



CROSSING THE GROCERY E-COMMERCE RUBICON

**WHY 2018 WAS THE POINT OF NO RETURN FOR
ONLINE GROCERY & WHAT THIS YEAR MEANS
FOR THE FUTURE**

CROSSING THE GROCERY
E-COMMERCE RUBICON:
Why 2018 was the point of no return for online grocery
& what this year means for the future

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THE REAL NUMBERS BEHIND 2018

Curbside pickup, Same-day delivery,
Investments in the sector, Industry growth

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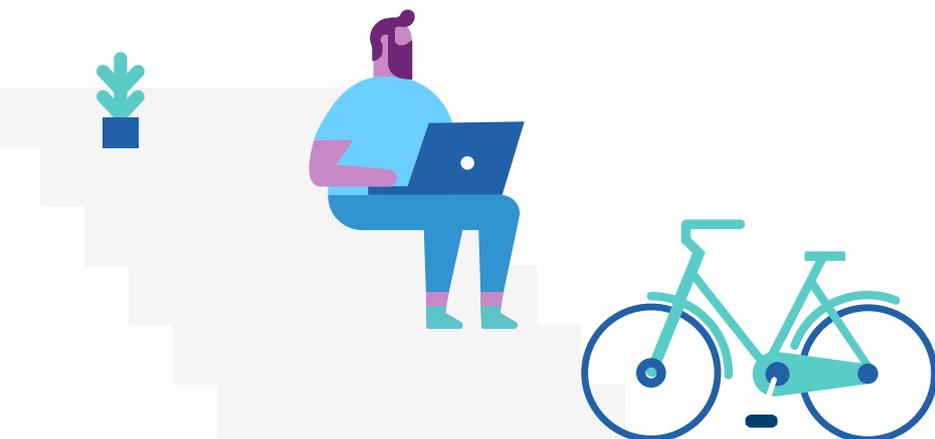
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THE ROAD AHEAD





2018 was a momentous year for online grocery in the United States

Galvanized by the announcement of Amazon's acquisition of Whole Foods in June 2017, 2018 was the year that retailers mobilized and made their first significant investments in grocery e-commerce.

After years of skepticism in an industry that's been long underpenetrated by e-commerce, grocery retailers made strides in the rollout of curbside pickup and same-day grocery delivery, signalling change for an industry that once appeared to be immune to the shift to online. It was a dizzying year of growth and as we begin 2019, the momentum towards online grocery shows no sign of slowing down.

The question to ask now is: are grocery retailers on the right path to meeting consumer expectations and long-term profitability?

In an industry full of conflicting numbers and advice, we decided to zero in on the facts that really matter and make sense out of the most eventful year of online grocery to date. Looking back on all that changed in this momentous first year of action, we've analyzed some of the biggest drivers of e-commerce growth and explore the three factors that will pose particular challenges for grocery retailers in the future: proposition, profitability, and penetration.

The rollout of curbside pickup & home delivery in 2018 was strong

THE ROLLOUT OF CURBSIDE PICKUP LOCATIONS BY MAJOR RETAILERS GREW BY 230%

Click and collect. Curbside pickup. The artist formerly known as BOPIS (buy online, pick up in store). Whatever you call it, curbside pickup saw massive rollout in 2018. By the end of the year, curbside pickup was available in 45% of Walmart stores, 58% of Kroger stores, 56% of Target stores (notably up from 0.6% at the beginning

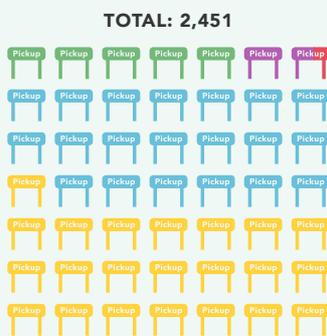
of the year), 30% of Ahold Delhaize stores, and 21.7% of Albertsons stores. And there's no sign of curbside pickup slowing down any time soon. Walmart recently announced plans to have 2,140 online grocery pickup sites by the end of 2019, covering 69% of U.S. households, and for fiscal 2020, it's targeting 3,100 curbside pickup sites.¹



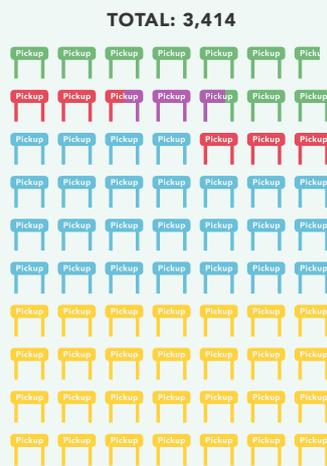
TOTAL CURBSIDE PICKUP LOCATIONS BY MAJOR RETAILERS

 Represents 50 curbside pickup location openings

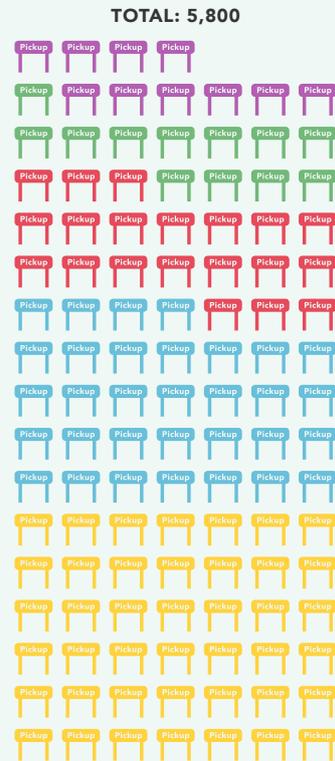
-  Target / Shipt
-  Walmart / various third parties
-  Ahold
-  Albertsons
-  Kroger / Instacart



January 2018



June 2018



December 2018

Source: Company data analyzed by **CommonSense Robotics**

¹ Company data

THE OFFERING OF SAME-DAY DELIVERY BY MAJOR RETAILERS INCREASED BY 500% IN THE PAST YEAR

Just a little over a year ago, same-day grocery delivery was only available to select urban markets such as New York City and San Francisco. 2018 marked the beginning of the rollout of same-day delivery across America, bringing speed and convenience to American consumers.

Notably, through Instacart's partnership with 300+ grocery retailers in the U.S. alone, same-day grocery delivery is now available to 80 percent of

American households, and in November of 2018, they quietly lowered delivery fees from \$5.99 to \$3.99, making the proposition that much more attractive to American consumers. Consulting firm Pentalllect estimates that third-party grocery delivery is currently a \$4.5 billion industry and is poised to grow to \$9 billion by 2022.¹



TOTAL OFFERING OF SAME-DAY DELIVERY IN 2018

Represents 5 metro markets*

Target / Shipt

Walmart / various third parties

Kroger / Instacart

Whole Foods / Amazon



Source: Company data analyzed by **CommonSense Robotics**

¹ Pentalllect, "Third-Party Food Delivery Service Market Report: Current Situation and Future Prospects," March 2018

* Amazon data reflect cities

Major retailers invested over \$28 billion in grocery e-commerce

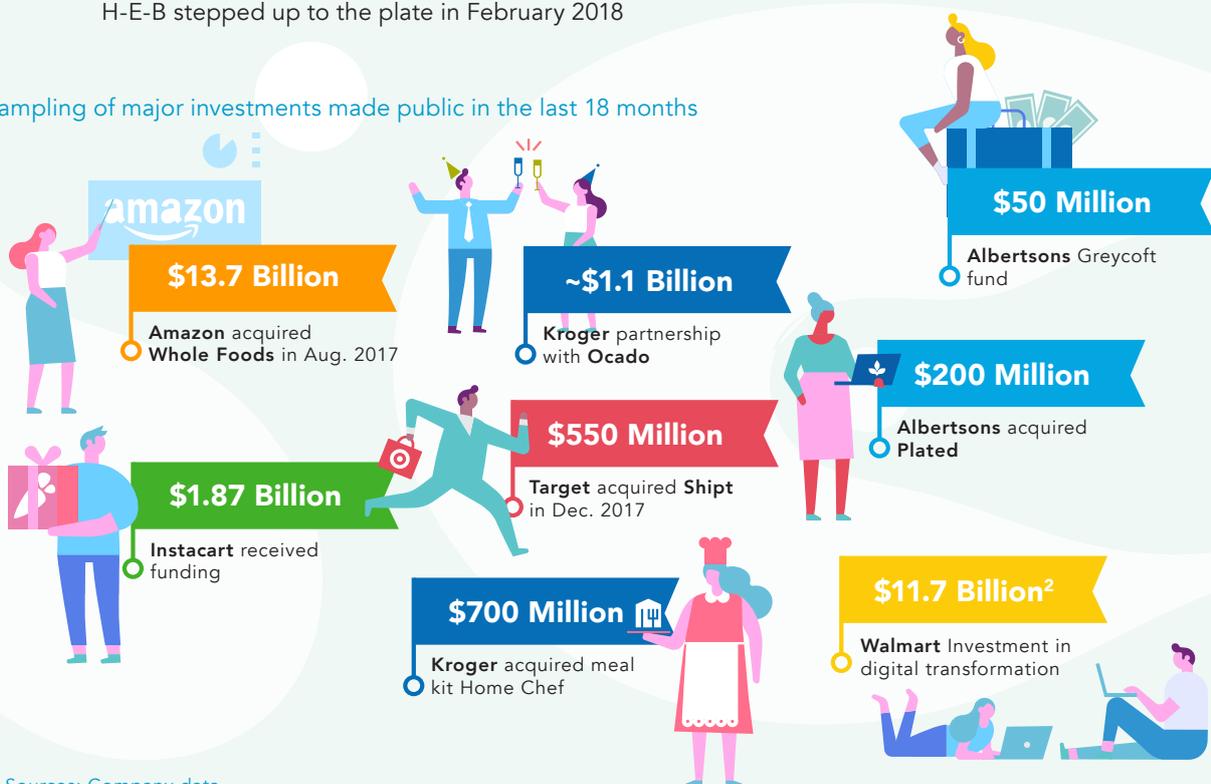
In addition to the massive rollout of curbside pickup and delivery options, retailers made significant investments in the e-commerce space in the last 18 months. In 2018, Walmart spent a total of \$11.7 billion in technology investments, much of it specifically focused on optimizations for online grocery. In the same year, Kroger announced a landmark deal with British e-grocer Ocado to build 20 335,000-square-foot automated warehouses for online orders, each one estimated to cost around \$55 million to build.¹

But the grocery giants weren't the only ones innovating. In March 2018, Ahold Delhaize announced the launch of Peapod Digital Labs, a new entity dedicated to driving digital and e-commerce innovation. Even beloved Texas chain H-E-B stepped up to the plate in February 2018

and after 113 years of never buying or merging with another company, it acquired Favor, an on-demand delivery company, for an undisclosed amount.

Of course, the specter looming behind this frenzy of innovation was Amazon, whose landmark acquisition of Whole Foods in the summer of 2017 changed the competitive landscape of online grocery forever. These enormous investments make it clear that the digital age has arrived for brick-and-mortar grocery and that retailers are demonstrating commitment to improving their e-commerce supply chain logistics and overall customer proposition. We expect this spirit of innovation to only gain momentum in 2019 and beyond.

A sampling of major investments made public in the last 18 months



Sources: Company data

¹ Grocery Dive, "Kroger and Walmart outline digital transformations," January 14, 2019

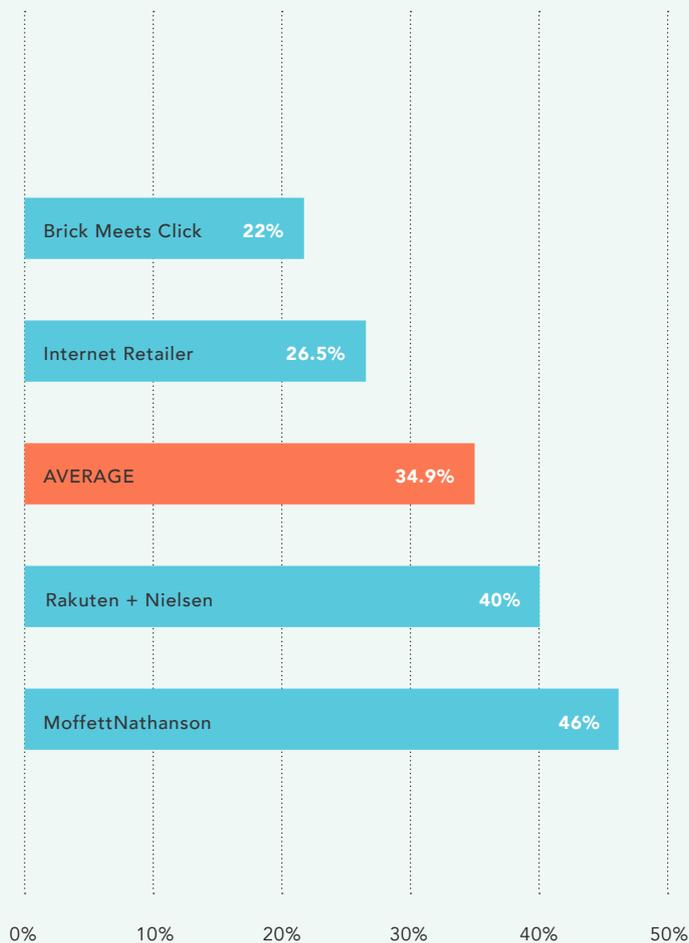
² Ibid

The average estimate for the growth of grocery e-commerce sales in 2018 was 35% YoY

THE AVERAGE INDUSTRY ESTIMATE FOR ONLINE GROCERY GROWTH FROM 2017 TO 2018 WAS ~35%



ESTIMATED GROCERY E-COMMERCE GROWTH FROM 2017 TO 2018



Until now, the supply of online grocery offerings has been quite limited, so it's unsurprising that e-commerce penetration has been low compared to other developed markets. But driven by the sizeable investments retailers made in the e-commerce space, 2018 marked a year of surging demand and growth.

After surveying some of the most prominent names in the industry, we calculated that the average industry estimate for online grocery growth from 2017 to 2018 was ~35%. That brings 2018 online grocery sales to an estimated \$24 billion, which represents 3% of the \$800 billion total grocery market in 2018.¹ Retailers took note of this immense growth, and after many years of skepticism and disbelief that the shift to online would ever happen for grocery sales, it became clear in 2018 that e-commerce is now here — and it's here to stay.

Sources:

- Nielsen, "Omnichannel Fast Facts on the In-Store and E-Commerce Landscapes," October, 2018
- MoffettNathanson, "Food Survey: Channel Shift Pressures Profit," November 27, 2018
- Rakuten Intelligence, "The rise of the full-assortment grocery channel," August 28, 2018
- Brick Meets Click, "How the online grocery market is shifting," July 29, 2018
- Internet Retailer, "2018 Edition: Online Food Report"

¹ Morgan Stanley, "Food Retail: The War of Attrition Has Begun," September 27, 2018

HOWEVER, WE ANTICIPATE THAT RETAILERS WILL FACE **THREE** **MAJOR CHALLENGES** IN THE IMMEDIATE FUTURE

Despite all the strides retailers made in 2018 in preparation for the impending growth of grocery e-commerce, it's clear that the coming months and years will present new obstacles. Specifically, we've identified "the 3 Ps" as particular challenges: proposition, profitability, & penetration.



PROPOSITION



PROFITABILITY



PENETRATION

PROPOSITION

Alarminglly, retailers are focusing on a less appealing customer proposition

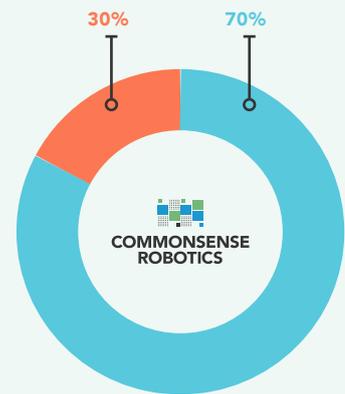
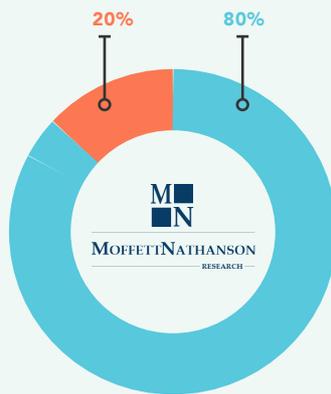
Many retailers are dead-set on maximizing their most important assets: their brick-and-mortar stores. This “squeeze the store” mindset has fueled the massive growth of the curbside pickup strategy, which not only appears to mitigate the costly last mile of delivery but also makes use of retailers’ existing infrastructure.

But when given a chance to choose between home delivery and curbside pickup, consumers prefer home delivery by a margin as high as 4 to 1.

According to these survey results, home delivery is far more popular than curbside pickup, and according to MoffettNathanson, contrary to the popular “mom in an SUV” theory, this effect is more pronounced in rural areas than urban areas.

This is likely why MoffettNathanson projects that home delivery sales will far outpace curbside pickup sales in the long run; “this runs counter to the grocer narrative that extolls curbside pickup as the pure multichannel solution.”¹

CONSUMERS PREFER HOME DELIVERY OVER CURBSIDE PICKUP



Sources:

- Nielsen, “Curb Appeal: Are You Ready for Click & Collect?,” February 2018
- MoffettNathanson, “Food Survey: Channel Shift Pressures Profit,” November 2018
- CommonSense Robotics US Consumer Survey, July 2018

¹ *MoffettNathanson*, “Food Survey: Channel Shift Pressures Profit,” November 2018

PROPOSITION

Only one brick-and-mortar retailer is making same-day delivery its primary focus

Home delivery is more popular among consumers than curbside pickup, but not all home delivery is created equal. In a July 2018 consumer survey we conducted, we discovered that the majority of consumers would prefer same-day delivery over next-day.

And while the rollout of same-day home delivery increased by 5x in 2018, much of that growth can be attributed to retailers partnering with third-party fulfillment solutions such as Instacart, which saw 120% year-over-year growth in 2018.

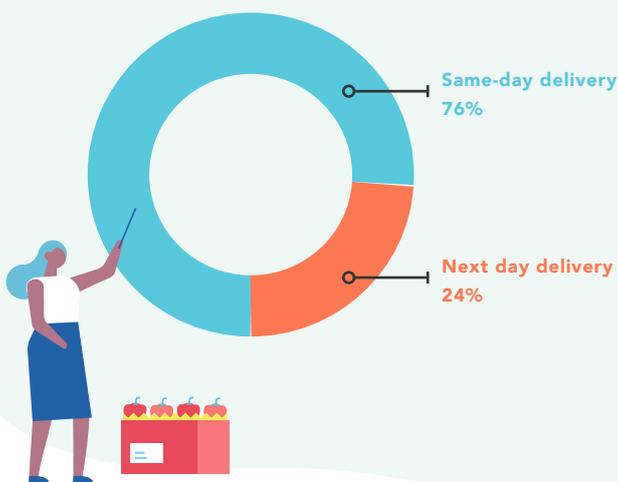
According to Deutsche Bank, of 23 major retailers, only two are making same-day (or faster) delivery their primary focus¹: Target, who acquired Shipt at the end of 2017 and now serves 200 metro

markets with same-day delivery, and Amazon, who expanded Prime Now grocery delivery from Whole Foods in 63 cities across the U.S. by the end of 2018.

Likely because same-day home delivery presents such tremendous operational, strategic, and financial challenges to brick-and-mortar retailers, the priority has clearly been curbside pickup, despite its relative unpopularity among consumers.

Even if retailers are rolling out curbside pickup as an interim solution while they figure out their long-term e-commerce strategy, the consumer has spoken — if not yet with their dollars. The question to ask now is: how long can you continue to bet against what the consumer wants?

CONSUMERS PREFER SAME-DAY OVER NEXT-DAY DELIVERY



Sources:
 Deutsche Bank, "Food Fight: Convenience & Digital Grocery Options at Tipping Point," October 9, 2018
 CommonSense Robotics US Consumer Survey, July 2018

HOWEVER ONLY AMAZON AND TARGET ARE MAKING SAME-DAY (OR FASTER) THEIR PRIMARY FOCUS



¹ Deutsche Bank, "Food Fight: Convenience & Digital Grocery Options at Tipping Point," October 9, 2018

PROFITABILITY

Retailers today lose \$5 to \$15 on every online grocery order

Asset utilization, cost allocation, transfer prices, cost capitalization...all the accounting magic in the world can't save grocery retailers from an unfortunate basic truth: it's impossible to transform a self-service business model with single-digit profit margins to a full-service business model and still remain profitable. That's especially true when the picking of items for a typical \$110 grocery order takes most of a precious labor hour, costing around \$20 of fully loaded labor costs.¹

According to our estimations, retailers incur a pure loss of \$5 to \$15 on every manually picked online grocery order. This only gets worse when playing a volume game. Sending more people to pick more goods from more stores doesn't create an economy of scale; it actually only causes efficiency and effectiveness to further deteriorate.

The solution to the profitability problem won't come so easily

DARK STORES

Moving from in-store manual picking to a dedicated facility to solely support e-commerce is a model many retailers see as the logical next step. Known as "dark stores" because they have no physical customers, it's assumed that dark stores make it possible to scale e-commerce operations in an effort to increase efficiencies and reduce costs. However, running a dark store means that entirely new real-estate costs become overlaid on top of already-negative margins for manual picking. We estimate that dark stores in fact double the dollar loss for each order.

AUTOMATION

While automation solves for scale and economics, the challenge is that most automation vendors can only enable next-day delivery propositions. Given that same-day delivery rollout increased by 500% in 2018, this seems like a solution for 2017 and not the future.



¹ MoffettNathanson, "Food Survey: Channel Shift Pressures Profit," November 2018

PROFITABILITY

Banks predict grocery retailers will lose 30% of profits as a result of e-commerce

We believe food retailers will be pressured from the double whammy of online fulfillment and competition ... **Industry EBIT margins, already slim at 3%, could shrink another 90 bps by 2023.**

MORGAN STANLEY

By 2025...we should likewise expect total industry **margin to deteriorate by approximately 140 bps** from a weighted average of 3.7% to 2.3%.

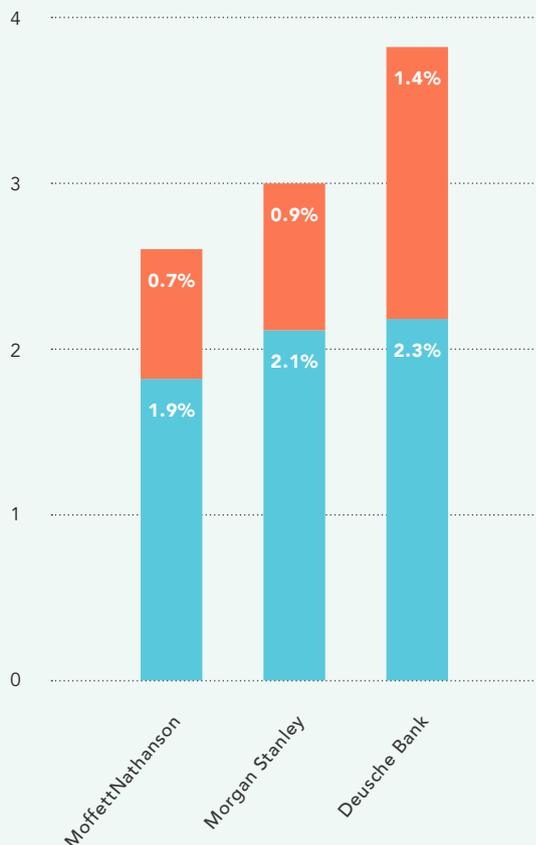
DEUTSCHE BANK

We see multichannel grocery as a 70bps+ margin headwind in isolation... With online operating margins negative mid-single digits... **we estimate that total grocery industry margins would fall under 2% by 2025.**

MOFFETTNATHANSON

TOTAL GROCERY EBIT MARGINS AT RISK BY THE YEAR 2025

Margins at risk (orange) New projected margins post e-commerce growth (blue)



PENETRATION

Despite the doubts of retailers, e-commerce sales penetration is on track to reach over 10% in 5 years

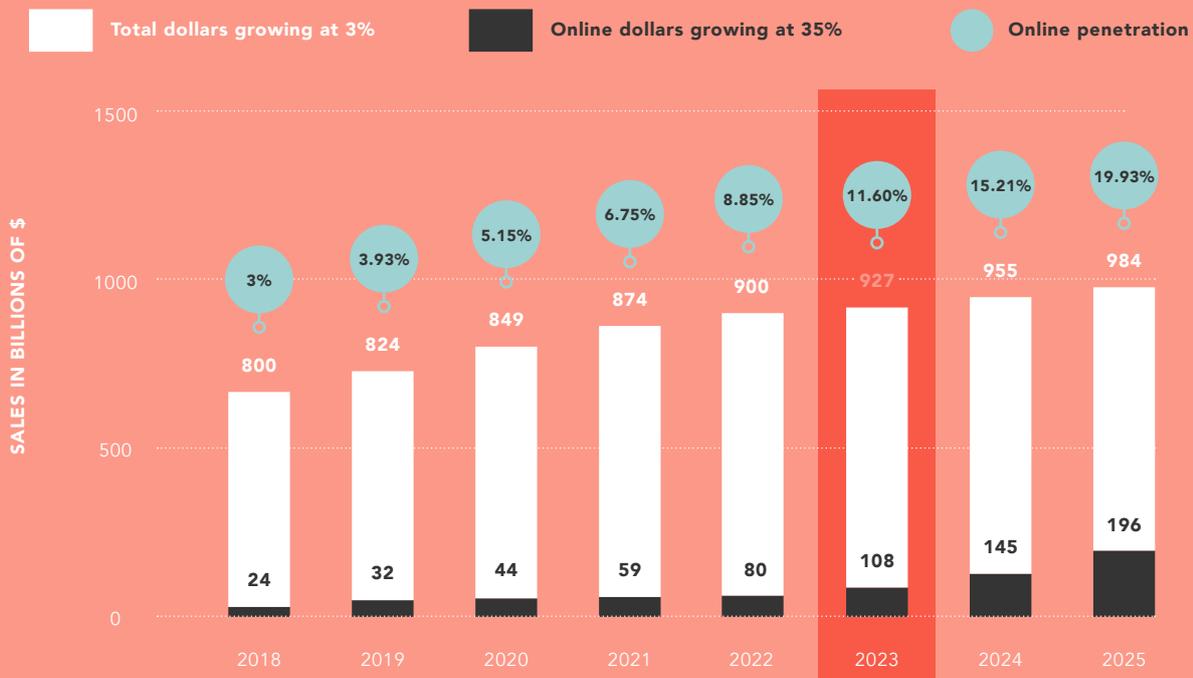
If growth continues at the same rate of 35% year over year — given that online grocery is still in its infancy and 2018 marked the first serious year of action and investment — the online share of grocery sales would more than triple from the 3% it's at today to over 10% by 2023.

In other words, double-digit grocery penetration is quite likely to become a reality in just five years, a notion that many grocery retailers are hesitant to accept. Perhaps it's simply hard to believe the unbelievable until it happens; perhaps it's because this disruption is too threatening to even entertain.



ASSUMING ONLINE GROCERY CONTINUES TO GROW AT THE 2018 RATE OF 35% YEAR OVER YEAR, THE ONLINE SHARE OF TOTAL GROCERY SALES WILL REACH OVER 10% BY 2023.

Projected growth of the grocery industry



Sources:

MoffettNathanson, "Food Survey: Channel Shift Pressures Profit," November 2018

Deutsche Bank, "Food Fight: Convenience & Digital Grocery Options at Tipping Point," October 9, 2018

CommonSense analysis

**YET THE
MAJORITY OF
RETAILERS DON'T
BELIEVE THAT
ONLINE SALES
PENETRATION
WILL GO ABOVE
10% AND AREN'T
PLANNING
ACCORDINGLY**

We have three reasons to believe online grocery penetration will reach 15-20% by 2023



We believe that online grocery sales will grow even faster than the steady state 35% year over year and that the online share of grocery sales is likely to reach 15-20% in just a few years. Our projection is rooted in three main non-linear reasons.

DEMAND WILL FOLLOW SUPPLY

The rollout of online offerings only started to meaningfully grow in 2018 and all signs point to it continuing to expand over the next several years. That means that the majority of U.S. consumers suddenly have newfound access to same-day and next-day grocery delivery as well as curbside pickup. The long-term impact of these changes still remains to be seen, but we anticipate that increased demand will closely follow the increased supply, and online grocery sales will accelerate in growth.

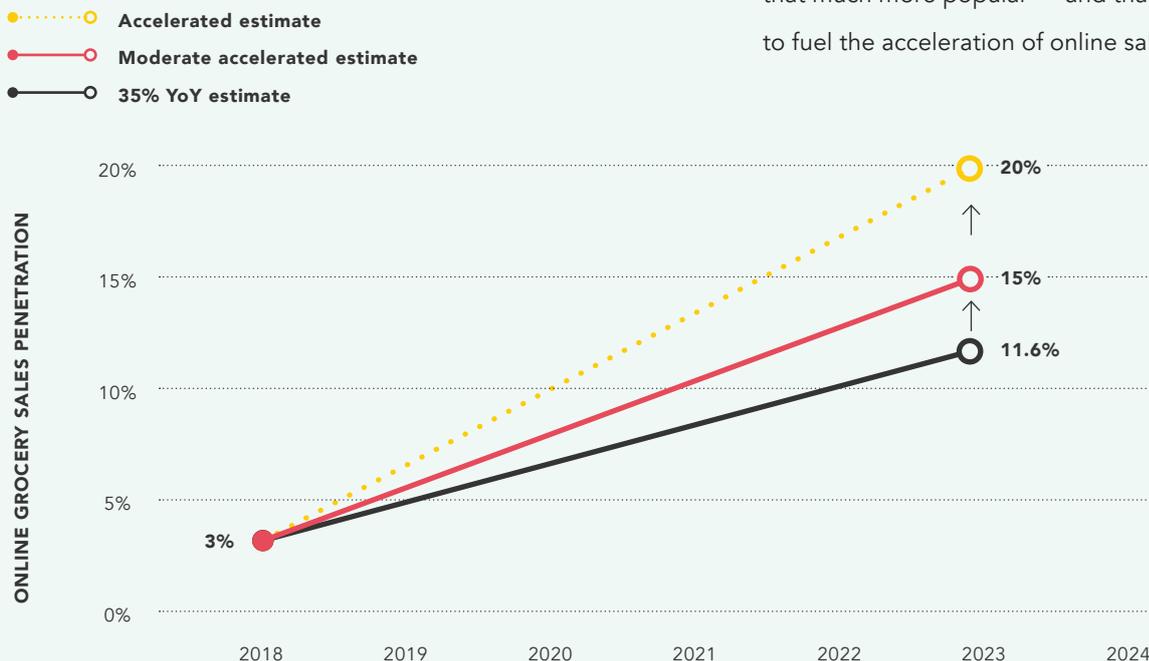
INVESTMENTS HAVE BEEN UNPRECEDENTED

In addition to the rollout of delivery and curbside pickup offerings, retailers are continuing to make significant investments in the online grocery space. AI, endless aisles, robotics, and autonomous vehicles are no longer futuristic fantasies; for grocery retailers serious about grocery e-commerce, they're necessities to improving the customer proposition and staying relevant in a highly competitive market — and are highly likely to only accelerate future growth.

FEES ARE DROPPING

Finally, Amazon's offering of free two-hour grocery delivery for all Prime Members, Target's offering of free same-day delivery for Shipt members, and Instacart's slashing of delivery and subscription fees should serve as a canary in the mine shaft for grocery retailers. We predict that the habituation of American consumers to a new, more affordable channel of grocery delivery will make the customer proposition that much more popular — and that much more likely to fuel the acceleration of online sales.

Projected growth of online grocery sales in five years



The road ahead

The steps that grocery retailers took in 2018 should be applauded and the 35% growth of online grocery in the past year is a clear signal that consumer preferences are shifting towards online grocery shopping. Yet so much of grocery e-commerce as it exists today is unsustainable when we look towards the future. Meeting customer expectations for fast home delivery, learning how to own more pieces of the consumer journey instead of outsourcing it, innovating to control costs while improving offerings — these factors could all be exciting opportunities for leading grocery retailers...or costly mistakes.



ABOUT COMMONSENSE ROBOTICS

You want to get your fresh groceries faster.
So do we.
That's why we started CommonSense Robotics.

Our mission is to enable grocery retailers to profitably fulfill and deliver online orders within one hour. To make this a reality, we build networks of automated Micro-Fulfillment Centers in dense urban areas that combine the speed of local delivery with the efficiencies and scale of robotic fulfillment.

Our proprietary robotic and AI technology, together with a pay-as-you-go service proposition, enable our retail partners to profitably deliver to their online customers within one hour and scale their operations as their business grows.

Founded in 2015, we're backed by top-tier VCs Innovation Endeavors, Aleph, and Playground. We've recently completed our first commercial deployment and are rapidly scaling our operations. We're redefining the way goods are fulfilled and delivered within cities, so that we all get our groceries faster.