McKinsey & Company

Retail Practice

Digital disruption at the grocery store

Five trends are shaping the transformation of the US grocery industry. Understanding them is key for grocers to achieve profitable growth in this new competitive environment.

by Steven Begley, Eric Marohn, Sabah Mikha, and Aaron Rettaliata

February 2020

In the past two decades, e-commerce has altered customer shopping behaviors and transformed the US retail landscape from brick and mortar to omnichannel. Grocers have remained largely immune to digital disruption—until recently.

Powerful trends, including new competitive pressures, technological advances, and evolving consumer attitudes and behaviors, will disrupt the grocery business from coast to coast in the next few years. Some grocers are learning from other retail sectors and countries, recognizing threats early, seizing opportunities, and catching a wave of profitable growth. Others are struggling, and some may disappear.

Until relatively recently, the US grocery sector has remained sheltered from the forces of e-commerce for a couple of reasons: Most American shoppers still prefer to choose their own food (especially meat, produce, and other perishable goods), and few grocers have had the financial capacity to invest in the highly efficient, large-scale cold chains required to make home deliveries at a profit. That is changing.

While online sales accounted for anywhere from 3 to 4 percent of the US grocery market in 2019,[1] the share could be greater than 10 percent by 2025[2] as major retailers—including well-funded entrants from outside the sector—invest in automation and innovative operating models to solve challenges in fulfillment and last-mile delivery. As quality rises and online grocers make more compelling offers, millions of shoppers will get comfortable offloading a task that only about 15 percent say they enjoy.[3] We have seen that online grocery is supply driven, and as online grocers provide more supply, customers will adopt the new method of grocery shopping.

Grocers large and small should step back now and reevaluate their near- and long-term strategies. There is no time to waste. It took TV 13 years to reach 50 million users. The iPod took four years, Facebook took one year, and Twitter took nine months to hit that number.[4] The speed of technology adoption has been startling some of the world's most successful companies since the 1990s—and it is accelerating faster than ever. Major grocery players, including traditional competitors (such as Kroger and Walmart), e-commerce giants (such as Amazon), and start-ups with venture-capital funding, are making the kinds of major investments and acquisitions—in customer-value proposition, customer experience, picking, and delivery—that herald an era of true transformation.[5]

Many US grocers can and do actively look to other parts of the world for examples of how to be effective online. In fact, many of the technological innovations in this space come from outside of the United States, such as technological developments in pickup from Israel and Western Europe. There have also been a range of approaches to last-mile delivery. In the Netherlands, for example, Picnic provides customers with fixed delivery slots, backed by their milkman model and demonstrated to be able to reach up to 14 deliveries per hour. In China, Hema offers guaranteed delivery of both groceries and prepared meals in fewer than 30 minutes. We are also starting to see significant innovations in the omnichannel grocery-customer experience in several Asian markets (such as China and Japan). This isn't to say that there aren't home-grown US innovations happening—there most certainly are, especially on the gig delivery front—but the disruption in online grocery is a global phenomenon, and US grocers should look around the world for solutions to help inform their digital journeys.

We are following five powerful trends that will shape the industry's transformation in the United States. Understanding them could help grocers of all sizes chart a course to profitable growth in the new, much more competitive environment.

1 Analysis triangulating data from multiple public sources, including Food Marketing Institute, Forrester, and Nielsen.
2 Analysis derived using inputs from multiple public sources, including Food Marketing Institute, Forrester, and Nielsen.
3 "The future of grocery—in store and online," June 2017, McKinsey.com.
4 "The social economy: Unlocking value and productivity through social technologies," McKinsey Global Institute, July 2012, McKinsey.com.
5 Martin Joerss, Florian Neuhaus, and Jürgen Schröder, "How customer demands are reshaping last-mile delivery," October 2016, McKinsey.com.

Trend 1: The fight is on

Until relatively recently, shoppers' grocery options were limited to what was available at their most convenient brick-and-mortar store. Today, tens of millions of Americans can shop for groceries online, where their options include curbside pickup and home delivery. Many formidable players are now competing for e-grocery dominance.

Amazon's acquisition of Whole Foods Market in 2017 gave the e-commerce giant new credibility in fresh grocery and allowed the expansion of immediate Amazon Fresh service to new markets. Instacart, which launched in 2012, has expanded rapidly and can reach more than 80 percent of US households.[6] In response, many traditional grocers are rapidly expanding their online operations (Exhibit 1). For example, Walmart has been expanding its online-order offering, with same-day delivery from 1,600 stores and pickup from 3,100 locations as of November 2019.[7] Kroger has expanded its pickup locations for online orders to 1,900 locations and offers delivery of online-ordered groceries from 2,300 locations.[8]

Many grocers are also thinking about more ways to gain "share of stomach," such as by offering ready-to-heat and ready-to-eat meals, in-store restaurants, meal kits, and even vending machines for fresh products. Some are expanding into adjacencies, such as household products or health and wellness items, that provide more opportunity

Exhibit 1

Large grocery players are meaningfully expanding e-commerce offerings.

Competitive e-commerce offerings

Albertsons	• As of Q1 2019, grocery delivery available in 11 of the top 15 metropolitan statistical areas, with ~1,000 delivery vehicles from ~2,000 stores • Drive Up & Go available at 500 stores (as of October 2019), with expansion expected throughout 2020 • Real-time status of grocery deliveries and pickup orders available through partnership with location-sharing company Glympse
Amazon	• Delivery of Whole Foods Market products through Prime Now in ≥1 hour available in 75 metropolitan areas as of April 2019 • Grocery pickup from Whole Foods Market through Prime Now app available in 30 metropolitan areas (free within 1 hour on ≥$35 purchase; $4.99 for 30-minute pickup window) as of April 2019
Kroger	• Partnered with Ocado to build 20 "sheds" for online fulfillment centers and also partnered with Nuro to offer unmanned grocery-delivery service • Grocery delivery available from >2,300 locations and pickup available at >1,900 locations as of December 2019 • Delivery or pickup services available to 96% of Kroger shoppers
Target	• Same-day delivery through Shipt available in >250 markets and >1,500 Target stores (some delivered in ≤2 hours) • As of January 2020, drive-up service available at nearly 1,750 stores across all 50 US states
Walmart	• Offers pickup of online grocery orders from nearly 3,100 US locations and delivery from ~1,600 stores • As of fall 2019, Delivery Unlimited service allowing customers to pay a membership fee for unlimited deliveries is offered from 1,400 stores • In January 2020, unveiled its automated grocery picking robot, the Alphabot

Source: Company websites; earnings transcripts; media sources, including *Supermarket News*; public filings

[6] *Supermarket News*, September 2019, supermarketnews.com.
[7] Walmart earnings call, November 2019.
[8] Kroger press release, December 2019.

for growth and customer delight. Almost all are looking for new ways to partner with consumer-packaged-goods companies to engage more deeply with customers.

Given that the majority of large grocers have already developed some form of an e-commerce offering, new entrants have clear disadvantages, including a lack of brand equity and scale compared with traditional grocers. However, they tend to have more strategic agility, cultures of innovation, and white space. Such features provide opportunities to craft value propositions for the customer of the future without sacrificing the customer of today.

Some larger and more traditional grocers may resist transformative innovation in the shopping experience as they maintain their focus on the preferences and demands of their current core customer base. A recent example is when Trader Joe's discontinued its delivery services in New York City, citing already close proximity to customers and an unwillingness to pass on delivery costs to customers.[9]

Trend 2: Early movers have advantages

The grocery market is supply driven, and consumers don't yet know what they want. Like grocers, shoppers can't predict exactly what the future will bring. Not surprisingly, most first-time online customers expect to get their groceries more seamlessly than when going to the store themselves. But many can't imagine all the options digital grocers might offer.

Indeed, the offerings themselves are now shaping customer expectations about each element of the experience, including the type and speed of service—which will evolve as quickly as the offers do. Recall, for example, Amazon Prime's introduction of free two-day shipping. Customers may not have been clamoring for it, but it has transformed their expectations across a broad range of industries. Nontraditional grocery players, such as Amazon and Instacart, are now shaping the market in a similar way—for example, by offering immediate grocery-delivery service in major metropolitan areas across the United States. Recently, Walmart announced free one-day delivery.

Other changes also seem to be taking hold:

— *Order tracking and delivery-slot notification.* Instacart has raised the bar for communication, offering driver-to-customer updates and committing to specific delivery windows to reduce the time customers must wait at home for orders.

— *Expanded assortment.* As the lines between digital- and physical-shopping experiences blur, so do the lines between general retailers and grocers. Many customers are seeking the convenience of ordering everything they need, whenever they need it, from a single platform in a single order.

— *Online and in-store price parity.* Many grocers have been able to charge a premium price for online-basket items, but we may see a push toward a more transparent pricing model. While many retailers have used online price-matching policies, the jury is out on whether the reciprocal will hold. Currently, Walmart does not match in-store prices, while Target does.

— *Low per-order fees and attractive subscription models.* With the influx of competition into the market, customers can take advantage of various offers, including percentage-off promo codes and free delivery on the first order, at sign-up. To retain customers, these promos may transform into everyday low fees.

While convenience attracts most first-time customers to online ordering, it may not keep them coming back. Some regular online grocery shoppers are citing a pain point of falling into a "grocery rut"

[9] *Supermarket News*, 2019, supermarketnews.com.

We believe the winners in e-grocery will be those that deliver a great and consistent customer experience the fastest.

because of automated ordering of the same basket again and again. Some miss the sensory experience of shopping in person and feel that they miss out on discovering new ingredients, different meal ideas, and good values. Others may grow frustrated with the glitches that come with new convenience offerings: out-of-stock issues, incorrect or missing items, and general lackluster service. However, we are already beginning to see leaders in service quality, with Walmart's grocery pickup resulting in 63 percent customer satisfaction, a considerable amount higher than the industry average of 56 percent.[10]

We believe the winners in e-grocery will be those that deliver a great and consistent customer experience the fastest. They will give customers the sense of discovery, exploration, and inspiration they seek from any grocer, whether in a physical or virtual environment. Whichever player discovers and delivers the optimal customer experience first will be the incumbent. Some believe this means offering the most seamless click-and-collect experience, while others believe this means offering the fastest delivery. It remains to be seen which experience US consumers value the most, but it is certain that they will reward consistency.

Trend 3: Scale matters

Demand density—or orders per square mile—in the United States is significantly lower than it is in European countries, particularly the United Kingdom, which has long been at the forefront of online grocery. The relatively low e-grocery penetration of the United States (around 3 to 4 percent versus around 7 percent in the United Kingdom), coupled with lower population density, creates a significant challenge for grocers and rewards those that have scale. Making matters more challenging, customer demand is fragmented between delivery and pickup, and various delivery speeds each require a different last-mile model.

Where demand density is low and demand is fragmented, investments in large fulfillment centers, delivery fleets, and drivers are hard to justify. It can be impossible to cover the costs without adequate demand within the serviceable radius. Recognizing the challenges, some major grocers are using their stores as fulfillment centers, getting more value from existing assets rather than making new investments (Exhibit 2). After Amazon acquired Whole Foods Market, for example, it announced that it would fill orders from Whole Foods Market stores. Target and Walmart now offer e-commerce

[10] ShopperScape ® Online Grocery Survey, 2019, Kantar, kantarretailiq.com.

fulfillment at store locations and last-mile delivery through the acquisition of Shipt and a partnership with Postmates, respectively. They are also finding that integrating e-commerce fulfillment and retail-store operations can improve employee utilization, since staff can fulfill electronic orders when in-store customer traffic is low.

Some large grocers, using their geographic proximity to customers, have tried to tap into the new gig-delivery world by using Postmates or the now-defunct UberRUSH. How that plays out remains to be seen, especially given the open questions, such as whether third parties will maintain food-safety standards, protect the retailer from reputational risks, and keep prices low if the gig economy matures or venture funding decelerates. Some grocers may join forces with noncompeting retailers (such as hard- and soft-goods players) to create, inorganically, delivery ecosystems that rival Amazon. Pooling the demand of various grocery and nongrocery offerings could become a viable way to keep last-mile-delivery costs down and compete with large ecosystems.

The demand-density challenge will become less of an issue as e-commerce operations achieve scale, through either market penetration or dominance, and a move to more centralized fulfillment models will make financial sense in more locations.

Trend 4: Economics improve with automation innovation

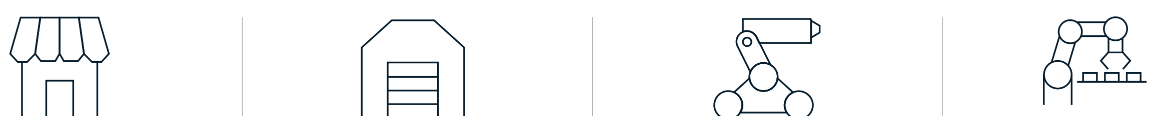
The two pillars of e-commerce fulfillment—picking and last-mile delivery—add significant operating costs to an already low-margin business, so we expect large grocers to turn to automation and robotics. Technology advancements could help level the playing field, but you need scale and demand density to justify the heavy up-front investment.

Picking automation is already well under way. Amazon purchased Kiva Systems for picking-center robotics. Ocado has automated grocery-fulfillment centers in the United Kingdom and partnered with Sobeys and Kroger to automate picking centers in Canada and the United States, respectively. Kroger has also forged a partnership with Cimcorp to bring an automated storage-and-picking system to its dairy facilities.

Exhibit 2

Optimal picking models will vary by trade-area density.

Degree of centralization at picking centers



Store	Microfulfillment center/‘dark store’	Automated microfulfillment center	Automated warehouse
• Pickup occurs in the aisles of a store • Customer has access to a full store assortment	Pickup of fast-moving SKUs occurs in a separate, dedicated area of a store	Automated microfulfillment center uses picking robotics	Automated fulfillment center employs picking robots on a 3-D grid

Low ← Degree of centralization → High

Automation is also coming to last-mile delivery. The dawn of driverless-vehicle and drone deliveries will scale only after regulations are in place. These technologies are also hindered by a need for the recipient to be home at the scheduled time of delivery. That said, they are evolving rapidly, driven by start-ups and old-school players, such as auto manufacturers—autonomous Ford vehicles are already delivering Domino's pizza in Miami, for example. Here, too, adoption speeds may exceed expectations by wide margins.

Trend 5: The talent gap is a major bottleneck

Nearly every major industry, from insurance to mining, is struggling to recruit and retain digital talent, given that demand currently outpaces supply. Large tech companies and hot start-ups continue to have the first pick of data scientists, tech engineers, robotics and artificial-intelligence experts, scrum masters, full-stack architects, and a host of other technical specialists.

We believe that is a major issue, since digital talent may be the single most important determinant of a company's likelihood to succeed in the grocery market in the next few years. Any strong talent strategy begins with retaining and training existing talent, of course, as well as uncovering latent talent already in the business. But to compete with the recruiting capabilities of large technology companies, grocers should take several additional steps:

— *Hire a chief digital officer or the equivalent.* A chief digital officer's vision and business and technical knowledge can lead a digital transformation across an organization.[11]

— *Form positions for data scientists, tech engineers, and other experts.* These are critical roles that will create value.

— *Develop a clear digital strategy.* A digital strategy at the core of the overall business strategy is key.

— *Break out from the rest of the organization and rethink location strategies where required.* This type of transformational reorganization—a powerful signal that real change is under way—can help attract talent.

— *Reconsider traditional recruiting practices and look beyond brand-name universities.* Innovative recruiting activities—for example, by hosting "hackathons"—can help attract digital talent. Local colleges may be producing superb graduates who would like to stay close to home, providing a rich talent resource.

— *Offer more of the benefits millennials seek.* Millennials look for offerings such as development opportunities, extra flexibility, telework, and—perhaps most of all—a sense of meaning and purpose.[12]

— *Create an innovative environment.* A culture that rivals those of the big tech companies and the smallest start-ups includes an openness to risk taking, team-based ideation and solution building, clear career paths, and compelling performance recognition.

— *Prepare to pay market rates and reward employees for attracting talent.* Attracting and retaining top talent will require grocers to offer competitive and compelling pay and incentives.

What will it take to win in e-grocery?

Online grocery on its own is not new news to retailers and the broader consumer community, but the current pace of investment and innovation is unprecedented. We believe that this will continue to be a supply-driven market, meaning that the actions retailers and other players in the grocery ecosystem take now will define what the industry becomes going forward. Consumer expectations are higher than they were even a year ago, but they are still being set. Here are a few suggestions for leaders striving to win in e-grocery:

[11] Tuck Rickards, Kate Smaje, and Vik Sohoni, "'Transformer in chief': The new chief digital officer," September 2015, McKinsey.com.
[12] Joanna Barsh, Lauren Brown, and Kayvan Kian, "Millennials: Burden, blessing, or both?," *McKinsey Quarterly*, February 2016, McKinsey.com.

- *Set an aspirational vision for your customer proposition using a data-driven fact base.* Determine the core elements and differentiators of your omnichannel grocery offering and root them in a customer promise that you are prepared to deliver (such as fee structures, pricing models, and assortment choices). Leverage techniques such as conjoint analysis and ethnographic research to inform the value proposition.

- *Build a robust demand-forecasting model for your current and future markets.* Project market demand for your trade areas and forecast your potential share. Geospatial-analytics techniques should inform your demand modeling and your optimal mix of click-and-collect versus delivery offerings.

- *Determine your optimal fulfillment model, which is likely to be bimodal.* Explore the range of picking technologies available in the market and choose one or more that best suit your customer proposition and demand economics. Perform the same analyses when choosing delivery speeds and transportation models.

- *Design your tech stack and prepare your IT systems.* Build the IT plan that underlies each element of the customer proposition and select which vendors you will work with (most grocers won't have this capability on their own). Having a flexible technology stack that supports an agile operating model is key.

- *Modify your organization and operating model to embed digital at the core.* Align on a reporting structure for the e-commerce team (for example, using omnichannel or separate merchants and having dedicated or pooled labor in stores) and agree on decision rights and ways of working. Robust human-capital and talent plans and strategies will be necessary.

Steven Begley is a partner in McKinsey's New Jersey office, **Eric Marohn** is a consultant in the Chicago office, **Sabah Mikha** is a consultant in the Southern California office, and **Aaron Rettaliata** is a partner in the Pittsburgh office.

The authors wish to thank Katie Ragan for her contributions to this article.

Designed by Global Editorial Services