HOW WILL 5G AFFECT THE FOOD INDUSTRY?

VAI CIO Kevin Beasley on how the emergence of 5G networks will positively impact the food industry.

We have all seen the commercials from wireless carriers touting new 5G networks. For cell phone users, these upgraded capabilities will mostly lead to enhanced broadband services and faster connections. There's another side to 5G, though – business.

Food Logistics spoke with VAI (Vormittag Associates, Inc.) CIO Kevin Beasley on exactly what 5G is from a business standpoint and how it could affect the food and beverage industry in particular.

5G Defined

Simply put, 5G is the fifth generation in mobile networks. It enables connections between machines, objects and devices that are faster and more powerful than previous networks. For example, with 5G, latency (response times) are dramatically reduced.

"When I say something to you, if you respond back immediately, that's low latency. If I say something and it takes a long time for your response to come back, that's a higher latency," Beasley explains.

5G also offers higher capacities in terms of bandwidth, which is the maximum rate of data that can be transferred through a specific path (or connection). The technology allows us to communicate more information or data at once, and in a quicker amount of time.

How Will 5G Be Implemented Throughout the Food Industry?

To streamline the entire process of production, transportation and sale of food products, the procedures will need to be connected through a fully functional 5G-enabled system. This starts with 5G network capabilities being used in sensors that monitor things like oxygen levels and chemicals in water sources where production begins.

Manufacturing facilities will need 5G networks for use on conveyor systems and other machines, and food containers will need sensors much like those found on medication-containing vessels in the pharmaceutical industry.

The food industry is already using a myriad of technological components to make, transport and sell food. Technological innovations like 5G and advanced Internet of Things (IoT) sensors are the next step toward revolutionizing the way food is created, delivered and purchased.

Improved Efficiency and Communications

All levels of the food supply chain are already using ERP (enterprise resource planning) software systems, GPS and other

technologies to accurately track, send and analyze product data in real time.

Tracking food from farm all the way to the point of sale enables faster and more robust data capabilities that lead to improved efficiency and communications. 5G will reduce lag times, inaccuracies in product location due to slow data reporting and even product-loss due to mass recalls.

Beasley explains that farmers can use 5G-enabled IoT sensors that identify sections, aisles or rows rather than the entire farm. In the case of a recall, these sensors can help determine exactly which products are bad, eliminating the need to recall an excessive amount of merchandise.

Beasley also says that 5G will enable efficient, immediate and automated tracking of every facet of the food journey, with little to no need for human interaction. He says 5G-enabled IoT devices and sensors on products can send real-time information about where products are, without workers having to scan barcodes, use RFID readers (radio frequency identification) or handle the food.

"You can see histories of everything that gets touched along the way, without the need for human scanning with barcodes or RFID readers. As products are passing through various transportation points in the supply chain, IoT sensors can record the entire history of the journey," Beasley says.

Enhanced Safety

Factors such as FDA regulations and consumer wellbeing make safety a huge concern for anyone in the food industry. Thanks to a range of data collection, scanning, analyzing and communicating capabilities, 5G can drastically improve safety protocols throughout the food industry supply chain. This new network will enable more timely and accurate pinpointing of food conditions.

Beasley says, "5G-enabled IoT devices can go with the food products and report their condition, temperature, safety, humidity level and other related factors in real-time."

In addition to using new, high-speed technology to accurately monitor temperature and condition issues, food industry professionals can also utilize 5G to trace where a product came from in order to ensure FDA regulations have been adhered to throughout a product's journey.

Emerging technology aims to help the food industry operate more efficiently and effectively than ever before. From streamlined supply chains to better safety practices, the benefits from 5G networks could drive the food industry forward at a rapid pace.