

10 innovations that could disrupt grocery in 2017

The Internet of Things, artificial intelligence, droid delivery systems, mobile wallets and in-store gardens should be on every grocer's radar in the year ahead.

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Few times in history have rapid advancements in technology and breakthrough innovations had the ability to disrupt the grocery business model in such fast and all-encompassing ways. Retailers find themselves challenged by everything from changing consumer shopping patterns and mobile payment methods to inventory management issues and fresh product procurement approaches.

Here are 10 disruptive innovations that could change grocery in 2017.

1. Internet of Things-enabled kitchen applications take root

The smart fridge is a new technology breakthrough in the modern kitchen. Several large manufacturers — including Frigidaire, GE and Samsung — are on the market with their own versions of the smart fridge. Common features include sensors that monitor temperature and air flow, and automatically adjust different areas of the refrigerator.

Story continues below

But that kind of fridge isn't smart enough to do what consumers really want: automatically order groceries. Imagine a fridge that can track food usage and then auto-order items when running low — or at the very least automatically add them to the household grocery list.

Credit: Samsung

Samsung's latest take on the smart fridge is the closest to that ideal. The company's [Family Hub refrigerator](#) not only is equipped with monitoring sensors, but also has cameras and a large LCD touchscreen display. The cameras take photos of the refrigerator's contents every time the door is closed. Consumers can then connect to a smartphone app to remotely view the pictures while in the grocery store to actually see if they're running low on eggs, milk or other items.

The Family Hub's WiFi-enabled touch screen panel enables consumers to order groceries online with a "Groceries by MasterCard" app, all without booting up a computer. FreshDirect, MyWebGrocer and ShopRite are on board as initial retail partners.

2. Alexa, order toilet paper please

Voice-controlled speakers, like Amazon Echo, Echo Dot and Google Home, will be [under many Christmas trees this holiday season](#). Powered by artificial intelligence technology, the devices have potential to disrupt the path to purchase in the coming year.

Amazon's Echo and Dot have built-in capabilities that sync with Amazon.com for shopping purposes. With a simple voice command, Alexa, the "voice" behind Amazon's AI technology, can order items for direct delivery to your doorstep. While it's more glamorous to think of using Alexa to buy the latest gadget or music download, she's perfectly content ordering toilet paper too.

Credit: [Amazon YouTube](#)

"While the momentum now is around voice — the speaker device — it will be interesting to watch what other devices Amazon will tag onto it," Ben Arnold, consumer technology industry analyst with The NPD Group, previously told Retail Dive.

It's not inconceivable that Echo or Dot could connect with a smart fridge. With a simple voice command, Alexa could virtually scan the contents and assist with auto-ordering those eggs.

3. Amazon Dash takes auto-replenishment to new heights

While not Alexa-powered, the one-touch-button [functionality of Amazon Dash](#) will continue to shake up grocery product fulfillment as we know it.

Credit: [Amazon.com](#)

Dash is essentially an adhesive button that connects to the Internet. Once it is pressed, an order is automatically sent to Amazon. Since its unveiling in early 2015, more than 200 different vendors and products have joined the program, making automatic ordering of everyday household items easy and accessible.

Equally as intriguing is the IoT component taking shape around Dash. A host of device manufacturers, including the likes of Whirlpool, PUR and Honeywell, are developing [Dash-enabled appliances](#) and other gadgets that track product usage and automatically order more when supplies run low.

4. Homing in on the last mile

Amazon's innovative nature has huge ramifications for all retail channels, helping position the e-commerce titan as an even more formidable food foe in 2017.

In an attempt to thwart Amazon's grocery advancement, brick-and-mortar grocers are making last-mile delivery options — the last step to get goods to consumers in a more convenient fashion — a top priority. Experiments underway include various click-and-collect options, curbside pickup and home delivery.

Credit: [Sunder Bruce, Flickr](#)

Wal-Mart's focus on e-commerce and respective fulfillment models is certainly worth watching. The mega-retailer's latest pilot project is a convenience store that offers [free, same-day online grocery pickup](#).

Store employees will pick and pack online grocery orders from a nearby location, bring them to the pickup area in refrigerated trucks, and load them into customers' cars for free. If successful, Wal-Mart is likely to be able to roll out these types of c-stores in rapid fashion.

It's unlikely a "one-size-fits-all" model will work. Multiple solutions may be required depending on shopper needs and buying occasions, so many more pilot projects can be expected as the year goes on.

5. Droids for home delivery

The use of drones for delivery is stuck in a holding pattern for the foreseeable future due to Federal Aviation Administration regulations, [remaining years away](#). But self-driving automobiles or droids could be potential grocery home delivery disruptors.

Credit: Starship Technologies

London-based startup Starship Technologies has introduced a small, self-driving robotic delivery vehicle that motors along city sidewalks at pedestrian speeds. Each Starship robot can carry the equivalent of two grocery bags and complete local deliveries from the nearest hub or retail store within five to 30 minutes. Shoppers can track the robot's progress in real time via mobile app. The same app guarantees that only authorized customers are allowed to unlock the cargo upon arrival.

6. Mobile pay gains momentum

The market is being flooded with various mobile payment systems, ranging from Citi Pay and [recently launched Chase Pay](#) to individual retailer programs like Walmart Pay, CVS Pay and Kohl's Pay. While this is not new, 2017 could prove to be a tipping point for mobile as a preferred mode of payment.

Credit: [Depositphotos](#)

This is particularly true among those in the younger generation. According to data from Prosper Insights & Analytics' October 2016 survey, 38% of millennials and 32% of generation Xers say they are comfortable using a mobile device to pay for transactions at a store checkout. Conversely, just 18% of baby boomers are OK with that payment method.

Mobile payment transactions are expected to reach more than \$314 billion in total value by 2020, up from just under \$28 billion this year. This growth is buoyed by both growing consumer use and the acceptance of in-store payments by a broader variety of retailers, [according to a new eMarketer report](#).

Progressive retailers are moving quickly to upgrade in-store systems technology to accept mobile payments. This could prove to be a game changer on several counts. Mobile pay costs retailers less than credit card transactions, which has bottom-line implications.

Mobile also changes the way shoppers interact with retail brands. Coupled with loyalty program applications, it provides the opportunity to deliver personalized benefits and a differentiated shopping experience.

7. Checkout-free shopping becomes reality

“Grab and go” grocery shopping, in every sense of the word, is now reality thanks to mobile pay technology. Although execution is still in the early stages, consumers can now visit a store, self-scan items with a smart phone app, then merely tap the phone to pay and walk out the door.

The industry is buzzing about the recent unveiling of Amazon's first physical grocery store Amazon Go in Seattle. Particularly of interest is the futuristic checkout-free experience that allows busy customers to get in and out quickly by eliminating the traditional payment counter.

Credit: [Amazon](#)

Amazon Go customers launch a QR-code based app, which they scan upon walking into the store. The retailer's “Just Walk Out” technology detects when products are removed from or returned to shelves, keeps track of them in a virtual cart, and totals the cost when customers depart the store. The app automatically charges the card saved in the associated Amazon account and provides a digital receipt.

Amazon wasn't first out of the gate with a checkout-free store. That distinction belongs to [California Fresh Market](#), which opened last month in San Luis Obispo, CA. Consumers there have the option to use the store's mobile app to scan barcodes, add products for purchase, and monitor their running total. To complete their purchase, consumers check out by using the app to scan a QR code located at the front of the store, which charges either a credit card or Apple Pay.

8. Where “local” means grown on premise

“Buy local” has been the buzz for a few years now. Sourcing from local farmers and manufacturers offers several benefits for grocery retailers. It tightens the supply chain, cuts transportation costs, supports regional economics, promotes sustainable practices and enables micro-merchandising of stores.

The real game-changer in consumers' eyes, however, is the freshness and product quality associated with buying local. 2017 may be the year retailers take fresh to the extreme, actually [growing produce in or around their own stores](#).

Credit: [chipmunk_1](#)

[Target already is testing such an initiative](#). As part of its food innovation efforts, the retailer is researching vertical farming, an agricultural technique to grow plants and vegetables indoors in climatized conditions. Food from in-store gardens may go on sale as early as next spring.

Earlier this year, Roundy's Supermarkets, a division of Kroger, announced a partnership with New York-based BrightFarms to build a hydroponic greenhouse in Rochelle, IL. The facility will supply fresh salad greens, herbs and tomatoes to Mariano's Chicagoland stores year-round.

9. IT upgrades for better inventory tracking

Product tracking, [traceability and transparency solutions](#) across the food supply chain are crucial in quickly identifying safety concerns. Top-notch inventory management and tracking mechanisms are also paramount in the grocery industry.

IoT isn't only connecting smart homes. The technology also has potential to disrupt backroom operations. Intelligent shipping containers, mobile device management, and even the use of drone technology in warehouses will inevitably change the way business is done.

The result will be greatly improved logistics, materials handling and inventory control. This will lead to productivity and efficiency gains throughout the supply chain — and translate directly to cost savings. It also means improved customer service through better in-stock positions at store level, which leads to repeat visits and more satisfied shoppers.

10. Amazon working to revolutionize transportation and delivery

Evidence is mounting that Amazon isn't just a retail disruptor — it's a transportation and delivery disruptor, too.

Credit: [Amazon](#)

The e-retailer is developing its own delivery networks in an effort to gain economies of scale and cut out the middle man. Amazon has moved to control its own air cargo and truck deliveries through leases and purchases of planes and truck fleets.

These moves are a huge threat to UPS and FedEx's long-established dominance in the transportation and delivery industry. This can also be chalked up as yet another way Amazon is working to disrupt existing retail models – as it's done for more than two decades.