered, it could not only lead to lost opportunities for future sales, it could even lead to illness if, for example, a known allergen is left out of a product listing.

What makes blockchain a valuable player in the transparency game is *immutability*—what is recorded to a blockchain cannot be changed. This could lead to a level of product provenance that has never before been achieved in the supply chain. An unchangeable digital audit trail of everything that happened to a product from field to restaurant can serve to back up a host of marketing claims of sustainability, conflict-free, fair wages, and locally and organically-grown.

Blockchain could provide previously unseen levels of product provenance

## ***Reliable Data is the Key!***

All of this depends on the quality of the data placed on a blockchain. Is it complete? Is it trustworthy? Is it accurate? When innovative technologies are paired with bad data, the industry runs the risk of simply ending up with the same bad data shared more quickly in more innovative ways.

A standards-based framework provides uniformity and structure to the data transmitted, and can help industry achieve basic data governance processes, leading to more sustained levels of data quality. Many companies who are following the principles outlined in the [GS1 US National Data Quality program](#) have moved from scrambling to react to data errors after they occur to a more proactive state of data quality vigilance, where they are able to get ahead of potential issues before they start.

A particular GS1 Standard for physical event data sharing called [EPCIS](#) (Electronic Product Code Information Services) can help a company record granular information about a product's transformation and journey from its source to the consumer with validity. For example, IBM has incorporated the EPCIS standard for formatting transactional data in its Food Trust platform. EPCIS helps communicate the what, where, when and why information associated with a product, and has been used successfully in other industries such as the pharmaceutical industry for traceability.

Ultimately, aside from their role in blockchain preparation, GS1 Standards enable traceability and transparency by simply creating consistency for the interoperable sharing of data. Data sharing alone, whether a company uses blockchain or not, helps foodservice companies innovate by becoming better equipped to move at the speed of consumers and act with more agility to meet their needs. For more information about GS1 Standards for blockchain supply chain visibility, visit [www.gs1us.org/blockchain](http://www.gs1us.org/blockchain).

## **Author**



*Kevin Otto is the senior director of community engagement at GS1 US, where he leads a collaborative foodservice initiative that seeks to solve supply chain challenges through the use of GS1 Standards. More information is available at [www.gs1us.org](http://www.gs1us.org).*