Grocery Insights 2022

Final Call for German E-Grocery

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Executive Summary

The German food retail industry has experienced unprecedented disruption in the last few years. The industry has had to deal with substantially changed shopping behaviors due to the COVID-19 pandemic, which gave rise to previously unknown phenomena from hoarding to contactless delivery. This provided an ideal breeding ground for new and not-so-new players such as Picnic, Getir and Gorillas who flourished with their on-demand, (rapid) home delivery offers. And while additional disruptions such as grounded vessels in the Suez Channel, continued inflation or global political conflicts are difficult to predict, one thing is certain: e-commerce and digital services in food retailing will continue to pose a serious threat to traditional sales channels and players.

This study by Accenture and GfK looks at current consumer trends as well as market developments and examines the ingredients of successful e-grocery offerings. We outline key scenarios for the German food retail industry in 2030 and provide retailers with specific insights to accelerate their transformation and secure one of the scarce spots as a major e-grocery player in Germany 2030.

Despite lagging behind other European countries such as the UK and France thus far, e-grocery is set to come to the forefront of German food retailing in the period up to 2030. Our projections indicate a grocery e-com & omnichannel share of up to 17% of the total market which substantially limits the leeway for pure brick-and-mortar offerings. Still, established grocery retailers do have a chance to participate in the omnichannel part of the industry and thereby counterbalance downturn in brick-and-mortar market share.

However, most of the major brick-and-mortar players in Germany currently do not have comprehensive e-grocery offerings ready to scale. This makes the industry vulnerable to disruption from pure plays like Picnic or Ocado, often backed by venture capital, or from retail giants like Amazon or JD.com who have deep enough pockets to promptly create and scale new business models. It would be a costly mistake for established grocery retailers to let new competitors enjoy an early-mover advantage on top. The window of opportunity to gain a significant share of the German E-grocery market is closing fast.

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Key Trends

To predict how the German grocery retailing landscape might look in 2030, it's important to understand the current state. To gain deeper insights into recent developments and particularly current consumer needs and expectations, we examine key trends gaining traction with today's grocery shoppers.

Booming home delivery fueled by need for convenience

Food shopping is an essential part of our everyday life: we fill the shopping cart, carefully select the nicest produce, wait in line to pay and then carry or drive the overloaded bags home all by ourselves. Or, at least, that was the way it worked until recently. New tech-savvy start-ups such as Picnic or Gorillas are entering the highly competitive German grocery market and aim to revolutionize the way Germany buys groceries.

For example, the Dutch online supermarket Picnic, one of the fastest growing e-grocery startups in Europe, offers doorstep grocery delivery at competitive prices, with no shipping fees. Groceries are ordered exclusively through the Picnic app. Customers can – at the touch of a button – select from a wide range of products, from fruit and vegetables, fresh meat and baked goods to toilet paper and shampoo. Once placed, the order is usually delivered the next day, with Picnic's one-hour delivery windows – which are shortened to 20 – 30 minutes on the delivery day – setting it apart from competitors (with longer, often half-day, delivery windows). For the last-mile delivery Picnic has its own eco-friendly fleet of 2.000 electric vehicles that operate in 45 cities in North Rhine-Westphalia (NRW) with new locations being added almost monthly.

Picnic just celebrated its seventh birthday, and it looks like the new kid on the block is here to stay, with revenues in the EU growing by almost 100% to 455 million EUR in 2020.[1] Although Picnic in Germany has only operated in NRW so far, the number of customers has grown fourfold to more than 200.000 households within twelve months.

In Germany, the major grocery market player EDEKA announced an exclusive partnership with Picnic, alongside taking a 20% stake in Picnic International[2]. For Picnic's founders, the next steps are clear: further expansion into Germany and entry into the French market. To this end, the company has raised 600 million EUR from prominent investors including The Bill & Melinda Gates Foundation and is now valued above 1 billion EUR[2] (also see retailer spotlight on Picnic on page 22).

Same, same but different: dark store and e-bikes

Striving towards the same goal of challenging the traditional way of grocery shopping, the Berlin-based start-up Gorillas relies on a different type of business model. Unlike Picnic, which targets the traditional weekly shopping by offering a wide assortment of over 10.000 items, Gorillas has set its focus primarily on spontaneous, smaller purchases through a more limited product assortment (2.500 items). As their "faster than you" slogan suggests, the start-up promises to deliver groceries at supermarket prices within 10 minutes of ordering via the Gorillas app. There is no minimum order value, but the retailer charges a modest delivery fee of 1,80 EUR[3] plus 2,10 EUR for orders below 15 EUR (also see page 39 about q-com).

To live up to this promise, Gorillas operates its own "dark stores" in densely populated, high-demand areas – effectively small warehouses where products are stored, packed into orders and handed to drivers. Typically, each dark store covers one neighborhood, enabling easy access to their customers and reduces both last-mile costs and delivery times. Once a customer orders via the Gorillas app, pickers in the hub collect the items which are then delivered by Gorillas' so-called "riders". Further, to avoid any delivery delays due to traffic, riders use e-bikes instead of vans or trucks. For an enhanced customer experience, shoppers can track their rider in real-time to their front door.

Gorillas reached unicorn status with the same speed at which it promises to deliver, with a 850 million EUR valuation just nine months after launch. After the latest funding round, the valuation has risen further to 2,6 billion EUR. Recently, the company reported annual sales of almost 190 million EUR[4] and 4,5 million orders within six months, while expanding operations from Germany to seven other European countries and the US.[3]

Convenience orientation driven by digitalization

From a strategic perspective, both start-ups have positioned themselves as making grocery shopping as convenient as possible for the customer. In particular, by ordering via the Picnic or Gorillas app, customers are not only able to save time but also to reduce physical and mental effort (e.g. getting to the stores, picking and carrying items etc.). The ability to bring greater convenience to everyday grocery shopping is how Picnic and Gorillas differentiate themselves from traditional grocery retailers. For example, Gorillas states on its website that "we have the technology to go to the moon, grocery shopping has to be radically faster and much more convenient!", while Picnic highlights being the "delivery service that saves time and respects their customers' time".

Digitalization has been key to consumers' growing demand for convenience. With the Internet and smartphones, employees in numerous industries now are always connected and reachable. With the traditional concept of nine-to-five office work largely shifted to remote work models during COVID-19, further blurring the spheres of work and private life, free time naturally became an even more scarce resource. The success of the abovementioned business models illustrates consumers' inherent

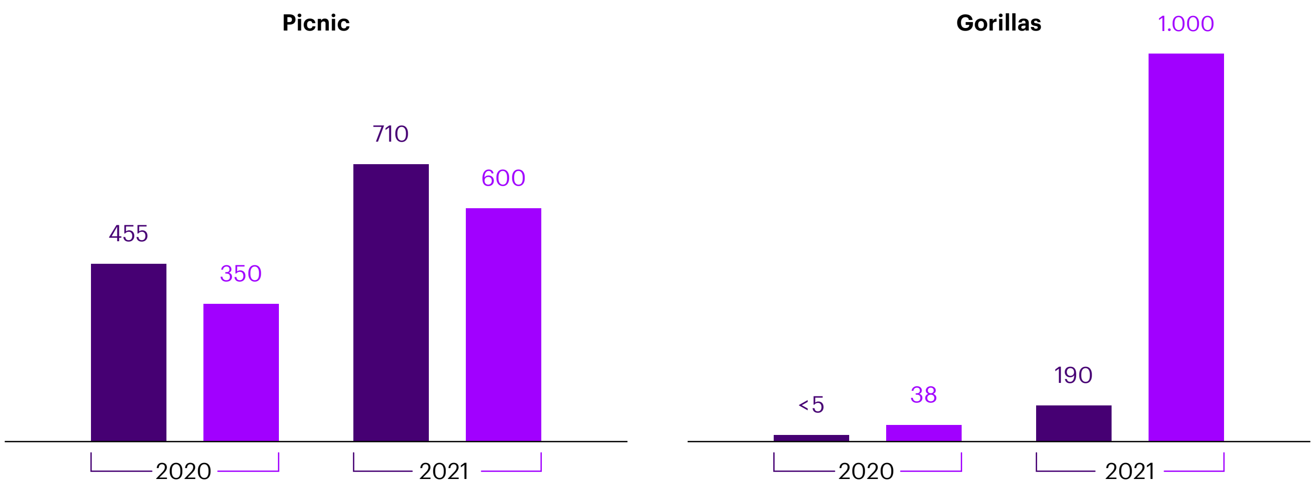


Figure 1: Revenue vs. Funding of Picnic[5] and Gorillas[6] (in million EUR)

Revenue Funding

need for less complexity in everyday life. In today's fast-paced world, more and more customers see completing basic everyday tasks as a drain on valuable time. In recent surveys, one in three Germans felt pressed for time and, in response, many are increasingly looking for services that make their everyday lives simpler and more efficient and free up time for other activities.[7]

Increased expectations towards grocery retailers to make shopping easier and more efficient, as indicated by a recent Accenture consumer survey, therefore come as little surprise and grocery delivery services, such as those provided by Picnic or Gorillas appear ideally positioned to address this.[8]

Expanding assortments driven by individualization of needs

You cannot walk into any hip coffee shop in Berlin without seeing the iconic cartons of Oatly. Started as a niche brand, Oatly has grown into a trendy milk alternative available in more than 20 countries globally. The products quickly entered the aisles of leading grocery retailers and are now also served at Starbucks.

Founded in Sweden, Oatly is a vegan food company. Its signature product is a 100% plant-based milk alternative made from oats. By providing consumers with plant-based milk substitutes, Oatly positions itself as a company helping consumers lead healthier and more sustainable lifestyles that don't deplete the planet's resources. With slightly above-average characteristics of the values 'success' and 'integrity', the values 'hedonism' and 'closeness to nature' are of central importance for Oatly consumers.[9] More traditional values, on the other hand, play a subordinate role with these buyers.

With this sustainable, and purpose-driven brand image, Oatly gained popularity amongst both consumers and investors. As sales in Germany have grown almost thirty-fold in the past four years the company has reported rapid revenue growth (Fig. 2).[10] Milk substitutes are in vogue on the stock market too: when Oatly went public last year, it was valued at 8,5 billion EUR, which is typically only see with tech companies' IPOs.

Reinforced by movements like #FridaysForFuture, sustainability has become a top priority for many consumers, who are increasingly conscious of social and environmental issues and demanding action from retailers. Nearly one third of German consumers now expect food retailers to offer more sustainable grocery options, and most consumers claim they would not hesitate to pay more for these.[8]

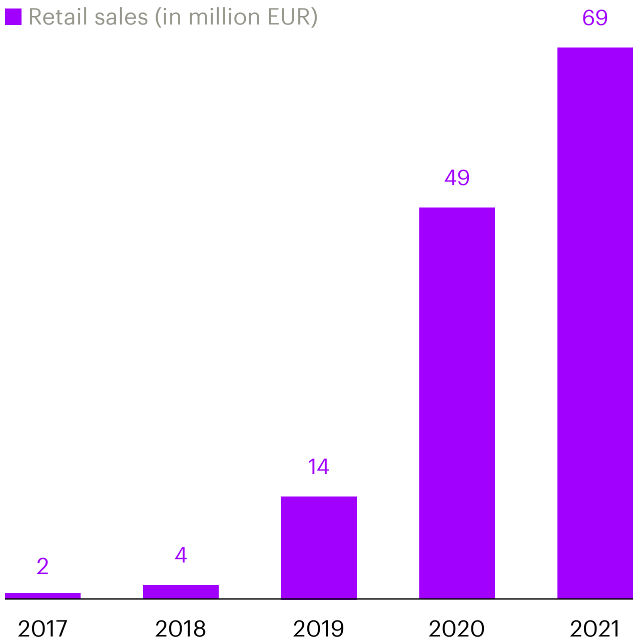


Figure 2: Growth trajectory of Oatly in Germany[10]

The fact that more than three-quarter of German consumers would switch to a grocery retailer who better understands and responds to their sustainability concerns shows that food retailers are now no longer just competing on assortment, but "purpose".[8] The success of examples like Oatly illustrates that today's consumers are looking for brands that match not only their individual consumption and eating habits, but also their values.

Brands like Oatly address today's highly differentiated consumer needs within food retailing

With sustainability now a strategic differentiating factor for food retailers, assortments across numerous categories are being constantly extended to include sustainable alternatives. In response to increasing competition from innovative vegan brands, established consumer packaged goods giants like Nestlé and grocery retailers like Rewe have recently launched their own plant-based substitutes (e.g. Nestlé's "Garden Gourmet" range and Rewe's vegan own-label products). A search for "vegan" in Rewe's online store yields more than 1.100 results.

However, the expanding product range across categories is not only fueled by sustainable brands, but also those that have integrated social purpose into their business models (such as Viva con Aqua and Share). Powered by their popularity amongst younger consumers, they too continue to push their way into grocery shelves – with significant impact on incumbent brands. While annual sales of vision and purpose brands (incl. e.g. Oatly, followfish and Veganz) have recorded significant growth of ~28% on average, established consumer brands in the same categories grew by only 3%.[9] These results underline the relevance of purpose and vision brands for both consumers and retailers.

Taking a step back enables this expanding assortment to be contextualized amongst the broader diversification in lifestyles and consumption that food retailers are having to respond to. In the wake of the ongoing individualization of today´s societies, consumers are increasingly emancipated from traditional forms of life. The pursuit of individuality and self-determination has led to new lifestyles and to a pluralization of values and consumption patterns. There have never been more nutritional trends than there are today – vegan, paleo or intolerance-related diets being just a select few examples. Retailers are confronted with highly fragmented consumer demands, which they are having to mirror on the shelves: while an average German supermarket in the 1980s offered around 6.000 different products, today's assortments run into the tens of thousands, reflecting the heterogeneity of modern consumer values and lifestyles.

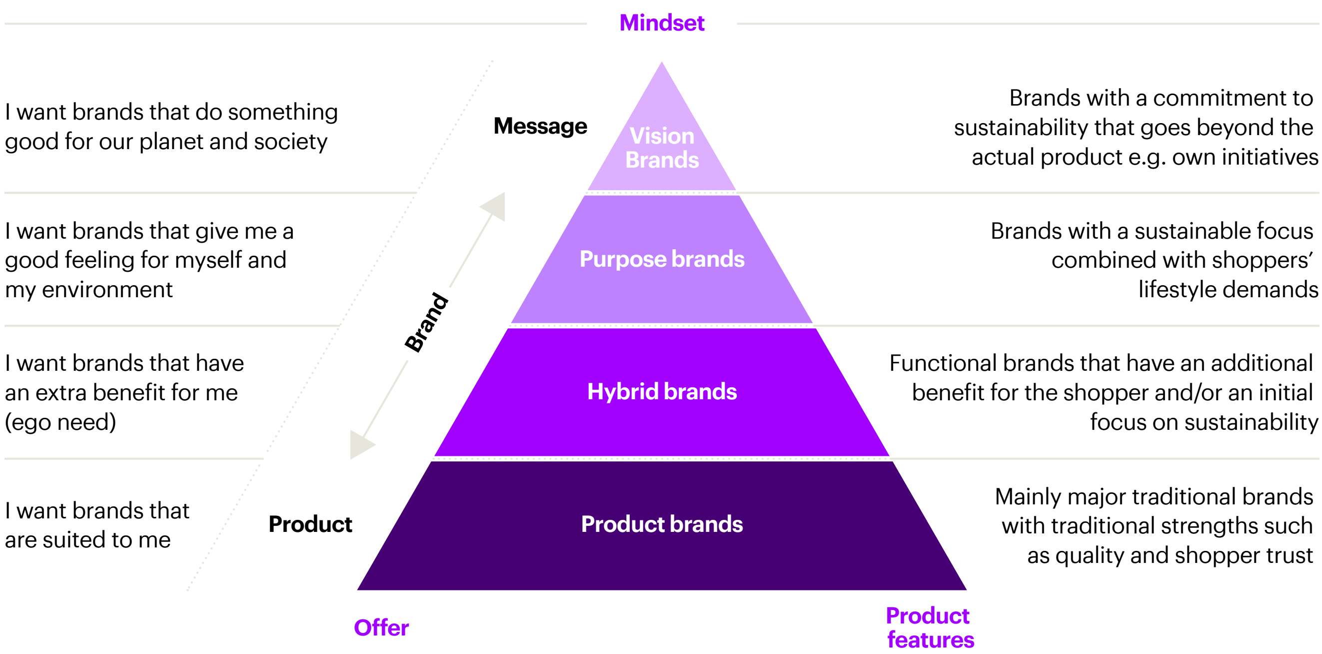


Figure 3: GfK hierarchy of needs

Experience-focused retail creating a sense of belonging

In 2021, the Swiss retailer Migros launched a new store concept called BRIGDE. Located in the heart of Zurich, BRIGDE is a mix of supermarket, regional gastronomy offering, and event location, that's been designed to create a unique culinary world and provide a new and compelling in-store experience aimed at food lovers. On 2.000+ square meters, it offers fresh and seasonal products from local farmers, bistros and bars, as well as a "food-lab' hosting a variety of events and cooking classes where customers can learn more about food and the local food community.

With the mantra "meet food, meet market, meet people", the format positions itself as a passionate ambassador of good food that connects people with high-quality products. Its mission is to create a place for the food community to meet with friends and share food-related experiences, with freshness, regionality, and seasonality at the heart. To ensure customers find a truly unique assortment, BRIDGE partners with small and local food producers who offer everything from healthy and homemade to vegan products. By eliminating digital screens, the format focuses on physical, haptic experiences. Nonetheless, the "instagrammable" interior provides customers a welcome opportunity to share in-store experiences on social media.

With a similar concept, the Italian food market Eataly has grown in popularity over the last few years. The retailer opened its first grocery store in Turin in 2007 and has since expanded to operate about 30 stores across the world, serving a huge fan base across cities like New York, Tokyo, Sydney, Paris and Munich. In a similar way, Edeka Zurheide in Düsseldorf provides a unique in-store shopping experience by focusing on product quality and service. The supermarket features a variety of food worlds with special service counters. Each of them contains of its own in-store dining area (e.g. premium beef bar).

The success of experience-based store concepts illustrates consumer's desire for social interaction. With the COVID-19 pandemic forcing professional and private relationships from the physical to the digital world, a great experience shopping at a physical location has now become even more valuable to consumers. A recent survey shows that one in four consumers prefer shopping in-store to online so they can spend time with friends and family.[13] In a digitalized world, shopping is a way to deepen relationships and friendships and create a sense of belonging. Shopping for today's consumers is therefore no longer just about buying something, but also about sharing experiences and building and deepening relationships with others.

Overall, whilst macro trends such as individualization, sustainability, and digitalization continue to dominate the German grocery retail landscape, trends towards convenience- and experience-focused retail reveal the extent of evolving customer needs and expectations.

Consumer behavior changes due to the pandemic shock

The COVID-19 pandemic has had a seismic effect on shopper behavior, both reinforcing some pre-existing trends in the retail sector and triggering new ones: over 25% of consumers significantly changed their daily shopping behavior in the first year of the pandemic.[11] These changes can be directly attributed to five driving forces:

Balance

Health & wellbeing:
- Attention to mental/physical health/appearance
- Healthy nutrition and information
- Moderating 'bad' products

Budgeteering

Budget decisions:
- Attention to price, special offers, quality
- Basket size
- Added value, premium and special benefits

Purpose

Social responsibility:
- Buying eco/ animal friendly
- Local products/ socially equitable brands
- Looking for information/ inspiration

Findability

How you shop:
- Use of a shopping list, buying different products
- Shopping groceries/ special products online
- Shopping fast, use of technology

Fluidity

Occasions you shop:
- Getting food & drinks in different ways than before
- New needs because of working from home
- Shopping else-where or at different times

Figure 4: Shopper behavior drivers impacted by COVID-19[11]

Balance

The need to slow down and take control over the past two years propelled new product categories into the spotlight and intensified focus on wellness: 50% of shoppers paid extra attention to physical health during the pandemic, 48% to mental wellbeing and happiness and 41% to product labels and ingredients.[11] Even as the pandemic recedes, mental and physical health, self-care and rejuvenation remain at the forefront of shoppers' minds.

As part of returning to (a new) normal, many want to continue taking greater care with their diet, for example, by reducing consumption of "unhealthy" foods. Closer attention to ingredients will therefore naturally increase, and the proliferation of the nutri-score across brands (including grocery retailers' private labels) is proving a valuable, pertinent tool to assist consumers in this mission.

Budgeteering

Another impact of the pandemic, which has only been exacerbated by recent surging inflation, has seen consumers becoming more mindful of their budgets when making household purchases. Increased price sensitivity and consideration of price vs. quality now sees 66% checking the prices of grocery products they intend to buy, 52% shopping in stores with the best promotions and 43% actively trying to keep the cost of their shopping baskets low.[11]

The years ahead will be marked by a need for budget engineering, which means balancing budget, lifestyle demands and perceived quality. Willingness to purchase premium products may not necessarily cease, but consumers are likely to be increasingly selective as to how and where they choose to splurge.

There are multiple examples of retailers who have used e.g. color-guided price signing in store to guide shopper to those items, that help to save budget: Promotions are communicated in orange and low prices or value for money in blue. See also page 46 on pricing trends and capabilities in Germany.

Purpose

Consumers have shifted towards more sustainable purchasing, with both environmental and social purposes being key purchase drivers: 37% made a conscious effort to buy from brands that care about animal welfare, whilst 37% switched to locally produced items. More and more shoppers also want to reduce their carbon footprint.[11]

Consequently, the hierarchy of choice is less defined by price, and increasingly a reflection of personal values. Shoppers look for brands and products that seamlessly meet their lifestyle demands and do good. Purposeful purchasing – at the expense of functional purchasing – is here to stay.

Purposeful purchasing is not limited to products; grocery retailers also need to comply with this concept in order to be successful. A key example would be trying to decrease food waste by participating in initiatives like "Too Good To Go", which aims to let customers rescue unsold or surplus food from shops and restaurants via a smartphone app. Clearly communicated efforts to reduce plastic packaging or minimize carbon emissions by purchasing from local producers is further evidence of the growing importance of this trend in German grocery retail.

See also page 51 on retailers' role and options in creating a sustainability narrative.

Findability

COVID-19 has significantly reduced the number of touchpoints on the grocery shopping journey, as consumers have tried to spend as little time as possible in stores over the last two years. 49% of shoppers mentioned that they tried to do their grocery shopping as quickly as possible during the pandemic, with 27% making use of new technology (such as self-scan) and 14% doing their main weekly grocery shop online as a result.[11]

Making a shopping list and shopping at speed will persist, with the resulting reduction in dwell time and willingness to be inspired in-store making product "findability" a key to grocery retailers' success. Increased use of new in-store technology to this end will certainly influence the grocery experience going forward.

To enable consumer inspiration outside the actual shopping trip, some retailers are also coming up with innovative solutions such as recipe apps, where all the ingredients needed to make a dish can be added to the shopping list at once or bought with one click directly via the app.

Fluidity

During the pandemic, home became the office, school, store, restaurant and holiday destination – all at once. This fluid living situation created new scenarios and demanded flexible solutions. In 2020, 29% of consumers shopped at different times of day than they had previously and 16% shopped at different stores.[11] As a result, besides omnichannel retailers or online pure plays for whom addressing the impact of "fluidity" is ingrained in their offering, some retailers piloted autonomous micro stores or even driving kiosks to allow 24/7 shopping near consumers' homes and or offices.

However, as we return to normality and highly disruptive lockdown periods become a more distant memory, related behavioral changes and novel solutions to address them will arguably abate to a degree.

3 Elements of Change: German Grocery Retail 2017–2021

Food retailing has largely been the standout winner of the COVID-19 crisis. In 2021, sales grew to more than 168 billion EUR (inflation-adjusted), with total revenue split among six key store formats. Discounters (e.g. Lidl, Aldi) and supermarkets (e.g. Edeka, Rewe) represent the most relevant store formats for German consumers, accounting for more than 64% of the market between them (35% and 29% respectively). Specialists (e.g. bakeries, organic supermarkets), hypermarkets (e.g. Kaufland, real) and drugstores chains (e.g. dm, Rossmann) then account for 15%, 12% and 6%, respectively, while e-commerce (e.g. Rewe Online, Picnic, Amazon) currently only makes up 3% of total sales.

However, the distribution of revenue across the different store formats has certainly changed over time. As illustrated by Figure 5, hypermarkets and specialists have lost market share to supermarkets (+3 pp.) and e-commerce (+1 pp.), with the latter's growth most pronounced since the onset of the COVID-19 pandemic. With 3% market share, grocery e-com is still a relative niche at a time when almost 12% of total retail revenues across all product groups in Germany are generated online. Discounter and drugstores could mainly retain their market share from 2015 to 2021.

Whilst there is no doubt that COVID-19 has led to a rapid and fundamental shift in consumer behavior, grocery retailing was already embarking on a dynamic evolution before the pandemic started. With digitalization and fierce competition, further intensified by new entrants like Amazon, having already impacted consumer behavior well before the pandemic, it is worth briefly reviewing these previous developments in German grocery retailing.

Before the pandemic

As illustrated by Figure 5, before COVID-19, the grocery market was growing steadily, but slowly (~0,5% per year between 2017 and 2019). Discounters and supermarkets were the most popular store formats and managed to marginally increase their market share at the expense of specialists (-2 pp.) and hypermarkets (-0,3 pp.) as consumers looked either for better prices or a broader range of fresh and quality products. Drugstore chains sustained their market share.

Pandemic impact

2019 – 2020: Pandemic Onset

With the onset of the pandemic in early 2020, a significant shift in food purchasing took place. Due to the temporary closure of food outlets such as restaurants and workplace/university canteens, consumers increasingly took care of their own meals. Shoppers stated that cooking at home gains importance and in 2021 65% of respondents cooked hot meals at home every day (+3pp. versus 2019). The adaption to this new situation was reflected in significantly higher spending per household and more "one-stop" grocery shopping, which benefited supermarket formats in particular.

2020 – 2021: The new normal?

Arguably, though, the true winner of the pandemic was the e-commerce sector with a staggering 76% sales increase from 2019 to 2021, in a grocery market growing by 13% in total. This huge growth was initially driven by lockdown restrictions and curfews. However, even after restrictions were gradually eased, the sector continued to gain further market share (+0,5 pp.) between 2020 and 2021.

This continued increase clearly shows that customers have embraced the e-commerce format and are integrating it more and more into their everyday lives even as the pandemic recedes. Other formats which had already lost market share between 2019 and 2020 continued this negative trajectory between 2020 and 2021. For example hypermarkets lost market share over these two years, illustrating that the pandemic amplified pre-existing challenges faced by brick-and-mortar retail.

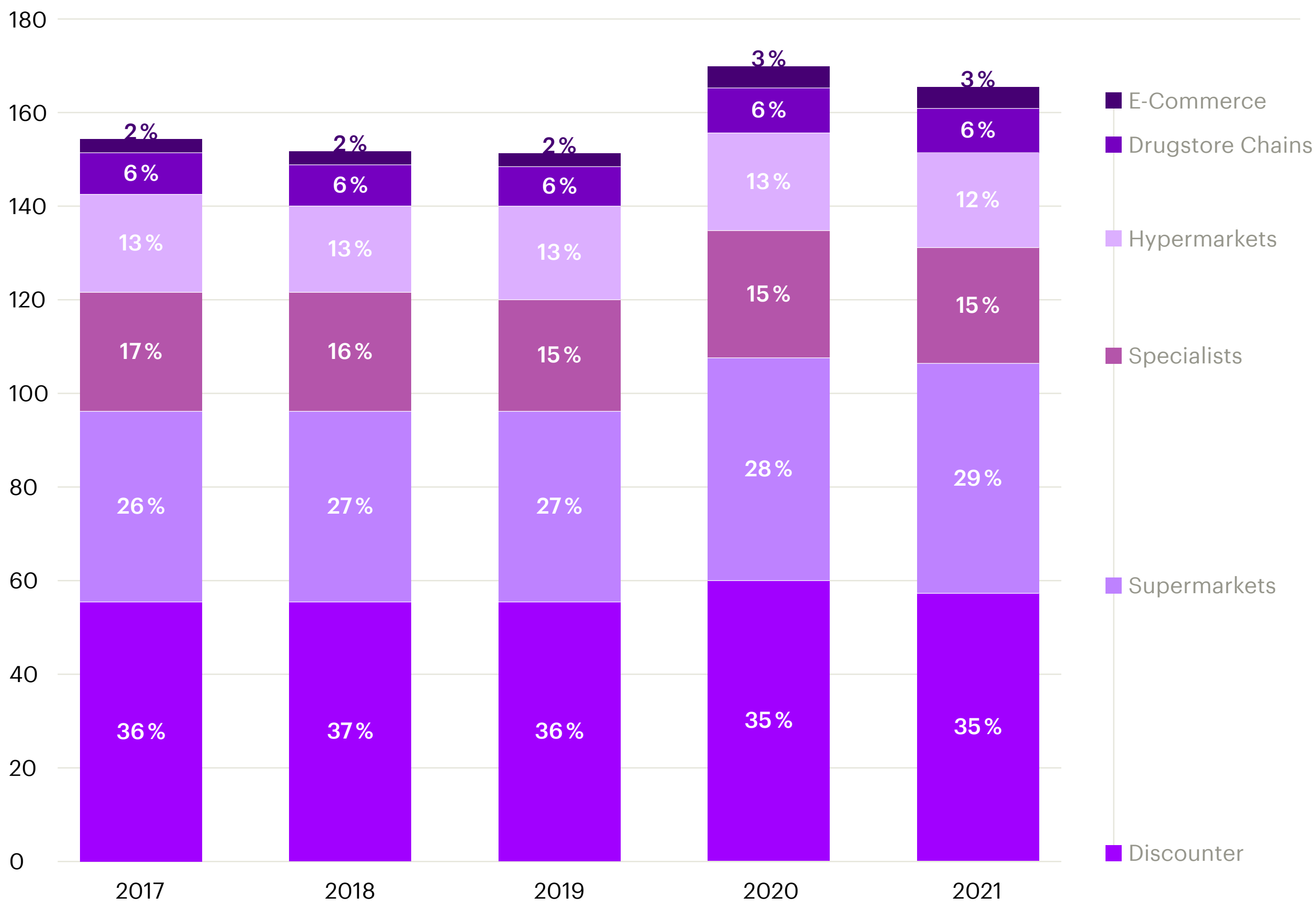


Figure 5: Development of market share by store format (in billion EUR)
(values do not always add to 100% due to rounding)

Differentiated shopping behaviors of family lifestyle groups

To gain deeper insights into recent developments in the German food retail market, it's worth looking at specific consumer segments more closely. By distinguishing between household types ("family lifestyle groups") based on socioeconomic factors (i.e. age, number of children, net household income, job situation, household size) differences in store format preferences and spending development become apparent.

While younger demographics such as "students/apprentices" and "social climbers/singles/DINKs" (Double Income No Kids) have shown a clear preference for supermarkets in recent years, "older families" are more likely to opt for specialty retailers. Supermarkets only constituted 28% of their annual food expenditure and 25% of their shopping trips in 2021, compared to 38% and 33% respectively amongst the "students/apprentices" group.

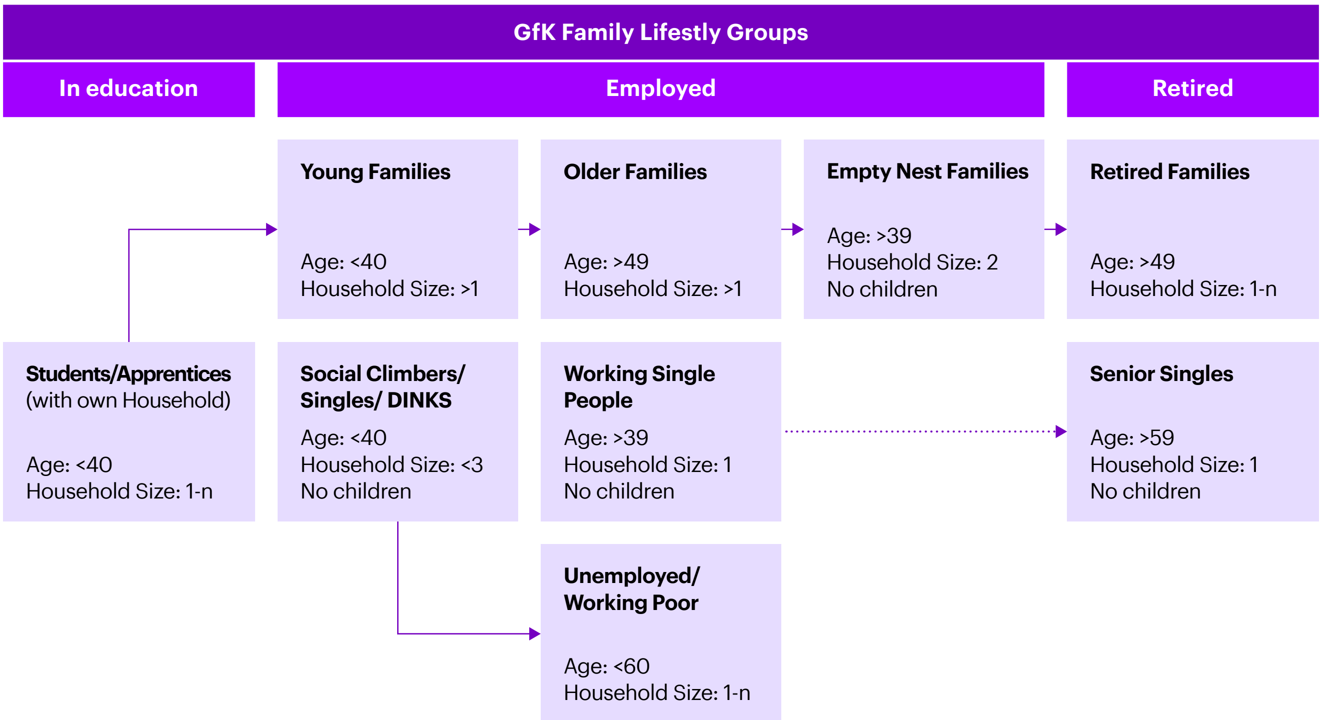


Figure 6: GfK family lifestyle groups

For example, while household food expenditure amongst "young families" decreased by almost 3% between 2017 and 2019 (after adjustment for inflation), while spending amongst "working single people" increased by 1% in the same period. In keeping with broader trends, supermarket retailers primarily captured the additional spending of this consumer group. However, since the onset of the pandemic, there has been a significant increase in household food spend across all socioeconomic groups.

According to the latest GfK Consumer Panel, all socioeconomic groups appear to shop in all store formats to an extent: however, there are clear preferences (based on financial situation and life stage):

Discount retailers account for some of the highest shares of total spending per shopper across all household types, but – with a share of up to 43% – are clearly most popular with the "unemployed/working poor".

A more detailed examination of COVID-19-related developments confirms, once again, differences between the lifestyle groups. For example, from 2019 to 2021, the most significant growth in e-grocery expenditure per buyer was seen amongst "young families" and "retired families" (over 68% and 62% respectively). This was largely due to a "catch-up effect" as these groups discovered and learned to appreciate e-grocery later than others.

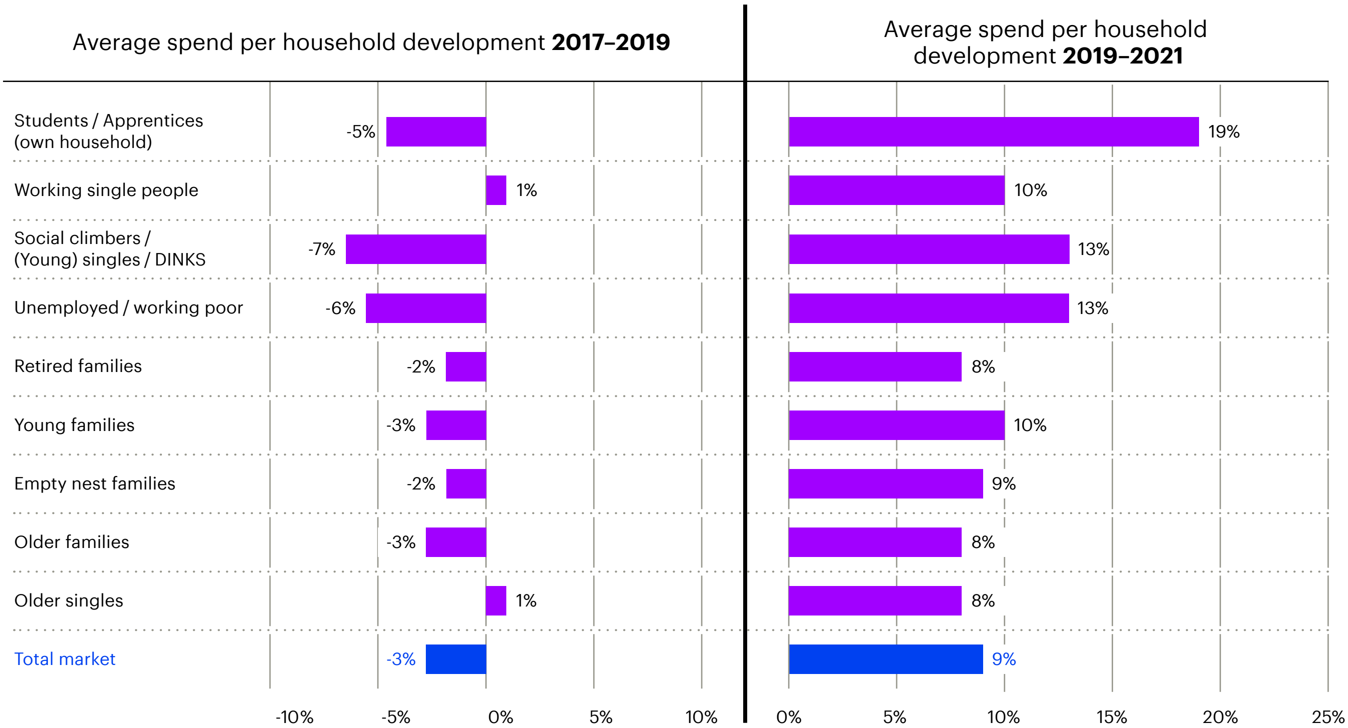


Figure 7: Grocery spend per household and lifestyle group (adjusted for inflation)

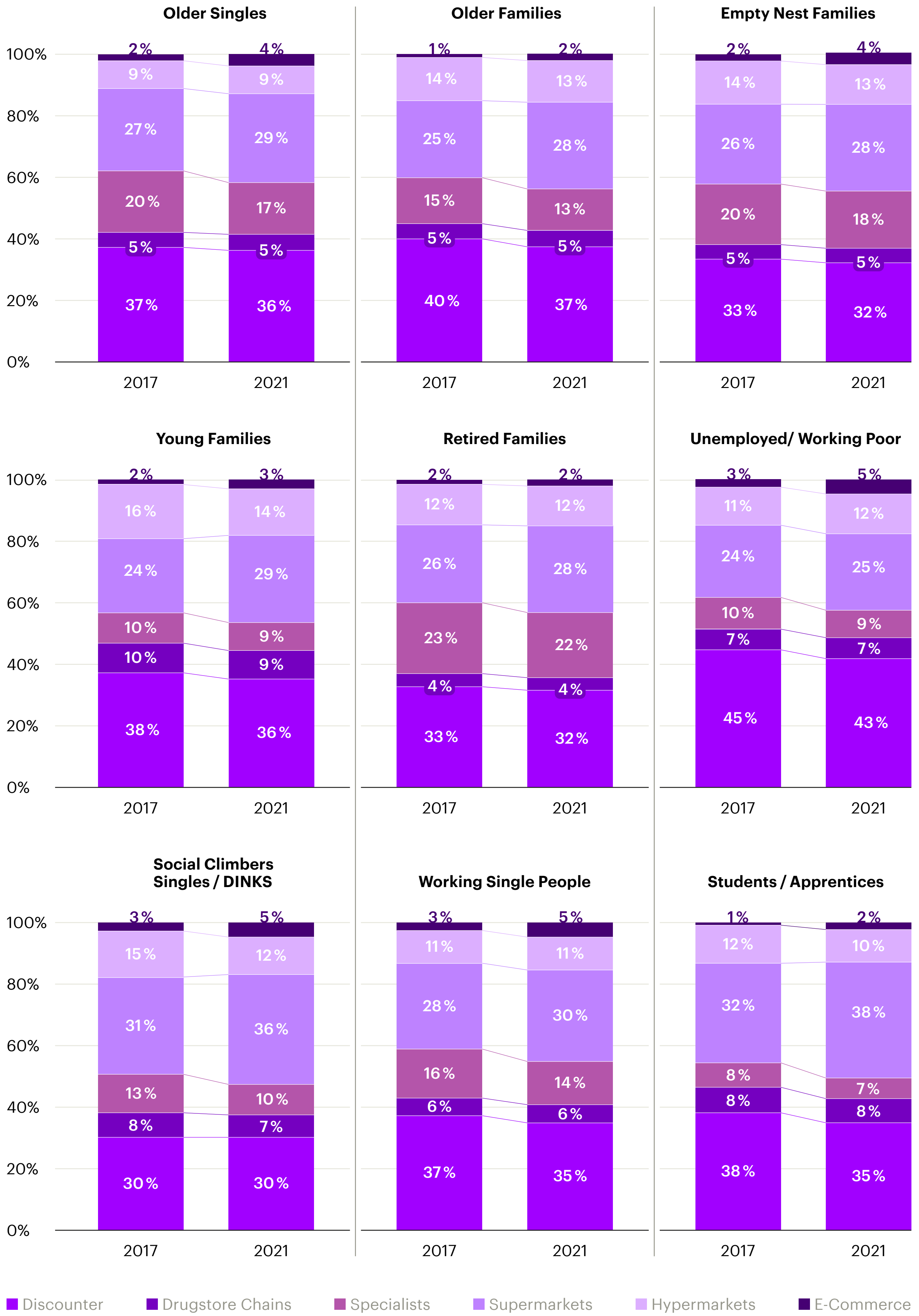


Figure 8: Breakdown of annual spending per lifestyle group across retail formats

Shopping missions affect the choice of formats

Customers pursue different goals or "missions" when shopping at food retailers: a supermarket may be offering their favorite product at a reduced price ("cherry pick"), their coffee supply may be running low just before a busy week or the refrigerator might be completely empty ("routine stock-up/bulk purchased").

Across all lifestyle groups, bulk and routine purchases accounted for the greatest proportion of total spending per average household between 2017 and 2019. The consistent growth in spending on bulk purchases, connected to a decline in shopping trips across store formats, highlights the increasing popularity of one-stop shopping. Consumers want to be able to do their shopping easily and conveniently; ideally in one go.

Nevertheless, clear differences between lifestyle groups can be observed. "Older families" and "young families" spent 46–52% of their annual expenditure on bulk purchases. By contrast, this proportion is much lower (around 23–27%) for single households, such as the "senior singles" group. Broken down by shopping mission, routine purchases account for the largest share of annual spending in the "senior singles" group (24-25%). Overall, historic developments and data trends show significant variation in consumption behavior of different family lifestyle groups – which in all likelihood will become more pronounced with time.

The pandemic not only had an impact on consumers' overall spending and preferred shopping locations, but also influenced spending per shopping mission. Bulk purchasing in particular has gained in importance for all lifestyle groups, with smaller purchases naturally decreasing simultaneously. This trend, particularly when considered alongside the slight decrease in the average number of retailers visited by consumer (particularly between 2020 and 2021), suggests that one-stop shopping continues to be of high importance. It remains to be seen whether this will continue as the pandemic recedes.

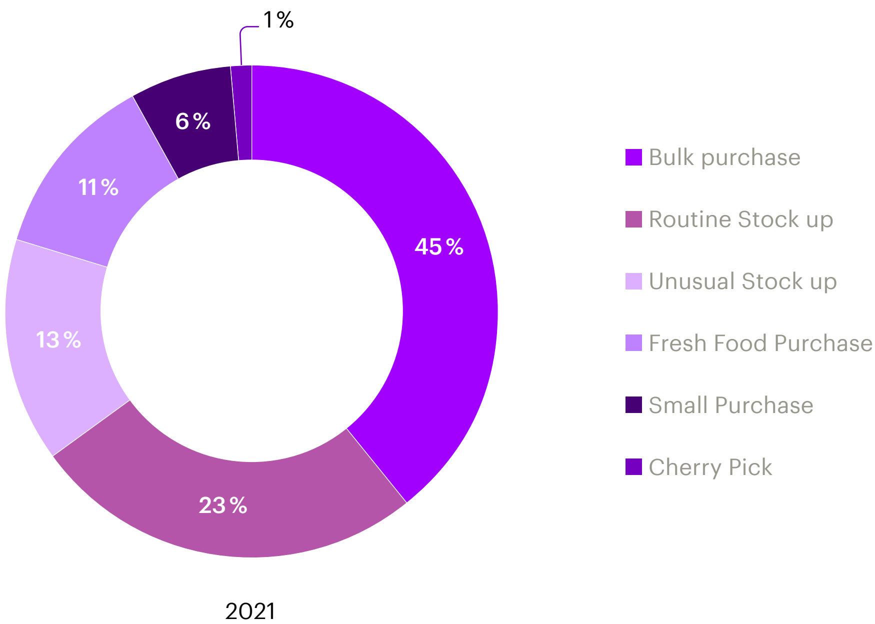


Figure 9: Spending share per shopping mission (excl. sales by specialists and e-commerce. Values do not add to 100% due to rounding)

German e-grocery retailing's rapid ascent

In an increasingly fast-moving world, in which time is an ever rarer commodity, making everyday tasks and activities as efficient, convenient and time-saving as possible is crucial. While it used to be difficult to imagine buying groceries especially fresh produce online, there are now numerous, e-grocery formats serving a variety of customer needs and shopping missions.

Data suggests that providers are targeting specific shopping missions, which are now also being pursued online. Consumers are shopping online at pure supermarkets like Picnic that offer a full range of products for the weekly shop, while quick commerce players like Gorillas serve smaller, more urgent customer demands with instant delivery, as well as category specialists like Flaschenpost.

However, some traditional food retail chains have also tailored their offering to new consumer habits: Already since 2011, Rewe offers customers the option of home delivery: however, success is certainly not a given, as can be seen from other examples such as Kaufland or Metro/GetNow who discontinued their delivery services after only a relatively short period of time. Nevertheless, the development of customer preferences on e-grocery in recent years suggests that now is the time to give e-Commerce a serious attempt.

Within a five-year period (2017–2021) the online grocery sector has recorded significant sales growth of almost 105%, compared to 30% and 10%, respectively for supermarkets and discount stores.

There are clear differences in terms of e-grocery spending and channel adoption between lifestyle groups.The group of "Older Singles" showed the most significant e-grocery expenditure growth as a proportion of total annual spend of 54%, partly because of the low baseline. Unlike younger demographics "Older Singles" have discovered e-grocery more recently and are therefore exhibiting a "catch-up" effect.

Further insights can be gained by looking separately at e-com share of total annual spending by each family lifestyle group. The figures reveal that "social climbers, (young) singles/DINKS" spent the highest percentage of annual expenditure on online groceries amongst all groups. This is in line with the current positioning of food delivery as a premium service.

In contrast older demographics, such as "older families" and "retired families" spent the lowest proportion of annual food spend on e-com (below 1% for "retired" families). E-grocery marks a significant shift in and takes some getting used to, especially for older consumers accustomed to traditional brick-and-mortar commerce.

Whilst a gradual increase in the popularity of e-grocery formats was already evident across all family lifestyle groups between 2017 and 2019, the outbreak of the COVID-19 pandemic was a key accelerator to adoption and appreciation amongst German consumers (75% e-com sales growth).

E-Grocery in Germany				
Clicks & Bricks	Pure Players			
Omnichannel	Pure Supermarkets	Quick Commerce	Delivery Specialists	Category Specialists
REWE NETTO DM ROSSMANN	PICNIC BRINGMEISTER MYTIME KNUSPR	FLINK GORILLAS GETIR	BRINGOO BRINGMANN WOLT	BOFROST HELLO FRESH FLASCHENPOST

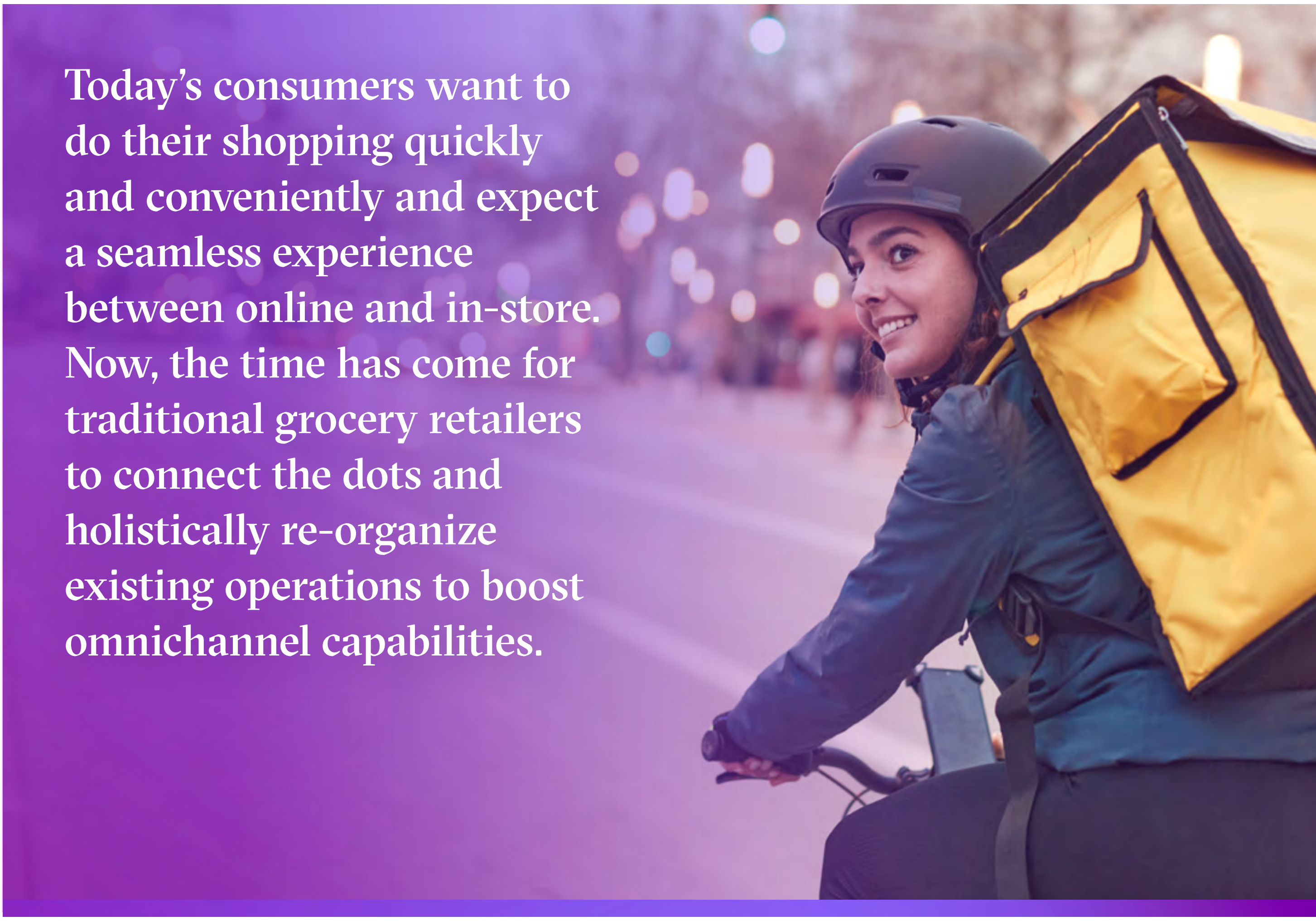
Figure 10: GfK house of e-grocery with exemplary players

Consumers shop with brands directly

Direct-to-consumer (D2C) commerce is another trend that has emerged in recent years and represents a potential disruption to retail business models. In contrast to traditional grocery retailing, where the retailer acts as an intermediary between FMCG brands and consumer, D2C commerce involves the manufacturer selling directly to the consumers, primarily via online channels. Consumers appreciate this new format as it tends to offer a more seamless, convenient, and personalized end-to-end experience. Dr. Oetker, Gilette and Lindt can be considered examples of this approach.

In a 2021 survey, 62% of US consumers reported that they had already purchased directly from a brand, with an impressive 88% satisfaction rating mainly due to convenience and value.[24] Consumers in Germany are also very receptive to D2C brand purchases: 53% of respondents are considering using D2C services in the future.[12]

A well-known brand to jump on this trend was PepsiCo, who launched two US D2C offerings, pantryshop.com and snacks.com, in May 2020, where customers can easily and conveniently order everything from classic single products to bundles containing PepsiCo's bestselling and most popular products. The bundles were carefully curated based on affinity research and designed to cater to consumers' 'new normal' such as working and exercising from home and homeschooling during the COVID-19 pandemic. They are easily accessible through a seamless, mobile-optimized ordering experience: with just a couple of clicks, shoppers can check out with free standard shipping. However, these D2C offerings offer obvious advantages for PepsiCo as well: fulfilling the significant boost in demand caused by the pandemic (at a higher margin), greater control of the consumer relationship and brand messaging, and direct access to meaningful consumer insights e.g. consumption patterns, preferences etc.



Retailer Spotlight:

Picnic, the modern milkman

Customer Proposition

Picnic, founded 2015 in the Netherlands, is, as of early 2022, only active in North-Rhine Westphalia. The company offers a full range of groceries (including fresh and ultra-fresh) for home delivery. For the last mile, Picnic relies on both its own fleet and, to provide customers with free delivery on orders over 35 euros, utilizes a "milk run" fulfilment model where delivery vans run on highly optimized fixed routes. This enables high drop density and each customer to be allocated a 20–30 minutes delivery window (on the day of delivery). Orders can only be placed via a smartphone app (there is no web store or physical locations). If customers order by 10pm, they can receive their purchases the next day (and opt for a guaranteed morning delivery if they order before 1pm).

In Germany, Picnic collaborates with Edeka Rhein-Ruhr (who holds a substantial stake in Picnic) for "just-in-time" product supply. The assortment is broad, but intentionally more limited than a typical German supermarket. In addition to branded products, Picnic carries own-label products of its wholesale partner to cover a variety of price points. For some categories, Picnic created its first own-label products, which it intends to expand in due course.

Innovations

The Picnic customer journey, whilst intended to also provide some inspiration, is highly efficient for consumers. The 10.000 SKU range gives customers sufficient choice but also allows them to create a 30-item basket in about 3 minutes. Recommendations for repetitive items accelerate the process for regular customers, for which additional, curated product suggestions make the assortment more relevant and dynamic. Picnic combines an EDLP (every-day-low-price) strategy with localized pricing.[14]

For maximum efficiency, Picnic has developed proprietary software and hardware for supply chain operations: the delivery vans (designed in-house) are electric, have narrower bodies to allow double-parking and can fit up to 18 order boxes per temperature zone. Orders, picked from highly automated fulfilment centers, are collected in cages which fit exactly into Picnic's proprietary delivery vans. The cages are transported by truck to distribution hubs close to the city, which operate as cross-docking locations for serving nearby customers. Regional expansion is based on customer waiting lists to ensure new routes are profitable from day one.

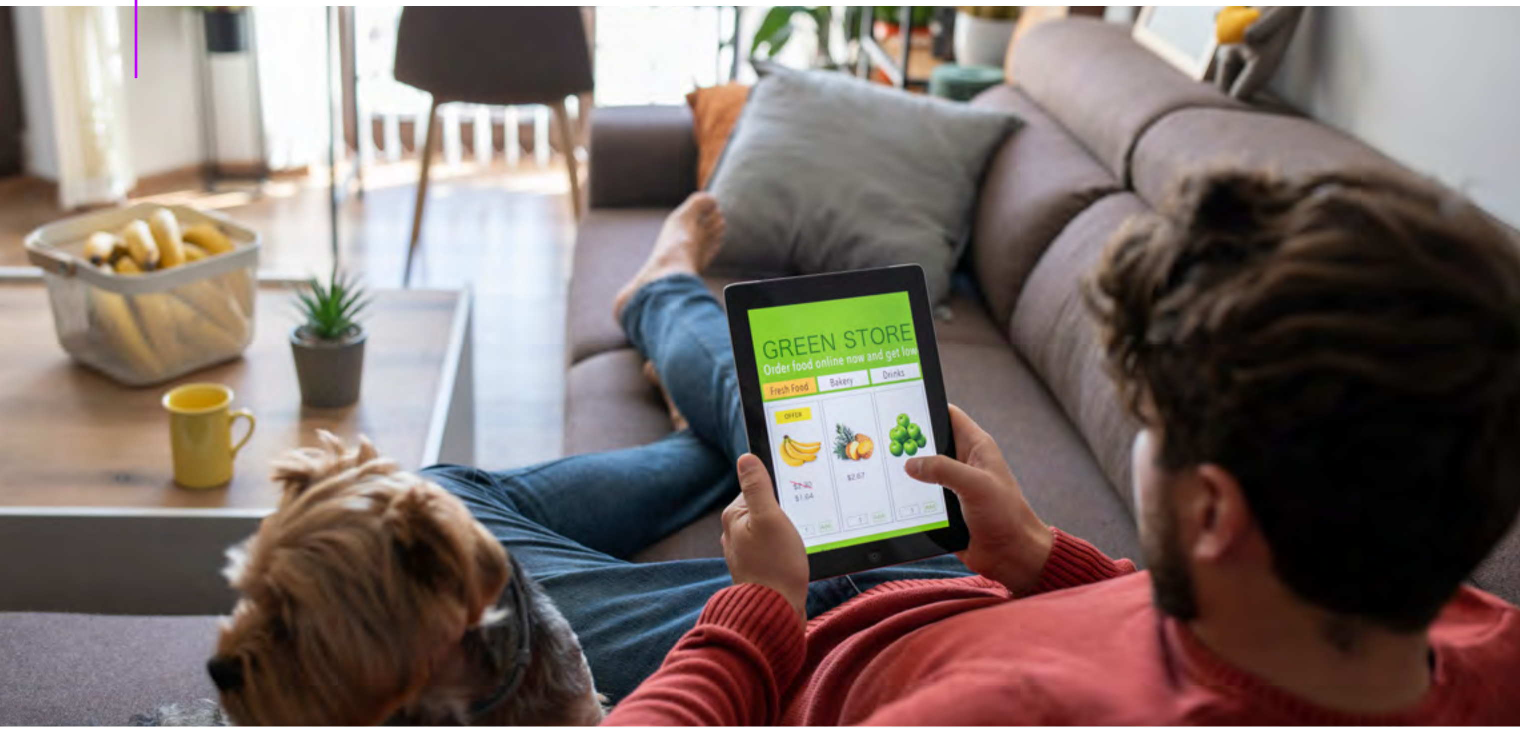
The Transport Management System, developed in-house, optimizes route optimization planning using data analytics, AI and a range of highly relevant parameters (e.g. accessibility, daylight, driver experience). Furthermore, Big data analytics is used to enable "just-in-time" supplier ordering, prevent food waste and forecast customer delivery time.

Outlook

In The Netherlands, Picnic currently has an e-grocery market share of more than 25%, even though two large supermarket chains in the Netherlands have their own large scale e-commerce offerings (with a combined e-food market share of over 60%[15]). In Germany, Picnic's ultimate goal is to offer its services nationwide. In order to do so, the company recently secured capital from The Bill & Melinda Gates Foundation (amongst others), which will be invested in robotized fulfillment centers, electric vehicles and in-house software development enable "just-in-time' supplier ordering, prevent food waste and forecast customer delivery time.[2]

4

Outlook 2030



Three scenarios for future growth of grocery e-Com

There is no doubt that the next decade will be dominated by the shift to e-commerce and omnichannel grocery. The key question will be how fast and how pervasive this shift turns out. The pandemic-induced desire to reduce physical contact by buying as much as possible online supercharged what had been years of relatively gradual adoption amongst traditionally technology-skeptical German consumers.

Based on our modelling of the German food retailing market, three major e-grocery scenarios are most likely for 2030 depending on demographic development, venture capital investment, and future political, economic, and health-related developments.

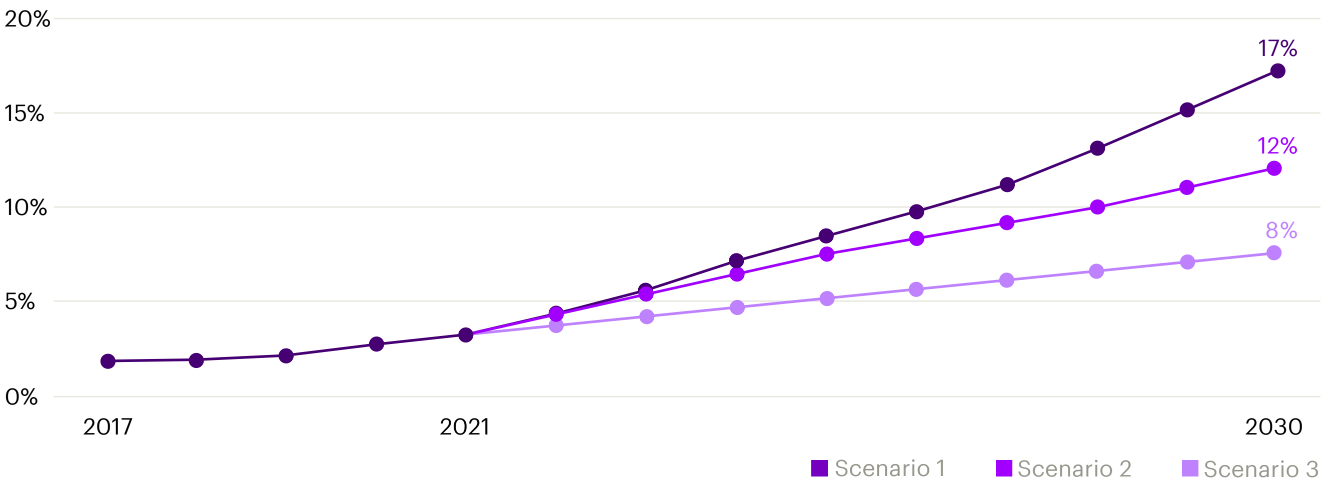


Figure 11: Projected e-grocery shares of the total german grocery market (based on 2017-2021 actuals[10] and forecasted demographic development[16])

Scenario 1: Moderate growth to 8% e-com share

Even the most conservative grocery executives and experts do not expect e-com to return to pre-pandemic market share and growth rate, with the channel's trajectory in other European markets such as France and the UK foreshadowing its potential in Germany.

Assuming a 10-year maturity gap between the UK and German markets, and after factoring in lower urban density in Germany, an online grocery market share of approximately 8% can be expected by 2030. The growth rates required to achieve this is moderate – far lower than that typically exhibited by e-commerce businesses and attainable through existing players with significant e-commerce offerings expanding geographic coverage and tapping into additional consumer groups.

Scenario 2: Growth accelerating to 12% e-com share

The "catch-up" effect exhibited by the German e-grocery market over last 3 years gives reason to suggest that UK - German market maturity gap could be bridged partially. This scenario assumes a consumer-based market maturity gap of 5 years and continued e-commerce growth in the low double digits (to account for the more dispersed populations in rural Germany which pose an obvious limitation). A market share of around 12% would be expected by 2030.

This scenario requires serious e-grocery market entry by established brick-and-mortar retailers, the expansion of business models from neighboring markets such as the Netherlands or the UK and/or a successful new pure play retailer backed by significant venture capital (a strong possibility given continued appetite amongst venture capital firms to invest in grocery delivery startups).

Scenario 3: A new player enters the field and captures an additional 5% market share by 2030

There is another threat to the traditional German food retail sector, accounted for in this third scenario: a new competitor could enter the German market with an omnichannel-focused brick-and-mortar network and a comprehensive e-grocery offering including subscription services. Opening stores of 3.000 m^2 in German cities of 80.000 inhabitants or more could be enough to capture a market share of roughly 5%. Such a venture would need to be rooted in excellent analytical capabilities to identify the most profitable locations. Space productivity comparable to the top 30% of current brick-and-mortar formats would be realistic if the latest technology enabling fully data-driven optimization were utilized. To reach this market share projection, click-and-collect orders would need to generate an equivalent volume of sales as the physical locations of the new entrant by 2030.

Few players have the necessary financial strength and capabilities to undertake such a venture. However, the entry of Amazon Fresh into the US and UK markets shows that Amazon is one such candidate (that was, in fact, seriously contemplating entry into the German market even prior to the pandemic[17]). JD.com would be another, with the Chinese retail giant's recent entry into the Dutch market with Ochama underlining its food omnichannel ambitions in Europe.

Demographics driving grocery e-com growth

Although e-grocery spending has been growing by double-digits across all demographics over the past 5 years, avid online grocery consumers can be defined by some distinct characteristics, suggesting that the growth of this market will be influenced by four key factors:

Spending power: consumers who wish to purchase groceries online currently tend to pay a delivery fee if their basket size is below a certain threshold and a markup for the convenience that varies from player to player. Even if some players were to bring pricing closer to supermarket levels, at least in the medium term, e-grocery is expected to remain a premium service. However, q-com players have reduced barriers for consumers to try e-grocery due to the lower minimum-order values and delivery fees compared to other providers.

Need for convenience: working singles and parents, who often find themselves strapped for time during stressful phases or life, are particularly attracted to time-saving approaches to the weekly shop. The same applies to lifestyle group segments with limited mobility.

Urban density: despite the positive outlook for e-grocery by 2030, the next few years will probably not see e-grocery delivery areas extend to more rural locations. As with the expansion of broadband or public transport provisions, the lack of economies of scale currently limits profitable operations to more densely populated urban areas. The expected decline in car ownership on the other hand will make grocery delivery more attractive for consumers.

Age: the oldest demographic groups will become proportionally larger. However, the familiarity with e-commerce and purchasing behavior of 60-year-olds in 203 0 will not be the same as that of 60-year-olds today. The "catch-up" due to cohort effects, particularly in older generations, has been considerable in recent years and will continue to be so.

Translated into family lifestyle groups, it is expected that the growth of e-grocery will be greatest amongst "social climbers/singles/DINKs" and "single working professionals" lifestyle groups, followed by "younger families". "Older Singles", "empty nest families" and "unemployed/working poor" households will likely also have above average growth rates.

Implications for brick-and-mortar incumbents

The growth of e-commerce will outweigh overall market growth significantly. Consequently, the brick-and-mortar grocery market share in Germany will shrink. We expect the physical store landscape to be divided into key formats broadly like today, although some of the developments seen over recent years will continue to evolve.

Hypermarkets

The hypermarket format has experienced considerable turmoil in recent years. The demise of real,- has sent shockwaves through the market, and whilst it is expected that real,- stores taken over by competitors will be able to improve square meter productivity, the broader loss of market share is unlikely to reverse.

However, demographic trends such as smaller households and reduced mobility (due to an ageing population and lower projected car ownership rates) will slowly but steadily reduce the attractiveness of large greenfield hypermarket locations. Considering both in tandem, a slight decline in brick-and-mortar market share for hypermarkets can be expected in the period to 2030.

Discounters

In the years before the pandemic, discounters modernized their store concepts and were able to stabilize market share. The pandemic put a considerable dampener on this, with market share falling by 2 pp. (2021 vs. 2019). During the pandemic, shoppers wanted to visit as few stores as possible and thus tried, where possible, to make one-stop shopping trips, which supermarkets benefited from. Coupled with the longer-term trend of decreasing shopping trip frequency, the trend of one-stop shopping will likely remain after the pandemic. Moreover, we see a decline in discount spending in demographics with traditionally the highest discounter spending shares (i.e. "low-income families" and "older families"). This points towards a strategic problem for discount retailers that could prevent market share recovery without a significant change in strategy or consumer preferences (e.g. driven by strong and continued inflation or hard recession).

Supermarkets

Full-range supermarkets have enjoyed the greatest brick-and-mortar success before and during the pandemic times across all demographics due to trends towards sustainability, quality/ premiumization and one-stop shopping. This provides a solid basis for further growth, and we expect the supermarket segment to be the strongest performing segment within brick-and-mortar in the near future, although the growth rates during the COVID-19 pandemic are unlikely to be replicated again.

Others

Non-branched specialist retailers and drugstores are expected to continue their development path of recent years.

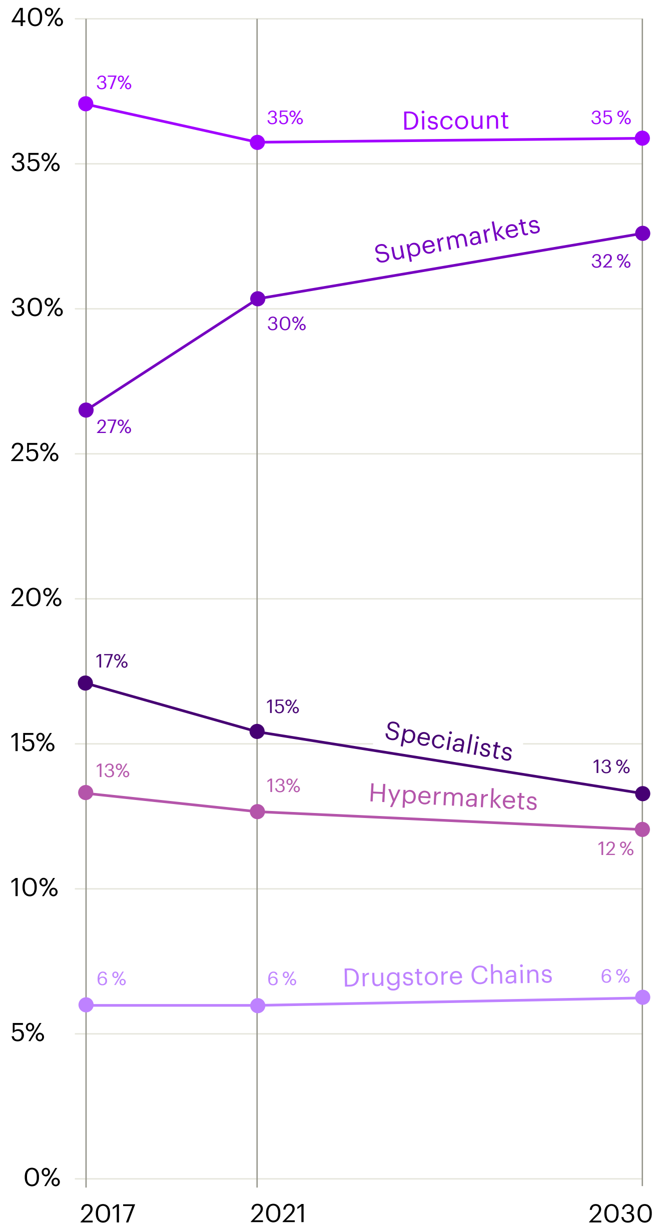
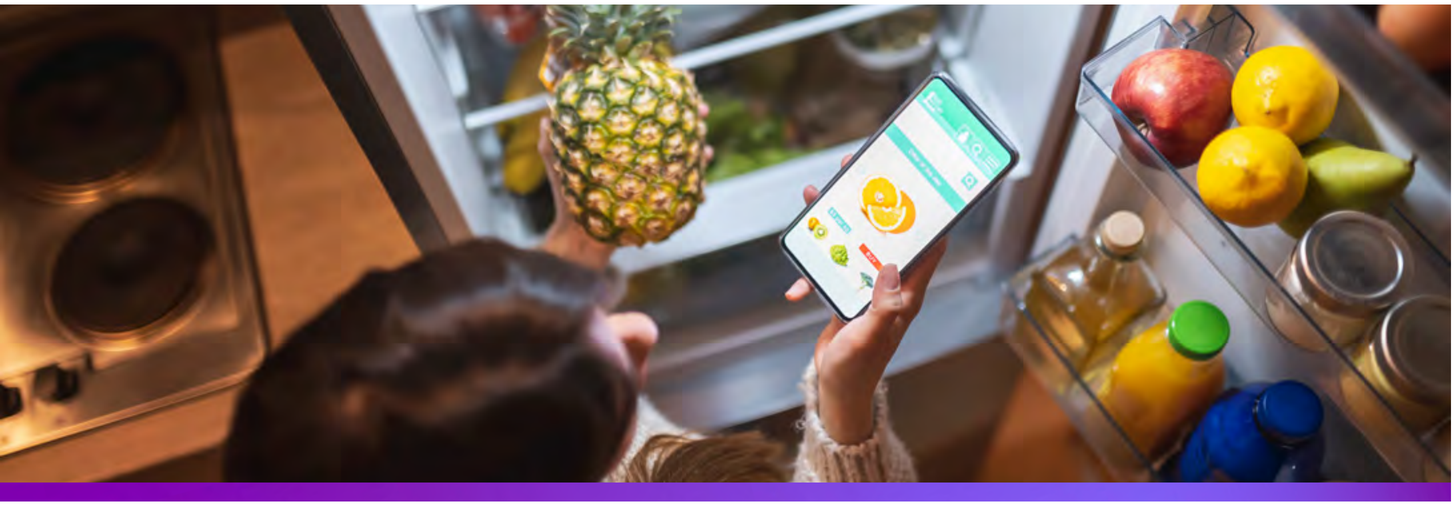


Figure 12: Projected share of formats within brick-and-mortar grocery (based on 2017–2021 actuals[10])



German grocery market projections including e-com

When considering the developments outlined above within the broader grocery landscape including e-commerce, it is evident that given the relatively sluggish growth prospects, there is a clear urgency for many traditional retailers to adapt and expand their e-commerce and omnichannel offerings to help counterbalance the decline in brick-and-mortar market share.

It is important to note, that brick-and-mortar players do have the chance to participate in the e-grocery part of the industry and achieve higher market shares overall compared to only looking at their brick-and-mortar projections.

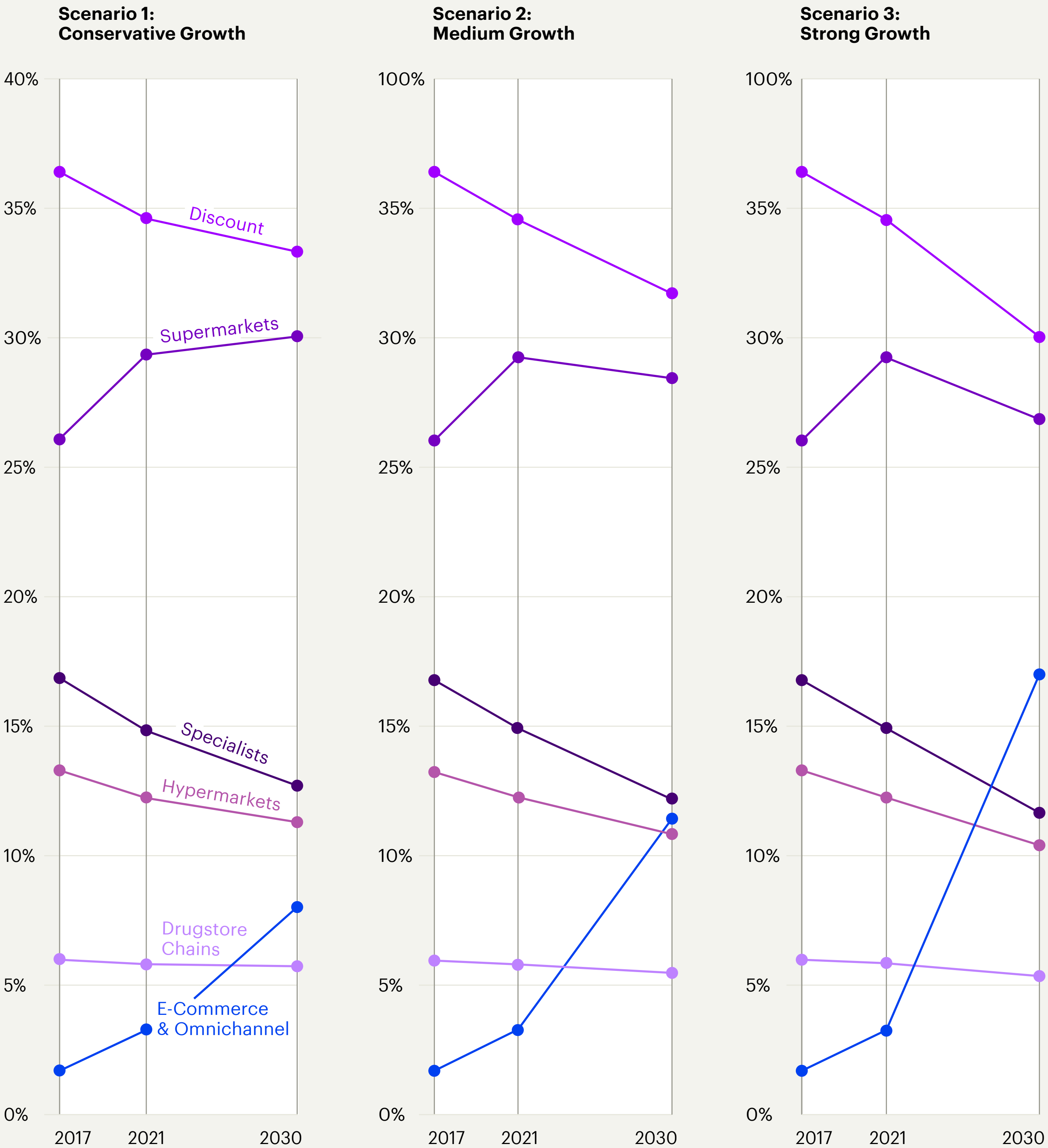


Figure 13: Brick-and-mortar format shares of the total grocery market plus e-commerce & omnichannel (based on 2017-2021 actuals[10])

Even conservative e-grocery growth limits the leeway for pure brick-and-mortar offerings substantially. Grocery retailers still have the chance to counterbalance if they adapt and expand their e-commerce and omnichannel offerings.

Retailer Spotlight:

Amazon Fresh, the future store at scale

Customer Proposition

The e-commerce giant Amazon launched its first physical Amazon Fresh store in the US in August 2020 and has steadily expanded the network since, laying the groundwork for a nationwide brick-and-mortar grocery chain.

Amazon Fresh stores are smaller than the average US supermarket and include an in-store Amazon pick-up and returns hub. Product range falls somewhere between small specialists and larger supermarkets, and includes regional brands as well as Amazon's own labels. Stores are generally located in affluent areas where consumers have greater than average purchasing power, with Amazon's wealth of customer insights, obtained primarily through its Prime membership program, driving location optimization.

Innovations

Amazon Fresh stores are digitally integrated to provide a seamless shopping experience: most are cashless, with customers entering using a QR code from their Amazon account to which their purchase is charged at the end of their visit. Stores utilize a system of cameras, sensors and/or RFID readers to identify shoppers and detect when products are taken from or returned to shelves. It keeps track of them in a virtual "cart" and upon leaving the store, the customer will be emailed a receipt via e-mail.

Amazon has also developed the Dash Cart with user-identification via the Amazon account that uses a combination of computer vision algorithms and sensor fusion to identify items customers place in their cart. When exiting through the store's Amazon Dash Cart lane, sensors automatically identify the cart, and payment is processed using the Amazon account. The cart has some unique features, including a screen at the top where customers can access their digital shopping list created at home with their Alexa digital assistant. In addition, every cart provides in-store navigation assistance and is equipped with a coupon scanner.

The in-house designed and custom-built just-walk-out technology and dash cart includes use of computer vision, sensor fusion, and advanced machine learning. The vast amounts of data collected through these systems is utilized to optimize the assortment and shelf space allocation. There are already initial indications that Amazon could display customer ratings on price tags. This would allow the retailer to transfer one of its major competitive advantages from the early years to the grocery sector. The close linkage of Amazon Fresh stores with the Prime program further increases customer loyalty.

Outlook

After the US, Amazon has selected the UK for further expansion of the Amazon fresh concept. As per early 2022 the London metropolitan area is home to 17 Amazon fresh cashless stores. The tech giant is reportedly planning to establish a total of 260 such supermarkets across the UK until 2025.[18]

Already 2 years ago concrete plans of Amazon to enter the German retail sector have been made public.[17] The more than 18 million households in Germany with an Amazon Prime membership are an ideal launch pad.[19] Despite the stereotype that German households are rather averse to technology, there is a smart speaker in every third home – and Amazon's Alexa has the biggest market share.

Amazon Fresh stores could be a bridging technology for the retail giant: They're meant to draw in more general-interest consumers and might one day become largely delivery outposts.

5

Conclusions for German Grocery Retailers

Differentiation of brick-and-mortar offerings

Physical grocery stores are traditionally meant to serve all consumers, balancing competitive prices with broad assortment and cutting-edge experience. However, this one-size-fits-all proposition no longer appears a viable long-term strategy in light of the individualization of modern consumer needs. The above-mentioned proliferation of new lifestyle choices and health-related diets, ethnic food preferences and social brands has led to the expansion of product lines and ranges, while classic products such as cow milk and meat have not been displaced. These assortments are breaking the physical boundaries of supermarket shelves.

However, the reality is that physical locations will always struggle to compete with online supermarkets in this respect (which enjoy the luxury of virtually unlimited shelf space). Department stores have suffered a similar fate over the last decades as their unique selling proposition (USP) of conveniently offering a variety of brands and products under one roof has been undermined by the internet (with its near unbeatable choice, prices and shopping hours).

The shift towards a greater differentiation of consumer needs, is a symptom of the ongoing transformation from an industrial society to a cultural society. We are observing a shift from a mode of execution to a mode of creation. With this transformation, a new differentiation of "cultural consumer" types can be observed (Fig. 14).

This also changes the possibilities of differentiation for retailers. In an industrial society a differentiation point had always something to do with functional propositions (price, quality, or convenience). In a cultural society a special value proposition (sustainability or purpose) can also be a differentiation point.

	Hedonism –	Hedonism +
Sustainability +	21% ‚Plain Green' Ascetic ecologists · sustainable value	34% ‚Glamour Green' Ethical Aesthetes · direct enjoyment · sustainable value
Sustainability –	21% ‚Inconspicuous' Unobtrusive · functional benefit	24% ‚Hedonist' Hedonistic aesthetes · direct enjoyment

Figure 14: Distribution and characteristics of "cultural consumer" types 2021[10]

The shares of these types show that "glamour greens" are now the biggest "cultural consumer" group in Germany. This new creative middle-class consumer is characterized by a hedonistic, but at the same time sustainable lifestyle without viewing these two characteristics as a conflict. Sustainability is no longer seen as a "waiving logic", but as an "enrichment logic". "Glamour greens" have the highest quality orientation and buy innovations not because they promise status gain, but because they want to make discoveries. However, they typically have average financial resources, which explains why their price sensitivity is relatively high. They are driving the sustainability and purpose trends. But the most important thing: They convey an idea of "terrestrial" consumer behavior aimed at preserving the planet in a positive way.

In light of this, many brick-and-mortar grocery retailers need to rethink their purpose and sharpen their positioning. The key dimensions for differentiation are price, convenience, experience as well as sustainability and purpose. This could require a multi-banner strategy for some retailers to capture multiple demand groups without diluting the main brand.

Price leadership

Price continues to be one of the most important functional differentiation points, which many German retailers are trying to achieve. The undisputed top dogs in German grocery discount, Aldi and Lidl, have long moved away from their original no-frills concept of the 2000s. Stores were modernized, product ranges increased and extended to include branded products. This shift towards a more classic supermarket model came at a risk (of diluting their original positioning and USP) and was not sufficient to win against actual full-range supermarkets in times of the COVID-19 pandemic and one-stop shopping.

On the other hand, it opened the door for new hard discounters to undercut the big discounters (by 10 to 20% in price) with a clear no-frills approach, as was originally invented by Aldi. Also, the example of Norma, whose less noticeable shift towards supermarket positioning has seen it enjoy the strongest growth of any German discounter over the last five years, shows that discounters have stayed attractive for the "must-be-cheap" shopper, but many "can-be-cheap" shoppers have turned from Aldi and Lidl to full range retailers.

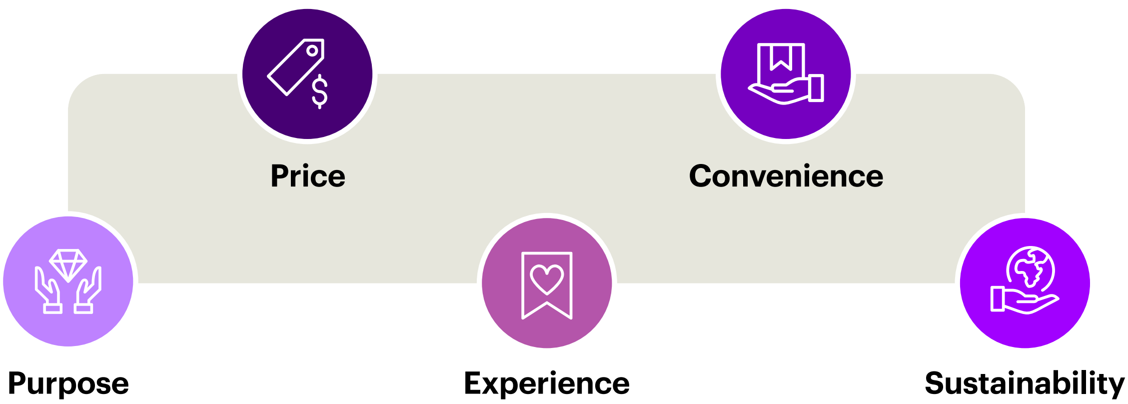


Figure 15: Typical dimensions for retailer differentiation

"Price" as functional differentiation point is most appealing to the "inconspicuous" cultural consumer type (for others mostly during times of economic crisis). However, the high share of "glamour greens" and the change towards a cultural society make it more difficult to be successful with this differentiation dimension alone going forward.

Experience & Quality leadership

Quality leadership of a grocery retailer typically refers to the quality of the assortment and private labels a retailer is offering. This quality leadership usually goes hand in hand with experience leadership. Typically, a premium assortment is combined with premium services, like high-class gastronomy, champagne and liquor bars. These retailers dedicate their valuable store space to product discovery and showcasing products for which touch, smell, and physical presence are all essential. They also use their store space to highlight premium brands, e.g. via brand-specific areas.

The adaptiveness of space will be key and enable a variety of in-store events like cooking classes, wine tastings and product showcases (from fresh produce and premium goods displays to health hubs and bespoke experiences) informed by insights on what customers are responding to or want to see in-store.

Offline efficiency & Convenience leadership

Competing against (ultrafast) home delivery and subscription services with a convenience-orientated proposition in brick-and-mortar is challenging for full size stores but still an important differentiation point for smaller footprints.

Formats, like smaller city-center stores or (fully-automated) tiny stores designed for quick small purchases, are getting more and more popular in Germany. In urban areas these small city-center stores are located at high-traffic locations with impulse-driven walk-in demand. With their small space, reduced convenience-focused assortment and frictionless checkouts, they target young urban "hedonists" who want to buy their lunch or other small shopping during work breaks or on their way home in a fast and convenient way. In some rural areas (full-automized) tiny stores fulfill a different convenience proposition: For shoppers in these rural areas, these small stores are often the only stores within easy walking or short driving distance.

Sustainability leadership

In the light of the transformation into a "cultural society" sustainable leadership has become an important differentiation point. Leading grocery retailers are increasing sustainability efforts and reducing their carbon footprint by installing solar panels on shop roofs, efficient refrigerators and freezers, offering a broader range of organic produce, installing in-store farms to grow vegetables and herbs using less water, fertilizer and pesticides than traditional agriculture. Nevertheless, retailers have difficulties to clearly differentiate themselves from the competition, with the possible exception of specialist organic supermarkets such as Alnatura or Bio Company. The challenge for these organic supermarkets, however, is that their sustainability differentiation is primarily based on assortment and less on sustainable store operations. Larger competitors can relatively easily replicate this by extending and premiumizing their organic assortment. In summary, no major German grocery retailer has truly "mastered" creating a holistic sustainable retail narrative at this point.

(Social) purpose leadership

The same is true for the differentiation point of "purpose". There are a few instances of traditional grocery retailers with a clear social purpose, such as CAP, who (with their mission statement "CAP – the center of life") strives to improve and expand employment opportunities for people with disabilities. In fact, the main idea of CAP stores is that up to 50% of all jobs are filled by people with disabilities, who occupy positions carefully tailored to their abilities.

An omnichannel grocery retailer with a clear purpose is myEnso: their mission statement is to make the world a little better with a supermarket "developed by people for people". myEnso is a cooperative and its shoppers not only own the business but co-determine the product range and services offered. Nothing on the website goes live without a test or a survey among customers, with the ultimate goal being to create a purchase and sales platform that meets all customer needs and expectations. If sufficient residents in a village or small town buy myEnso shares a small tanteEnso shop will be opened with an assortment tailored to local needs to improve grocery options in rural areas lacking coverage by traditional retailers.

Unleashing omnichannel potential

With the exception of Rewe and EDEKA (through its strategic partner Picnic), no major brick-and-mortar grocery retailer in Germany has a well-established or fully scaled e-commerce or omnichannel offering (first pilot projects by Kaufland, LIDL and real,- have been discontinued), which leaves the industry vulnerable to disruption from new entrants and pure plays.

Since large parts of the German retail landscape are decentralized and regionally fragmented, it is difficult to establish an agile, nationwide and centrally controlled e-commerce proposition.

However, foregoing the early-mover advantage would be an expensive mistake for incumbents. The window of opportunity to secure a substantial portion of market share could close sooner rather than later given that players such as Rewe (15+% e-grocery share) and Picnic (10+% share in NRW)[10] have already established themselves – and therefore have an ideal launchpad for further expansion. Subscription-based services like Amazon and Hello Fresh also significantly reduce how much of the future e-commerce market is still to be captured. As a result, traditional retailers need to up their game fast. We see five focus areas for established players tapping into online and omnichannel grocery:

Focus areas for entering the online and omnichannel grocery market

1 Leverage existing store footprints to win against market entrants

Consumers will think about online and offline as one going forward and expect a seamless experience between online and in-store, yet few retailers are truly connecting the dots to holistically optimize their operations. Rather than replicating pure play models, the existing physical footprint can be leveraged for competitive advantage versus start-ups and foreign competitors who will struggle to profitably serve customers outside of metropolitan areas (at least with fresh assortment during their early years).

Imagine consumers being able to quickly pre-order their usual essentials via their smartphone for pick-up, leaving most of the store space & visit time free for exploring products for which the sensory experience and/or hands-on discovery is essential. This combination of BOPIS (“buy online pick-up in store”) for repeat, subscription-like purchases and experience-focused physical stores for carefully selected produce (like fruits and vegetables) could offer a "best of both worlds" scenario that allows traditional grocery retailers to leverage and maximize existing physical assets whilst scaling online operations and increasing e-commerce market share.

2 Improve assortment and guide shoppers in a personalized way

Omnichannel offers an opportunity for retailers to offer customers more niche products and satisfy trend-led product demand. Dynamically listing (and de-listing) new products and brands, especially from smaller suppliers and micro-brands, is much simpler to do online than in a physical store and provides the opportunity to improve assortment by offering online exclusives, for example. However, whilst the digital shelf is endless in theory, fulfillment capabilities of local hubs or pick-from-store models obviously limit the product breadth that retailers can offer. With expanded assortments, however, customers need to be supported by technology during the buying journey, with filters and personalized recommendations to increase selection efficiency.

3 Automate fulfillment and control supply chain cost

Balancing the higher costs of single order picking with customer reluctance to pay delivery charges remains a challenge. Thus, pick-from-store models (with high labor costs) can only be a short-term solution while e-commerce operations are in their infancy. The long-term vision should be a combination of automated fulfilment in (regional) DCs for more rural areas (where competition on lead times is lower) and the use of micro-fulfilment centres attached to stores in (more competitive and better served) urban areas. With this hybrid network structure, retailers can effectively address market complexity and succeed across multiples channels with a mix of central hubs and local nodes.

4 Find the right fulfillment model for your target customer

An online business model may not work for everyone: retailers need to be clear about what type of customer they want to target and, based on this, crystallize their unique proposition and operating model.

For discounters, establishing a home delivery model is a challenge. Although consumers have expressed desire in surveys to order discount goods online, as soon as the prospect of delivery fees is highlighted, enthusiasm wanes. The razor-thin margins in grocery discount make a free or low fee delivery unlikely. On the other hand, consumer willingness to pay 5 euros or more on an average order that is well under 50 Euros will be limited, especially if the retailer cannot serve as a one-stop (weekly) shop. Instead, discounters could leverage lean supply chain operations. Often, there is some free space in trucks going from retailers' DCs to stores. If (highly automated) e-commerce order fulfilment is co-located within existing DCs, transport synergies could enable in-store pickup to be offered to customers for low or even no additional fees. For the customer segment who are potentially willing to pay fees for home delivery of discount items, third parties could be used to pick up the order from the store and cover the last mile.

5 Create an ecosystem with additional revenue streams

The future market share outlook for brick-and-mortar retailers is less than ideal, but the situation in terms of profit distribution is even more dire. A brick-and-mortar business model generates profit primarily through the margin on sale of items and supplier subsidies, while e-commerce and omnichannel models can tap into several additional profit streams:

It is even conceivable that future grocery retail business models could sell a range of essential items at low margin to lure customers into their ecosystem and earn money by upselling more premium items and additional services such as pharmacy or meal delivery that utilize network effects. It is therefore important for retailers to identify new revenue streams like data monetization, retail media and offering fulfillment services to third parties when establishing their omnichannel offering.

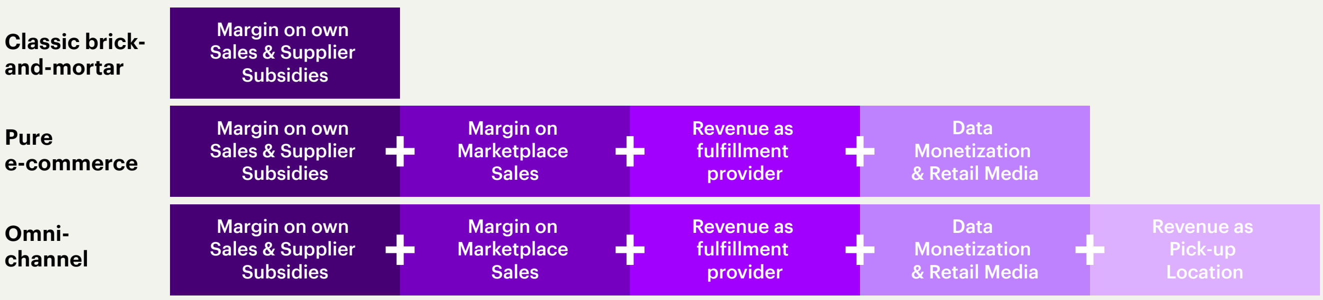
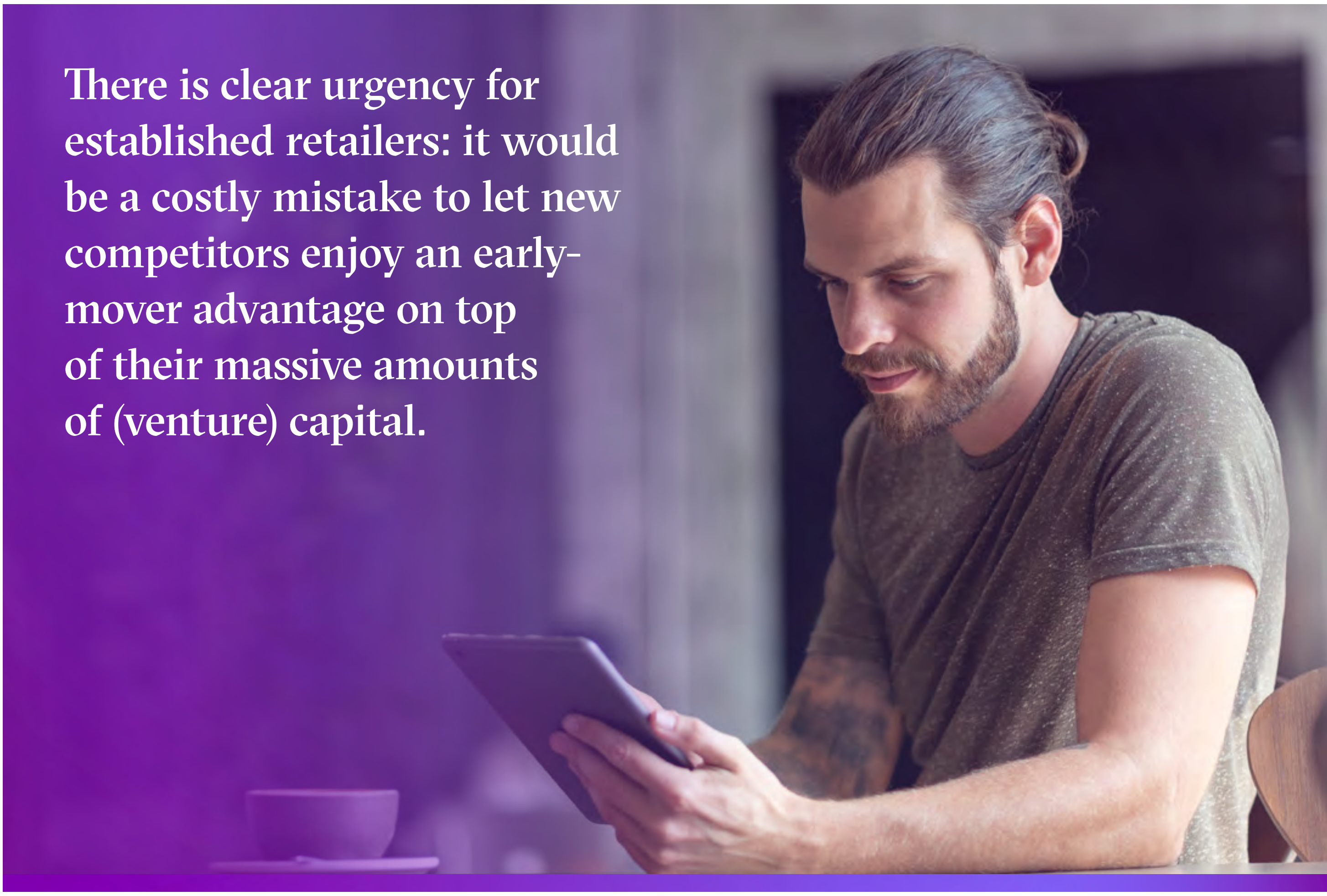


Figure 16: Revenue sources by business model



Could aggregators be the white knights?

Working with aggregators like Instacart, Everli or Bringoo appears an obvious solution to work around gaps in own capabilities, with limited investment. Examples include Instacart's collaboration with ALDI in the US, GoPuff's deal with Morrisons in the UK or Flink's partnership with Rewe in Germany. Aggregators capture customer access and maximize relationship value by capitalizing on data and feedback loops. During COVID-19, Instacart managed to surpass Walmart for e-grocery market share within three months with an asset-light model and the ability to scale flexibly and quickly. While the pandemic boosted Instacart's business, the sharp decline in sales lately fueled doubts about the sustainability of their success after lockdowns have ended.

However, even without a partnership, aggregators can access brick-and-mortar retailers' store inventories. This strategy is known as "ninja shopping" in which delivery apps list products from non-partner retailers to generate customer demand for their services in key areas. Delivery apps around the world have employed the "ninja shopping" strategy and, in some instances, used data they gather during this phase to convince retailers to forge a formal partnership. This strategy poses a risk to both delivery apps and grocery retailers. To consider the case of delivery apps first, product information that isn't synced up with retailers' systems can lead to a poor shopping experience (that reflects poorly on the delivery app). Secondly, they would have to prioritize growth over margin or charge substantially higher prices to cover both retailers' margin and their own cut. Lastly, evidence of substantial customer demand for grocery delivery and that customers are even prepared to pay a premium for it is a clear alarm signal for any traditional grocery retailer to set up their own delivery service that cuts out the aggregator entirely.

A formal partnership also comes with risk for the brick-and-mortar retailer: the aggregator is typically responsible for the customer experience and relationship, which not only leaves grocery retailers with limited control but also limited data collection opportunities. As soon as the aggregator has gained sufficient consumer trust, they could switch to a pure quick commerce model and remove the retailer as a middleman by using their own micro-fulfillment warehouses and private label products.

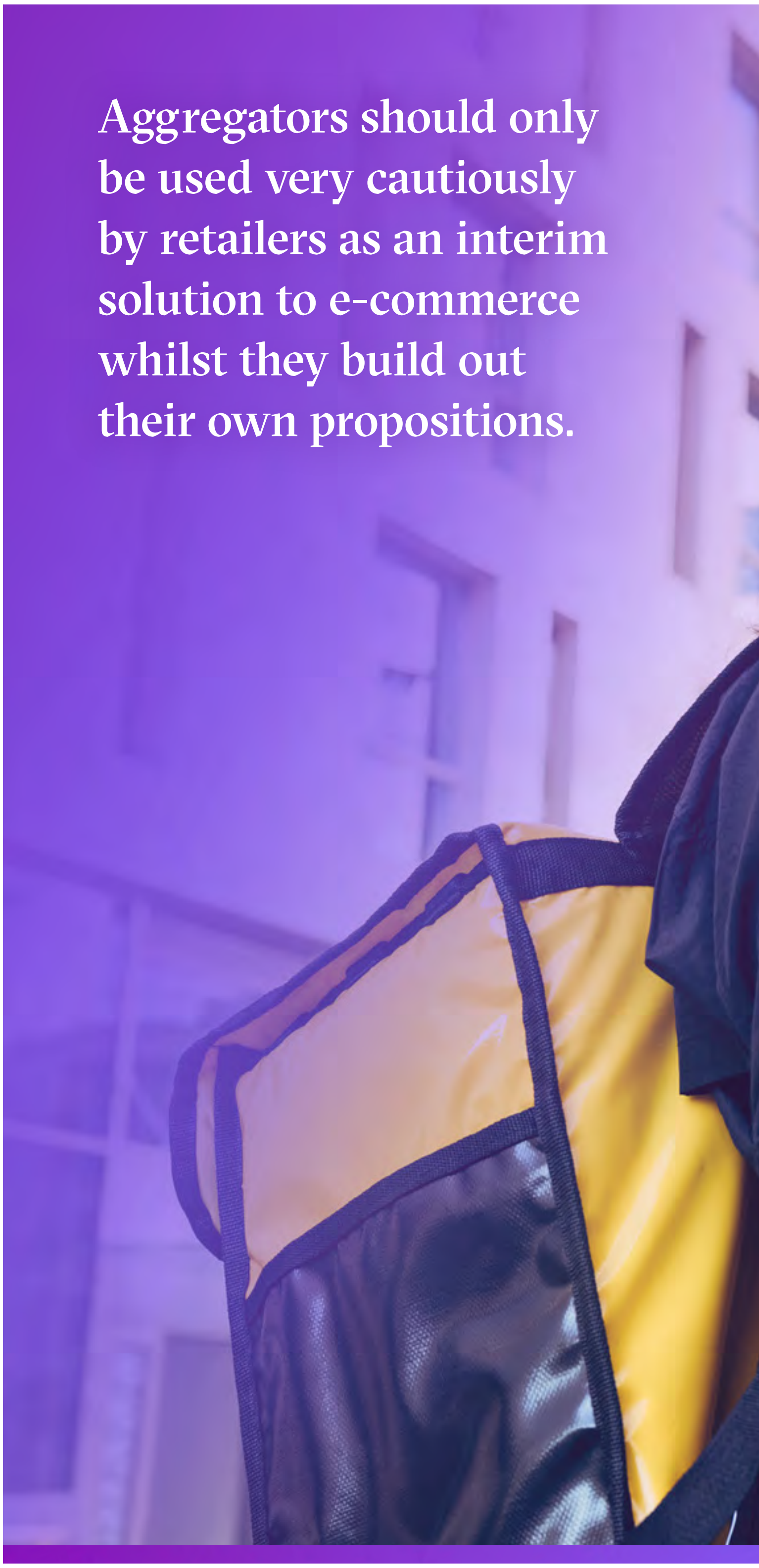
The long-term risk to the customer relationship and market access weighs so heavily that any short-term sales increase rarely seems worth the price. Instead, brick-and-mortar retailers could control and define the customer experience far more effectively through their own e-commerce app or website. Delivery could then be outsourced to a service provider employing gig workers (if this fits the retailer's proposition). Therefore, aggregators like Instacart should be used very cautiously by retailers as an interim solution to e-commerce whilst they assess the stickiness of the q-commerce trend and build out their own propositions. Another alternative could be to set up a joint venture or acquire a substantial stake in a quick-commerce, e-commerce or platform provider (as seen with Rewe and Flink in Germany or Jumbo and Picnic in The Netherlands).

Thinking beyond 2030

Could platforms and aggregators replace grocery retailers in the long term? Would a future without physical retail be conceivable? Probably not. The pandemic has shown once again that what customers really want is trust, security and transparency when they shop. However, the role of physical stores could plausibly be reduced to the supply of fresh produce. For the purchase of branded goods, where the manufacturer is the trusted partner rather than the retailer, both a retailer and their local presence may become obsolete. Instead, online marketplace intermediary and logistics hub would be sufficient to bundle and collectively fulfill D2C purchases.

Even for fresh produce, advancing technologization could move the role of the retailer closer to obsolete: in China, Alibaba and JD.com are not only investing in and opening their own poultry, fruit and vegetable farms but also creating delivery services and retail formats to sell these directly to consumers.

Even though this extreme form of value chain streamlining is unlikely to become more pervasive for several decades, today's retailers who primarily sell generic or third-party products should heed warnings on changing customer demands and the intent of their technology-focused competitors, as their existing proposition is unlikely to be enough to survive long term in a rapidly evolving and highly competitive grocery retail landscape. Otherwise, only a portfolio of unique own brands remains as a last resort in terms of USP. It is doubtful whether this will be enough.



Q-com: Are gorillas already a threatened species?

Only a mere 18 months after the creation of Gorillas in Berlin, quick commerce in Germany has evolved from a niche offering to a well-known business model with multiple players and coverage of almost every A and B-City.[20]

Phases and generations of the q-commerce model

The *first generation* of quick commerce consisted of delivering groceries within ten minutes from centrally located micro-fulfilment centres, with no to low minimum order values and moderate delivery costs to create initial consumer awareness and adoption. Start-ups offered a very focused assortment of approximately 500 to 1.000 SKUs and prioritized rapid expansion into key metropolitan regions. Location decisions were made using maps developed in-house, which divided each region into uniformly sized zones containing relevant sociodemographic information such as average household income, household size, urban density among others. Procurement of goods was through wholesalers or by establishing partnerships with large CPG companies. Some of the players during this first generation are Getir, Gorillas and Flink.

The *second generation* of quick commerce began in mid/late 2021 with the market entry of food delivery companies, the first wave of consolidation, and a series of strategic collaborations with retailers (also in form of investments). Especially the latter marked an important milestone for the sector. As expansion progressed (including into B-Cities), most players adjusted their delivery price structure, introduced minimum order values, began to vary delivery times and offered couriers fixed work contracts, wage increases and equipment upgrades. At the same time, product ranges expanded (up to 2.500-3.000 SKUs) to include ready-to-eat meals and private label products and the first non-food collaborations e.g. with local stores for flowers and drugstore items were established. Around this time, players began to tap advertising subsidy and retail media opportunities for additional sources of revenue. This phase also saw the emergence of many niche players specializing in ethnic groceries, medicine and "gifts" (including consumer electronics or even fashion). New players were rather focused on a more asset-light model of picking from partner stores rather than micro-fulfilment centres, similar to the US player Instacart. This second generation saw the emergence of players such as Bringoo, Yababa, Arive and MAYD, among others.

The *third generation* of rapid delivery business models began in early 2022 with significant market consolidation (which is still in full swing). The goal of acquisitors is to develop "super apps" combining meal and grocery delivery services that integrate many smaller specialty stores under one brand. The goal of each player is to be "top of mind" for consumers whatever the service or product category. Meanwhile, numerous providers have moved away from the 10-minute delivery promise and are instead aiming for delivery within 30 minutes to an hour, which is more economical. Those adopting this strategy include Doordash, Rappi, Grab, Wolt, Glovo and Deliveroo.

Break-even calculation including levers for greater profitability

Ever since the early days of quick commerce, there has been general scepticism as to whether this business model can operate profitably. Costly last-mile delivery, fluctuating driver utilization, low barriers to entry for new competitors, immense marketing efforts and uncertainty as to overall market size raise fears that quick commerce will never be more than a loss-making business. The continued lack of profitability of major players several years into operation is often cited as evidence of this.

On the other hand, advocates argue that quick commerce has the potential to bypass typical inefficiencies associated with brick-and-mortar retail business such as high rents and labour costs, large inventories and high levels of food waste.

Accordingly, as soon as one player holds a dominant market position, high warehouse density will enable faster delivery and, in combination with order bundling, more deliveries per hour, resulting in higher drop rate and thus lower cost per delivery.

Even if some players claim that individual warehouses are already profitable, it is safe to assume that contribution per delivery in most cases is still negative. Nevertheless, there are numerous levers at their disposal, both on the revenue and cost side, to improve profitability. A positive return should be possible if the basket sizes are around 30 Euros, the gross profit margin comes close to 30% and marketing costs are gradually reduced.

On the revenue side, players can achieve increased average basket sizes with higher delivery fees and/or minimum order value, as well as by expanding the range of high margin products. Additional sources of revenue such as advertising subsidies, trade media and customer data monetization as well as evaluations of regional product sales would also have to increase. In addition, many could feasibly expand their offer to include additional products such as recipe boxes, which could be convenient for customers to purchase for rapid delivery.

On the cost side, quick commerce players can optimize procurement by sourcing directly from

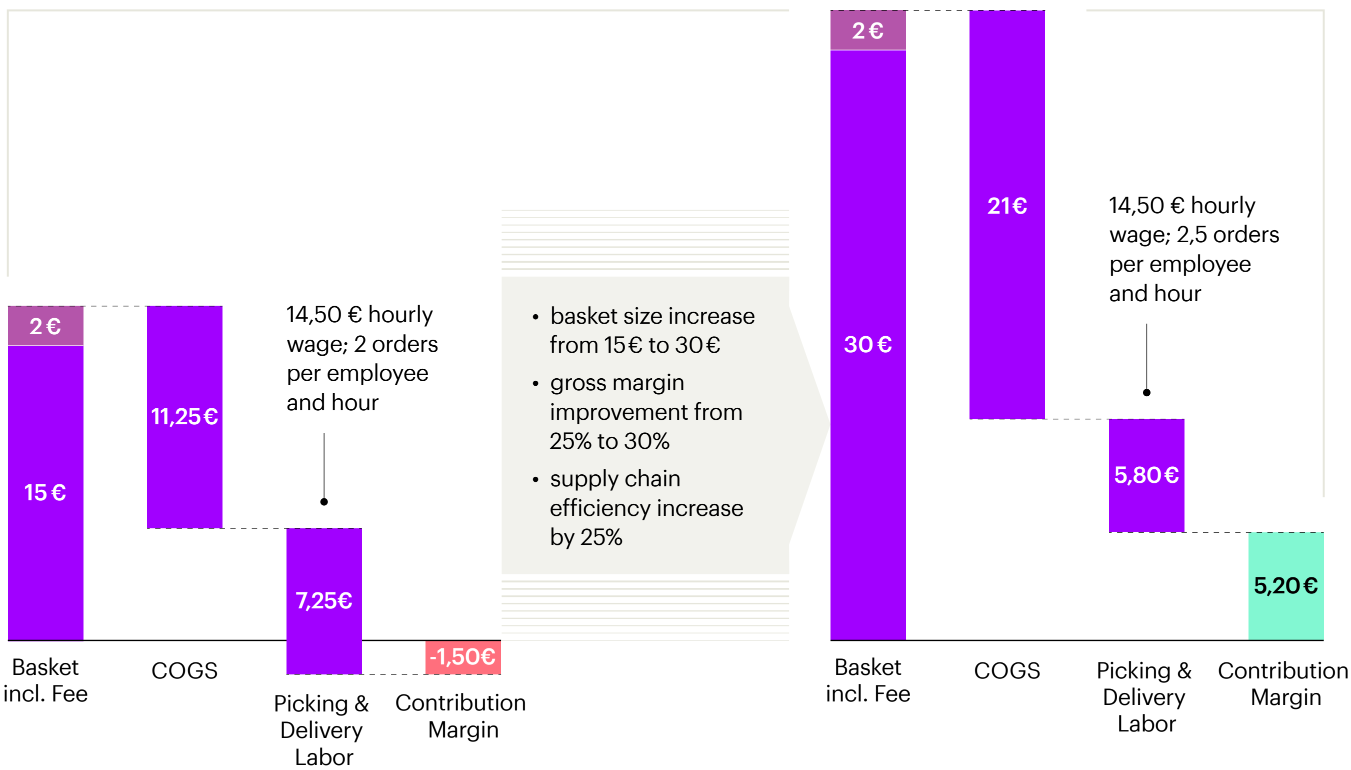


Figure 17: Typical q-com operational margin contribution and potential after business model advancements[21]

CPGs or increasing collaboration with wholesalers and global purchasing alliances. In addition, the development of private labels can further increase margins (e.g. Flink and Gorillas are already active in this regards). Increased picking efficiency through automation in warehouses and more efficient use of driver capacity will also have a direct impact on the cost structure. The inevitable reduction in marketing spend and introductory promotional offers will also reduce costs (as was the case for pizza delivery service platforms some years ago).

It should not be forgotten that there are also asset-light (pick-in-store) models that quick commerce must compete with, especially after extending delivery times to well beyond 10 minutes. In an asset-light model, players benefit from faster expansion and lower fixed costs; picking efficiency can be improved when done by store associates rather than the couriers themselves. However, asset-heavy models have faster delivery times (as warehouse locations are optimized for this) and more efficient picking for high order volumes, as well as full control over assortment and availability–illustrating that there are naturally pros and cons to both approaches.

The key question is whether quick commerce will exist in its current form long term. In addition to the profitability issue, there are now many other hurdles: scandals concerning working conditions and pay for gig workers could lead to costly changes to comply with more stringent regulation. In addition, there is resistance from cities and residents to converting retail spaces in central locations or within residential areas into noisy "dark stores" with high courier footfall.

If quick commerce players master the various challenges and focus on building an excellent hyper-local logistics structure that is difficult to replicate, they could find themselves in a strong position, with a super-platform onto which any number and nature of goods and services could be added. The differing peak times for meal orders, pharmacy orders and grocery purchases, for example, would distribute workload more evenly throughout the day (for potentially a full-time workforce). By varying delivery promises based on customer type and purchasing mission, even greater fleet utilization and drop rate could be achieved.

How can traditional grocery retail compete with quick commerce? Assuming that partnerships are dangerous in the long term due to the loss of control over the customer relationship, retailers have only one alternative to avoid losing share of wallet of high-paying customers in urban areas if this trend proves sticky: setting up an offer by themselves which is able to compete with quick-commerce services.

Retailer Spotlight:

Ochama, the omnichannel robot

Customer Proposition

Ochama is a new boundaryless retail concept by China's largest retailer JD.com, intended to help it conquer the European market. Ochama's name combines the words "omnichannel" and "amazing", with the former representing its fusion of online and offline, and the latter purportedly referring to its high-quality selection of products. Its first two shops opened in Leiden and Rotterdam in early 2022.[22]

All purchases at Ochama are made online, through the website or app; to shop with the retailer, customers must first create a membership (free for the first year, 10 euros p.a. thereafter). Other membership benefits include free collection, 4 euro home deliveries, free returns, and 10% of the value of each shop awarded as account credit.

The 7.000 SKU range includes groceries, household goods, technology, clothing and toys. A detailed category system quickly directs shoppers to the right section of the online store, with recommendations and promotions provided based on previous shopping behavior.

Innovations

Therefore, although Ochama has physical stores, they operate essentially as a combination of showroom and warehouse. Robots pick and prepare orders that reach the customer via conveyor belt when they arrive to collect them (by scanning a QR code generated by the Ochama app), or are packed for home delivery. Rather than shelves with goods that customers help themselves to, the shop floor features carefully curated displays of Ochama's product range that are designed to inspire customers (that include QR codes for instant ordering) and a robotized storage and retrieval facility for pre-ordered items. Orders are picked in a highly automated full-size distribution center and shipped to the city location for same-day pick-up (if ordered before 11am). The visible use of robots for delivering ordered goods in the store merges back-end (fulfillment) and front-end (retail) – two areas that traditionally used to be separated.

Thanks to the use of smart, state-of-the-art logistics and supply chain management technologies, Ochama is able to reduce labor costs and pass these savings onto customers (e.g. the 10% cashback). The membership model and online-only purchasing system also provide an abundance of data about customer shopping habits and purchasing preferences that can be used to inform future product range and further improve the customer experience.

Outlook

JD.com has already demonstrated its intent to expand into physical retail, with a similar chain of "boundaryless retail" grocery stores (known as Seven Fresh) in China, where customers can even let professional cooks create a meal from their purchased products. These stores also have smart shopping carts, a payment app and a home delivery service for groceries bought in-store.

JD.com has long been interested in expanding into Europe, although these plans were temporarily put on hold due to the COVID-19 pandemic. In 2021, JD.com opened its first logistics center in Germany for e-commerce order fulfilment.[23] Which European market JD.com will expand its Ochama retail strategy to next remains to be seen.

6 Capability Priorities for Retailers

The projected developments on the German food retail market require major transformation of incumbent retailers. Therefore, we have compiled specific insights and capabilities that are crucial to achieve and accelerate this transformation.

Forecasting for differentiated demand in granular networks

Housni
El Nassabi

While other areas of the value chain have optimized planning and operations through digitalization, automation and artificial intelligence, for store replenishment, many retailers still rely on highly manual, inefficient processes supported by decentralized and rudimentary systems. This leaves significant financial benefits untapped and retailers in a dangerous position given the crowded battleground, especially when competing with tech-driven pure players.

This challenge is becoming increasingly difficult to master as trend cycles become more rapid and product lifecycles shorten. Beside the effects on working capital, the risk of leftover stock due to excessive and demand-agnostic inventory-optimization and resulting high markdown levels pose a severe threat to profitability. In food retailing, the need for shelf-life induced markdowns and ultimately product shrinkage in stores can largely be attributed to incorrect and imbalanced replenishment decisions.

Moreover, the rise of omnichannel retail over the last decade, and for grocery in the past few years, has taken logistics planning and operations complexity to new heights. The change from a store-centric to a fulfillment-centric way of operating significantly increases the number of nodes in the supply chain that require consideration: this makes forecasting demand and planning inventory at a granular level even more of a challenge.

Typical issues include highly manual and time-intensive processes as well as low to no automated integration with other systems such as promotion tools, suppliers' systems and POS solutions. This can lead to serious issues that jeopardize profitability, including:

- Lost sales and lack of on-shelf availability at stores and/or DCs
- Excessive spoilage, waste and write-offs
- Inaccurate promotion forecasting and markdown decisions
- Unnecessarily high transportation costs and CO_2 emissions
- Long lead-times and underutilized trucks

Applying advanced analytics and AI-driven forecasting & replenishment capabilities to automate ordering for stores and distribution centers helps to economically establish optimal order quantities and frequency, reducing stock levels, waste and workload in the process. A sustainable demand planning capability is increasingly becoming a core requirement for grocery retailers to ensure consumer expectations and profitability targets are met. A stable and machine-learning driven demand planning process can also be leveraged to elevate other parts of the business – including workforce management, assortment and pricing optimization, performance analysis and transport management.

Long term, an automated forecasting and replenishment capability will not be a competitive edge, but rather the norm. Data-driven companies like Picnic and Amazon are leading the way: to be able to handle the increasing variation and volatility of an omnichannel buying experience, retailers need to elevate their capabilities to the next level.

Holistic planning and granular buying pattern recognition

At the core of any successful planning process is the consumer. Understanding the desires, needs and motivations of customers is the first vital step towards understanding how to plan and steer the development of more reliable and stable retail operations and planning capabilities. A retailer should not only understand customer buying patterns, but also the how, when and where of the buying journey that precedes the actual transaction.

Future-proof forecasting and replenishment solutions analyze customer data to help in this respect. For example, retailers can determine not only whether customers are buying online or in-store, but which sub-channels are being used for the buying journey – e.g., store, delivery, pick-up, click and collect. This can be drilled down further for insights into the type and even duration of pick-up. The latter data point could have clear scheduling benefits for retailers, such as more accurate lead-time estimation.

Long-term accuracy

As one moves away from short-term forecasts the accuracy of demand data and replenishment order projections decrease sharply. Therefore, for significant business benefit and to better plan future activities, grocery retailers should aim to increase the accuracy and reliability of those figures. Understanding long-term demand enables ordering volumes/frequency and inventory levels to be optimized for lowest cost, waste and write-off levels. Reliable forecast data can also be leveraged to improve transport planning and optimization, workforce optimization and warehouse management.

Grocery pricing considering consumer segments


Anna-Katharina Schmidt


Daniel Antolin


Daniel Schönknecht

Pricing challenges and opportunities of the future

The growing mix of arising sales channels in the grocery landscape e.g., traditional in store, online, marketplace or even fully pure online grocery players, creates a diverse and complex pricing landscape. This trend possesses on the one hand the challenge to deal with a high degree of price transparency and comparability and on the other hand it creates opportunities to differentiate prices through additional services or convenience aspects that trigger a new willingness to pay within consumers. The game changing aspects are:

- Change in consumer behavior and preferences
- Availability of data and analytics
- New pricing technologies

In this new environment, there will be winners with increased volumes and margins through optimized prices driven by AI and dynamic pricing software that are able to set, steer and monitor prices across the complex channel landscape in a smart way. Additionally, it will become crucially important to be able to execute price changes quicker and more efficient across the channel landscape, which will only be possible on a large scale, if retailers have the right IT-infrastructure in place.

Frequency of price changes vs. ability for price differentiation

Pricing should be distinguished along two axes:

1. Ability to change prices **frequently:**
   Referring to the ability to change prices of the same products more often, but across all channels, customers, regions etc. in the same way

2. Ability to **differentiate** prices:
   Referring to the ability to differentiate prices of the same products across channels, customer, regions etc.

However, not all retailers will be able to play on both dimensions in the same way and intensity, as this will highly depend on their business model, targeted customer segment and customer-related price sensitivity and willingness-to-pay.

Segments and customer profiles

From a pricing perspective, the German grocery retailer market can be divided into three major segments, differentiating in customers willingness-to-pay and price sensitivity (Fig. 19).

Pricing trends per segments

Price Sensitive – Discounter

The discounter customer is price sensitive, knows the prices and compares best offers, thus inconsistency across pricing channels e.g., online and offline will very likely not resonate with this customer type. In consequence, the customer will take the effort to buy where the best price is available, even though this takes time or lacks convenience.

Thus, in terms of price frequency vs. price differentiation, the discounter segment will have an increasing ability to play on the frequency axis to optimise their revenue and margins. For the future, this will require a smart pricing software solution, best-practice pricing strategies and AI-driven pricing analytics to optimize price setting and steering, based on up-to date and frequent demand forecasts, historic data, competitor information and more. Nonetheless, having the right analytics in place to determine prices is only half of the story, as prices need to be efficiently executed and brought into the stores or online channels. For example, digital price tags in stores would be required to avoid manual efforts, whereas price changes are easier to execute in online business.

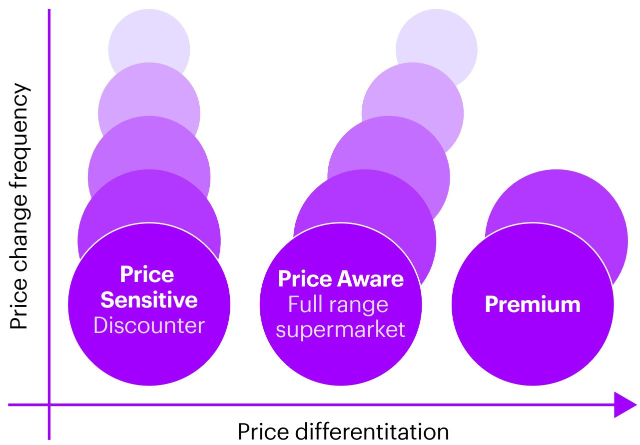


Figure 18: Price differentiation

Grocery Shopping Profiles			
Price Sensitive	Price Aware		Premium
Discounter	**Full range supermarkets**	**Organic & sustainable**	**Gourmet supermarkets**
Customer profile • Highly price sensitivity • Compares prices across all channels and hunts for best offers • Limited monthly budget • Convenience is not the important factor	Customer profile: • Medium price sensitivity • Compares prices sometimes across channels • Willing to pay for added services and quality • Medium sized budget • Appreciates convenience	Customer profile: • Medium price sensitive within their organic segment	Customer profile: • Price sensitive • No focus on price comparison • High income • High willingness to pay for premium quality and services • Differentiation and experience highly important
Organic & Sustainable Portfolio Segment			

Figure 19: Grocery shopping pricing profiles

Price differentiation is a challenge to this segment, due to its customer price sensitivity, less differentiated product portfolio and discounters' current focus on in-store grocery business.

Price Aware – Full-Range Supermarkets & Specialty Supermarkets (organic & sustainable)
Customers in this segment are price aware, but less price sensitive than the discounter customers. They appreciate quality services and are willing to pay for it up to a certain degree. They compare prices less frequently and are less aware of exact price points, but they are orientated at their average basket price. In this segment, customers are also likely to accept price differentiation across channels, as they are willing to pay for additional services, convenience, or extra quality. Furthermore, price differentiation is naturally supported by a larger product portfolio that makes price comparison more difficult.

Referring to the opportunities of price change frequency and price differentiation, supermarkets have the opportunity to play on both dimensions. Additionally, to the explained price change frequency measures that apply from the discounter segment also on the full range supermarkets, price differentiation comes into play, as another volume and margin optimization lever. Differentiating prices for products, across sales channels, locations, times of the week or even customers can be possible, whereby not all options are suitable for the traditional brick-and-mortar business.

Within the e-commerce business even AI-driven dynamic pricing becomes an option to optimize volumes and margins. E-commerce offers fully new possibilities to push up- or cross-selling, as product recommendations based on customers choice or purchasing history become possible. Furthermore, smart product bundling recommendation e.g. if a customer is selecting tomato sauce, he might prefer to purchase a bundle of tomato sauce, spaghetti, parmigiana and minced beef to get his meal prepared. Even customer specific prices, become possible through certain promotions and coupons based on customer purchasing behavior. Finally, service pricing will play an important role, as delivery speed, timing accuracy, special packaging or other convenience services are opening a new field of services that should be linked to a price tag.

In summary, this segment has the biggest opportunity to benefit from new, advanced pricing strategies driven through smart pricing technologies and a performant infrastructure, as customers are willing to pay more for differentiation, convenience and service.

The specialty supermarkets focused on organic and sustainable products take a special position within this segment. Customers are willing to pay extra for organic and sustainable products in comparison to products that do not meet their organic criteria. However, they can also be price sensitive within their segment, as long as their organic purchasing criteria are met. In principle, the same rules apply as for the full range supermarkets in terms of how often prices could be changed or to which degree prices could be differentiated. However, these smaller markets might lack the technical capabilities and investment strength to invest like the large chains. In general, sustainability and organic is a trend that goes through all segments, and it is the question how long the specialized supermarkets will have their justification, as more price-sensitive customers will consider buying organic products from the discounters if they meet the purchasing criteria.

Premium – Gourmet Supermarkets
Customers are willing to pay a premium for differentiation, services, shopping experience and excellent quality. For customers of this segment, price is not the differentiating factor for making a purchase, they are already used to changing prices, based on different in-store or online experiences or seasonality of special products. As this segment is small in comparison to discounters and full range supermarkets, the potential to optimize prices with the help of new pricing technologies is questionable, as the investment volume in comparison to the benefits might not pay-off. Technology and data will help to fine-tune prices and maximize margins but might not be as relevant in this segment as customers are least price sensitive.

Organic and sustainable Portfolio Segment
The trend for organic and sustainable products has picked up tremendous speed in recent years. From a pricing perspective, organic and sustainability impact all segments outlined above. Discounters, full range supermarkets and gourmet markets offer organic products to different intensity, as this trend is demanded by customers and offers margin optimization potentials.

Analytics-driven assortment optimization


Sandra Richter


Kathrin Schwan


Christian Schmidt

Grocery retailers in Germany curate product ranges from over 10.000 manufacturers with an ever-increasing number of new brands and products – we have seen assortment breadth increase by up to 20% over the last 10 years.

And today's consumers embrace the choice: with a high concentration of grocery outlets, consumers tend to buy from a variety of stores rather than being loyal to a specific retailer. On average, consumers visit 2,9 different stores to cover their weekly grocery needs. Consumers who also buy online will visit 4,5 stores and web shops.[13] As consumer requirements for grocery retailers had been shifting towards accessibility, convenience and one-stop-shopping even prior to the COVID-19 pandemic, they tend to turn to retailers that can best address their individual needs.

That being said, the proliferation of products and brands requires ever more consumer-centric, localized product assortments in physical stores, with the same largely true for e-grocery models, where operational requirements of local fulfilment limit the manageable assortment breadth. As a consequence, consumer-centric assortments are a key lever to sustainably grow net sales, profitability and increase loyalty.

Understanding how shoppers make decisions in different categories, including key criteria and their respective rankings, is critical. Category purchase trees can be created using a near-real-time analysis of shoppers' decision-making behavior in an indirect online survey method (shelf-based conjoint). A realistic interactive simulation allows consumers to walk through different product scenarios on a SKU-by-SKU basis - just like in a store. As a result, these simulations provide different scenarios and reveal undiscovered potential.

Where categories were reworked once or twice a year, today's technology allows retailers to shift towards shorter intervals with a continuous and more granular, hyper-local assortment approach for structured rolling category optimization. This evolution is fueled by the proliferation of data (e.g. consumer panel data, through e-grocery shopping apps, loyalty programs and digitally enabled stores) and advanced analytics and AI.

But while assortment optimization approaches have significantly evolved, there is still conservable unrealized potential.

Level up–assortment optimization of tomorrow

Today there is a wide array of solutions on the market offering assortment optimization functionality to automate category management. These primarily rely on attribute analytics-based approaches and restrictive parametric models which optimize expected net sales and margin whilst accounting for cannibalization, and are connected with planogramming applications for swift implementation.

These types of solutions are flexible in terms of location level – i.e. analytics can be performed at a chain, store cluster or even individual store level. However, very often, they do not support decision-making on the right level of differentiation vs. commonality, with striking the right balance between hyper-localized and common assortments remaining at the discretion of Category Managers. They need to weigh the benefits of differentiation with the potential increased complexity (and cost) of sourcing, supply chain and category management.

From prophet to profit – advanced understanding of purchase behavior

To stay ahead of the pack, three enhancements to mainstream assortment optimization approaches are necessary:

1. **Use of advanced modeling techniques based on personalized data:** With the rise of loyalty programs, e-grocery channel activity and new store technology, retailers are gaining access to personalized data which allows them to more deeply understand their customer base. Being able to link purchases to individual customers enables a more detailed level of analysis and deeper insights that can help retailers adapt to customer needs. This enhanced data foundation and technical advances in machine learning allow

further quantitative analysis of a large, diverse customer base and more proactive predictions of customer purchase patterns to feed into decision-making across the value chain.

2. **Integration of external data contextualizing consumer decision-making:** Customers' purchase decision processes can be structurally different even though they might appear the same when looking at the receipts. Retailers will need to expand their understanding of individual purchase behavior by capturing context of purchase decisions, i.e. leveraging external data sources (e.g. local events, social media sentiment) and creating a central data repository for such insights.

3. **Reflection of cost and requirements structures (e.g. supply chain operations):** A SKUs performance should not be measured solely on aggregated revenue, but after taking cost and operational/strategic considerations into account. Successfully and sustainably maximizing performance lies in holistic approaches based on optimization engines that integrate cost structures and operational limitations at each step of the value chain.

Assortment optimization evolution – the journey towards next generation

Embarking on the journey towards truly customer-centric assortment optimization constitutes a substantial paradigm shift. It means investing in new skill sets and technologies (data science, AI, ML, data lakes etc.), and a completely new level of analytical insights. Grocery retailers must overcome significant organizational barriers to successfully scale these new capabilities and embrace a cultural shift to evolve the role of category managers and hand over a significant control to machines. However, considering the size of the prize, this journey is inevitable to preserve and potentially gain competitive advantage.

Grocery retailers' central role for sustainability


Alexander Holst


Eike Haas


Jan-Fredrik Stahlbock

Sustainability has gained significant importance among German consumers over the last years (as described in chapter 2). Environmental concerns are changing consumers values and shopping decisions and have a direct impact on grocery retailers. Consumers in Germany expect further action in particular by grocery retailers to respond to their concerns.[8] They consider the role of grocery retailing to be crucial for the shift towards a more sustainable food supply chain overall.

Grocery retail in itself only accounts for 1% of worldwide carbon emissions. When looking back at the past decades, retailers have generally done their sustainability homework when it comes to emissions within their own operations: Partly as a result of increased margin pressure and technological innovation, cooling systems, heating, lights, logistics and energy sourcing have been optimized. Ultimately, it is food production which accounts for one quarter to one third of global greenhouse gas emissions.[25] Whilst it should be recognized that carbon emissions represent "only" one sustainability domain (given that a product's carbon footprint does not reflect other environmental and social impacts, such as plastic pollution or labor conditions) it is arguably the most pressing sustainability domain, as highlighted by the UN Global Compact 2021 CEO Study and looking at the political reinforcement driven by #FridaysForFuture.

As grocery retailers ultimately connect thousands of diverse global food value chains across tens of thousands of suppliers to millions of consumers, they are the nexus between agricultural cultivation methods and consumer purchasing power. This centrality means that retailers can differentiate themselves as sustainability leaders by both helping to transform agricultural production and consumer behavior for the better over the coming decade. Also adding regulators and investors into the picture, grocery retailers should have four key sustainability priorities on their agenda:

1. **Decarbonization:** consumers and investors have a strong interest in climate crisis mitigation through greenhouse gas reduction, with private sector commitments and government regulations on the rise. In light of controversial net zero claims in the food sector and the recently proposed Net Zero Standard by the Science-Based Target initiative (SBTi), exclusive focus should be on decarbonization – not carbon offsetting. This includes grocery decarbonization levers (both upstream and downstream in the value chain), such as regenerative agriculture, zero deforestation supply chains and reduced food waste.[26]

2. **Animal welfare:** driven by consumer demands and government regulation, animal welfare initiatives such as a ban on male chick culling in the egg industry have already been implemented by grocery retailers. Other bold commitments have followed, including the announcement of a shift to higher-standard animal enclosures for animal-based products. Government regulation and subsidies will support this transition.[27] However, additional animal welfare demands are likely to continue fueling the acceleration to plant-based alternatives.

3. **Organic, seasonal and local products:** an expected sharp increase in organic groceries share from ~7% in 2021 to ~30% in 2030 (as a result of consumer demand and regulatory measures to reduce the use of pesticides) will leave grocery retailers facing sourcing challenges.[28] These should be mitigated through seasonal and local sourcing strategies, which are beneficial to sustainability efforts in themselves. This also requires consumer guidance to drive behavior shifts, but at the same time needs to address decreasing purchasing power in the light of rising inflation rates.

4. **Consumer health:** the focus on consumer health has gained momentum and intensified throughout the COVID-19 pandemic, of which food is playing a key role as it is likely to have a greater impact on consumer health than on the environment. Given that European consumers do not perceive grocery retailers to be a reliable source of health and environmental information, it is evident that they must revise consumer communication and assortment planning to better guide consumer behavior and gain trust. Grocery retailers in other European countries, such as the UK and The Netherlands, have taken

action by defining revenue targets for healthy products based on government definitions and models.

Grocery retailers should prioritize sustainability topics by business value, quantifying key levers across revenue growth, cost reduction, reputation improvement and risk mitigation internally. Externally, they should be mindful of stakeholder-specific communication. Data is the key enabler for business value measurement and performance management as well as external stakeholder communication, including consumer guidance on sustainable purchase decisions. Key performance indicators and reporting formats – including for example performance dashboards, product labels or loyalty app features – must be developed, underlying data requirements defined, data sources identified, data flows mapped and integrated into the existing technology infrastructure. This requires ecosystem collaboration along and across value chains and goes hand-in-hand with the digital transformation of grocery retailers.

Within this ecosystem, suppliers are another key stakeholder group for grocery retailers that are critical to engage in sustainable product (e.g. plant-based product ranges) and value chain innovation (e.g. urban and vertical farming). In the case of urban and vertical farming, emerging methods in this space offer cost efficiencies and sustainability benefits: due to controlled environmental conditions, effective nutrient supply and automated farming technology, yields are both high and reliable – and agricultural inputs, including fertilizers and water, reduced.[29] The vertical farming start-up Infarm, for example, has partnered with more than 30 major food retailers including Amazon Fresh, Auchan, Edeka, Metro and Migros to deploy more than 1.400 farms in stores and distribution centers, saving more than 60.000.000 liters of water and 60.000 square meters of land in the process.[30] Major grocery retailers are also developing and testing solutions in-house, such as the REWE pilot store in Wiesbaden.[31] Innovatively transforming traditional farming methods is certainly also a possibility: digital precision feeding and monitoring systems for animal farming, along with intelligent soil management systems, could reduce 7–12% of agricultural carbon emissions in Germany by 2030.[32] Rethinking product formulations and providing the appropriate platform and support, in particular for SME suppliers, is critical to unlocking contributions across the value chain that will help shape and achieve the grocery industry's sustainability ambitions.

The commitment to the right packaging as starting point for retailer's sustainability journey

According to a recent survey, consumers consider plastic waste as the greatest environmental challenge. The increased awareness of plastic pollution is driving the trend to sustainable product packaging which has become a top priority for many consumers, who are increasingly conscious of environmental issues.[33]

The greatest global environmental challenges

1. Plastic waste
2. Climate change
3. Deforestation
4. Water pollution
5. Air pollution

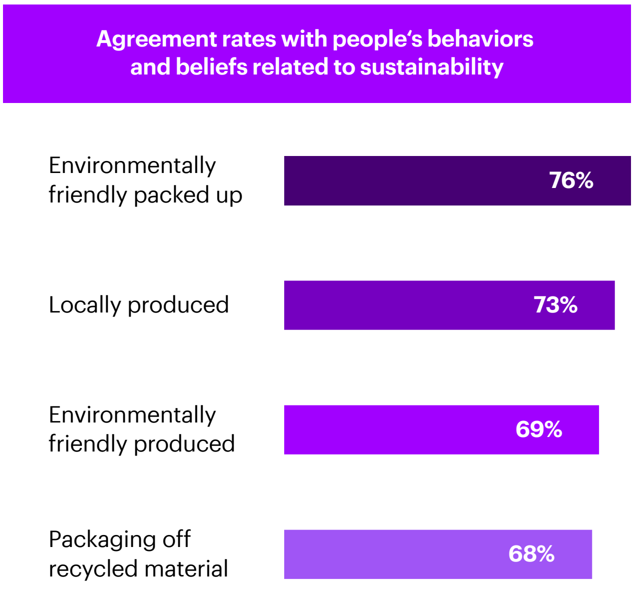


Figure 20: Environmental concerns of German consumers[33]

And consumers in Germany are already taking concrete actions to reduce plastic waste: One of five consumers stated they stopped buying or ordering from a brand due to the amount of packaging material.[33] In particular, younger consumers are willing to choose packaging alternatives that enable them to avoid plastic. In response, sustainable packaging has been ranked as the most important sustainability criteria for brands by grocery retailers and producers.[33] E-commerce players are also addressing this trend, such as Berlin-based grocery delivery service, Alpakas, with its zero-waste approach to packaging for organic food and sustainable household goods.

Grocery products often make their first and last impression on consumers through their packaging (i.e. from pre-purchase browsing to waste disposal). With product packaging omnipresent in the everyday shopping and consumption experience, it seems logical for packaging to be front of mind for consumers when it comes to product sustainability. However, the actual sustainability impact of packaging differs. Looking at carbon footprints across primary food product categories, only about 5% of greenhouse gas emissions originate from packaging.[34] This varies by product category – ranging from ~0% for beef products to ~18% for berries and grapes. Instead, it is farm emissions, land use change and animal feed which together represent almost 90% of average total food-related emissions. Changing agricultural production and cultivation methods or accelerating the shift to plant-based alternatives would likely reduce carbon emissions more significantly than altering packaging for food products.

This incongruity between consumer perception and actual sustainability impact leaves grocery retailers with a strategic crossroad: do you choose to serve or to shape sustainability perceptions? The latter implies attempting to guide consumers to more sustainable choices, ultimately impacting consumption behaviors, as consumers increasingly expect grocery retailers to do. For grocery retailers, it is therefore important to identify and weight sustainability priorities across key stakeholder groups.

Flexible and scalable in-store technology


Lisa Babenko


Sven Heursch

Compared to traditional supermarkets, e-grocery providers have a clear advantage when it comes to collecting data about their customers at any point in the customer journey. But the example of Amazon Fresh's technology-packed stores is powerful in illustrating that the store of tomorrow is already following suit with increased digitization of the store.

Many retailers have already implemented various pilots across a range of use cases, from Scan&Go up to Smart Checkout solutions. However, when it comes to scaling, most pilots fizzle out. Spiraling costs for IT infrastructure and personnel and unreliability of internet connection in areas with insufficient bandwidth for large data streams from the huge number of cameras in stores represent core challenges. Often, innovations and prototypes such as Grab&Go, Smart Checkout, Electronic Shelf Labels, etc. are isolated solutions with numerous interfaces and pitfalls that complicate successful operations at scale. Maintenance and lifecycle management of patchwork solutions incurs costs that exceed any benefit.

However, findings from pilot projects point to an efficient solution: moving to a cloud environment where business infrastructure, innovations and data are ubiquitous and housed under one "roof". This type of end-to-end management means all retail processes can be digitalized step by step. New use cases such as real-time inventory monitoring and seamless checkout appear possible. However, this solution brings other challenges that rarely show up early in pilots.

Large volumes of data from disparate solutions need to be centrally processed in real time. The solution must be highly stable and continuously available, which is often complicated by a lack of a stable internet connection or bandwidth in stores. Security and GDPR regulations also play a central role (and go hand-in-hand with the issue of end-to-end data management). Moreover, given that data and analytics are critical to retailers carving out a competitive advantage and sustainable growth strategy, ever-increasing real-time data processing demands and data density mean that even a cloud-based solution can reach its limits (regardless of large bandwidth).

Centrally-controlled edge servers in stores

This underlying challenge is familiar from industrial settings. Whereas decentralized systems and on-site operations were previously necessary to control robots, the industry is pivoting to a new approach: integrating systems into a "cloud edge"

network. Manufacturing machines are still controlled by on-site edge servers, but these are interlocked with the central cloud. This can reduce labor costs and make distributed data available to help optimize the manufacturing chain.

This approach can also be applied to grocery stores. Stores would be equipped with centrally-managed hardware and software called edge servers, with edge devices or sensors (such as camera systems and cash registers) connected to an internal store edge server. The edge server ensures uninterrupted availability of digital services and systems, regardless of bandwidth and stability of internet connection. The distributed servers are managed centrally via cloud services, data is replicated via on internet connection, without restricting in-store operational processes. Store data is processed locally, with only relevant, aggregated data shared into the network (to reduce data density). Customer-related data (such as video footage) is processed in real time and not transferred into the cloud, which enables higher security and personal data protection law compliance.

Cost control and lifecycle management

Cloud-edge approaches are manageable in terms of the technology and process involved. However, the key challenge in scaling is to keep both initial implementation and rollout costs in check, as well as total life cycle costs. It is also expected that new use cases will be added over the years, which should be implemented on the cloud edge infrastructure with as little additional cost as possible and by avoiding data silos between different third-party vendors.

Conclusion

The solution aforementioned is ultimately a highly flexible, centrally controlled cloud-edge infrastructure that enables data, analytics and service management between cloud and decentralized edge servers, which can be easily enhanced and customized for each business over its lifecycle. It therefore pays to invest a little more time in planning out the business architecture and blueprints at the beginning to be able to keep costs under control in the medium to long term.

In order for the cloud-edge architecture to be successfully applied within a grocery context, however, the following prerequisites must be clarified:

1. How can the solution be scaled flexibly within a reasonable time frame and investment?

2. How do in-store processes and operations need to be redefined?

3. How can retailers manage costs efficiently e.g. through partnership models with technology providers?

Consumer-centric last mile fulfilment


Housni El Nassabi


Sven Kromer

Customer behavior, expectations towards retailers as well as the entire buying experience have changed more significantly in recent years and months than ever before. As a result, retailers have started to reorganize their supply chains to boost omnichannel capabilities, improve logistics processes, overcome barriers to growth and identify further areas of improvement/optimization. Going forward, we expect a shift towards higher last mile delivery standards; including, but not limited to, faster and more flexible delivery options. Businesses are now faced with the challenge of (re-)shaping their last mile strategy to put the customer at the center of the order and fulfilment process and approaching delivery services as a customer value differentiator instead of a cost driver.

Customer centrality as focal point of the last mile

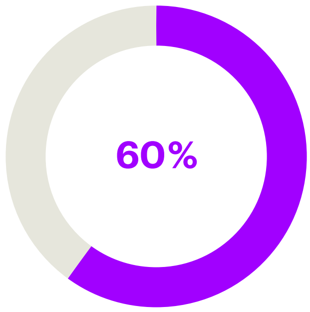
In today's world of an increasingly omnichannel and digitalized buying experience, customers expect control over, as well as visibility of all aspects of delivery. They want to be able to select from of a wide range of available delivery slots, decide where the order should be delivered to, not wait too long to receive their items, and get updates in real time. At the same time, they want to be able to adjust orders flexibly and even speak or chat to the delivery employee. The rise of the quick commerce model and increasing popularity of ultrafast delivery has only raised the bar and opened up new opportunities for grocery retailers to explore with their e-commerce setups.

Sustainability – a key differentiator for the last mile

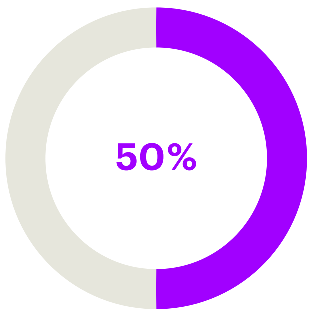
The combination of changing customer demands and stricter legislative pressures, means that sustainability is ever more critical for retailers and delivery services to integrate into long-term strategy, and greener and more sustainable fulfilment that includes – but is not restricted to – the last mile, should be one of retailers' top priorities. Whether it is creating sustainable and recyclable packaging, eco-friendly deliveries or ensuring that working conditions of delivery employees are up to scratch, retailers should double down on a sustainable model that strengthens market position and improves customer satisfaction.

Seamless buying experience

In most parts of retail, the last mile has lagged behind in digitalization and remained detached from the broader buying experience, with the resulting lack of control and transparency often leading to customer frustration. Ensuring a customer-centric strategy for the last mile will allow retailers to create a seamless experience for the customer from the app to the doorbell that, when combined with more efficient and convenient pick-up options and customer service, will allow retailers to further improve brand loyalty. A recent Accenture survey took a closer look at the relationship between delivery services and consumers:



more than 60% of those surveyed would prefer a greener delivery



at least 50% are willing to pay a premium for a more environmentally-friendly delivery option

Figure 21: Customer expectations on sustainable delivery[20]

The gateway to the next phase

To successfully meet new customer demands, retailers need to build the right collaboration models with last mile partners and more stable technological infrastructure. For this, they need to look for partners with whom they can build more dynamic, agile, and adaptive last mile operations, which will need to be iterated and optimized over time.

On the technological infrastructure side, retailers have traditionally had limited involvement in last mile delivery systems, as these tended to be outsourced and thus out of their control. However, as last mile services and logistics partner portfolios change and requirements become more diverse, retailers' involvement will likely need to evolve.

Monetization of customer insights through retail media


Sebastian Schmidt


Michael Kahle

Today, retailers collect endless amounts of data about their customers. To become more customer-centric, retailers must leverage this to create a 360-degree view of their customers, which means understanding who they are, what they buy and what they need. Building insights into individual behavior is of tremendous value for creating personalized shopping experiences, shortening decision cycles and improving brand loyalty. Rich customer profiles can inform business decisions to drive growth and create new revenue streams such as data monetization (to help inform and target retail media, for example), that can increase profitability.

Retail media comprises of various marketing activities directed at consumers at the point of sale – or at the point of selection when the consumer is comparing competing products or brands. Originally, trade marketing referred to activities in the physical retail store, e.g. in-store advertising and sampling. However, with the rise of online retail and e-commerce, retail media is far more expansive. Supported by seamless loyalty programs that connect e-commerce and in-store sales, retail media provides an opportunity to personalize advertising based on a 360-degree customer view and obtain detailed insights on customer preferences and behavioral traits. This data foundation, which is enhanced as more information is collected and more customer profiles created, is a differentiator that can prove decisive in successful customer experience innovation.

Media becomes an integral part of the retail value chain

Today, most business models are still linear and sequential between suppliers, retailers and customers – but this is about to change. Whilst each partner in the value chain is currently focused on maximizing the profitability of each transaction; tomorrow, maximizing the value of the individual customer relation will come to the forefront. It is a mindset shift from a transactional value perspective to a customer lifetime view of the business – from a linear model to a flywheel business and retail ecosystem. In this new ecosystem, customer data and insights are used to optimize the assortment and create new products, develop astute value-added services, and deliver a better customer experience with relevant advertising to attract and retain loyal customers.

With the shift to a customer lifetime view, the retailer's advertising placements not only appeals to established, well-known endemic brands that already spend trade marketing budgets (i.e. are already part of the retailer's assortment), but also opens up the opportunity for non-endemic brands that would contribute with incremental investments while providing additional services. For those retailers that become platforms, there is also an opportunity to gain valuable access to new customers, services and experiences.

Winning every value equation

With the rise of e-commerce, retailers see lucrative trade marketing income coming under threat as brands shift their investments into evolving digital channels with tangible metrics to analyze digital marketing strategy and impact (e.g. traffic, leads, and sales) across the entire customer journey. Retailers have protected their profitable trade marketing income from their suppliers for decades, but with retail media, can strengthen their relationships with both brands and suppliers by offering more transparent, performance-based pricing.

The plethora of options for retail media advertising means that all supplier budgets can be catered for: upper funnel awareness placements can be sold to marketing departments or media agencies for brand building, whilst lower funnel conversion products can be sold to trade marketing teams nudging the client towards the final sale with a dedicated discount. For both sides, a new level of transparency and a clear relationship between cost and performance creates an opportunity to redefine how advertising will look in the future.
To achieve the high profit margins that retail media typically affords retailers (up to 85%), the following rules should be considered to sell advertising inventory at a premium:

1. Offer advertising products across touchpoints along the entire customer journey

2. Target valuable shoppers with high purchase intent/showing particular interest on a retailer's website or mobile app

3. Connect with audience at moment of truth/ point of sale during purchase journey

4. Target consumers based on retailer's first party/ customer data rather than interests solely derived from surfing behavior

5. Provide measurable MROI in line with shift towards greater transparency around retail media spend and impact

With these unique selling propositions, retail media can stand out from the advertising models of Google, Facebook and others, as they are not able to provide the same valuable, highly specific, customer insights. Moreover, the move by several browser developers (including Google) to phase-out third-party cookies will only accelerate the growth of retail media given that the obvious alternative for many advertisers, contextual targeting, will require the sort of solid understanding of customer personas, segments and purchase journey specifics that underpins retail media.

There is not a one-size-fits-all model. Many existing retail organizations are not yet ready to scale their media businesses. Some lack the required media sell-side capabilities relating to people and technology, others do not actively push retail media business for fear of cannibalizing their traditional trade marketing revenues. A media publisher's business is built on an integrated data foundation; this is only possible by consolidating every customer's transaction and interaction data under a single, unique ID, creating an opportunity to use these insights at the point of sale for higher conversion.

Now is the time to act: retailers are in a unique position to set up and scale their own media businesses. Brands and media agencies will shift their media budgets to retailers to leverage their wealth of first-party customer data. With a promising future ahead and numerous players in the game, the business of customer data monetization is precious. The market is ripe for development and innovative solutions – and retailers are well placed to play a pivotal role.

Authors

Alexander Grunwald
Alexander is a Retail Strategy Manager with Accenture Strategy. He works with global retail clients across sectors to define and support end-to-end strategic business transformations on e-commerce, integrated business planning and operating models from strategy development to business process design. As lead of the retail supply chain and operations circle of Accenture ASG he drives the development of new insights and innovations.

alexander.grunwald@accenture.com

Dr. Rabea Schrage
Rabea is a Retail Strategy Consultant with Accenture Strategy. With a strong focus on process design, data analytics, and customer-centric transformation, she works on end-to-end strategic digital transformation projects and various parts of the value chain. Her clients include leading retailers in the grocery and consumer goods industry.

rabea.schrage@accenture.com

Dr. Peter Rinnebach
Peter is a Managing Director with Accenture Strategy. For more than 20 years he supports retail and e-commerce clients along the complete value chain. This includes large scale transformations from strategy and conceptual design down to implementation.

peter.rinnebach@accenture.com

Michael Kahle
Michael is a Managing Director with Accenture Retail Strategy. He is working for 20 years in retail and supports retailers and brands in business growth and transformation with a focus on digital, omnichannel, sales and marketing. He also leads Accenture's European Marketplace & Retail Media Practice.

michael.a.kahle@accenture.com

Dr. Marc Knuff
As Global Director Retail, Marc is globally responsible for the retail business within GfK Consumer Panels & Services. For more than 15 years he is designing and leading complex market research projects for national and multinational retailers. He is specialized in category management and shopper marketing.

marc.knuff@gfk.com

Thomas Steiner
Thomas is Account Director with GfK Consumer Panels & Services. He is working for 18+ years in consumer goods and retail with a focus on new business development and strategic consulting. As lead of Retail E-Commerce, he also drives the development of insights in this area.

thomas.steiner@gfk.com

Contributors

Daniel Antolin
Daniel is Accenture's European Lead for Pricing Strategy within the CEO & Enterprise Strategy Practice. He has more than 15 years of experience in pricing consulting and joined Accenture in 2021 as a Partner of pricing specialist Homburg & Partner. Daniel has built up deep expertise in all areas of pricing throughout his career, with a special emphasis on the industrial goods market, consumer goods and home & building technologies.

Lisa Babenko
Lisa is part of Accenture Strategy & Consulting and the Innovation Lead for Retail in Germany, Austria, Switzerland. Lisa supports clients from retail and consumer industries with digital strategy, growth and innovation – from defining the north star to setting up innovation hubs and building new businesses and ventures. Her focus areas include omnichannel commerce, store of the future and platform-driven business.

Housni El Nassabi
Housni is a Senior Consultant, part of Accenture's Retail Strategy & Consulting practice with a focus on Supply Chain & Operations. He is consulting global clients in large-scale Supply Chain Transformations with a focus on integrated demand and supply planning, order fulfillment and last mile delivery.

Eike Haas
As part of the Accenture Strategy – Sustainability practice, Eike brings more than 10 years of national and international experience in strategy consulting. This includes projects in Germany, Switzerland, Sub-Saharan Africa, and Middle East. He specializes in sustainability strategy development within consumer products.

Sven Heursch
Sven works as Program Manager in a global team that drives the development of Accenture's One Edge Platform and the global Edge strategy of the firm. One Edge Platform is Accenture's approach to provide a central manageable Cloud-Edge-IoT computing continuum on top of HCI/MAG infrastructure to enable customers from all industries to scale in an affordable way to a huge amount of Edge devices and distributed data structures with (even temporarily autonomous) services at the Edges.

Alexander Holst
Alexander has 20 years of consulting experience with a focus on strategy formulation and organizational transformation. He has helped several international and national corporations to integrate sustainability aspects into their respective core business. He represents Accenture at several bodies and is a member of the Global Environmental Steering Board of Accenture.

Sven Kromer
Sven is a Managing Director, part of Accenture's Strategy practice with focus on the retail and consumer goods industries. With 20+ years in the industry Sven helps executives from retailers, wholesalers, and suppliers to shape and improve their supply chain to arrive at the next level of operational excellence.

Sandra Richter
Sandra is a Senior Manager with Accenture Strategy. With 13+ years in Retail Consulting, she has supported national and international clients in the areas of business strategy and large-scale transformation programs along the entire value chain. She specializes in Merchandising, Category Management, End-to-End Planning, Purchasing and Supply Chain Management.

Lenneke Schils
Lenneke is Global Insight Director and globally responsible for Thought Leadership for the FMCG industry within GfK. She has more than 9 years of experience in advising clients on shopper business questions including developing brand growth strategies and innovation roadmaps. She is currently consulting clients on the impact of changing shopper behavior in the light of the pandemic and price changes.

Anna-Katharina Schmidt
Anna-Katharina is Senior Manager in Accenture's Pricing team within the CEO & Enterprise Strategy Practice. She has a truly international academic and professional background and +7 years of strategy consulting experience. She is an expert in Pricing and Commercial Strategy development and within Accenture's Pricing practice focused on clients from the industrial goods and retail industry.

Sebastian Schmidt
In his role as Digital Transformation Manager at Accenture Interactive, Sebastian has accompanied several international retailers transforming their marketing operations to center customer experience along the entire value chain. He is focused on the design of new business model strategies and their integration into the underlying technology landscape to streamline efficient operations.

Christian Schmidt
Christian is Senior Director at GfK Consumer Panels & Services and leads the Retail & Lifestyle department in Germany and has taken on various roles within the past 14 years. As a certified category manager, Christian and his team consult well-known companies in the area of FMCG retail. In this role, he is also an expert in assortment optimization and related disciplines in the category management process.

Daniel Schönknecht
As Director Advanced Solutions within Consumer Panel and Services at GfK Daniel takes on all shopper related topics from Retail & Lifestyle-clients in Germany that require additional insights beyond the regular household panel data. During the last 15 years he gained experience in several retail and market research companies where he dealt with major clients from various branches (focus on FMCG/grocery).

Jan-Fredrik Stahlbock
Jan is the Vice President for Advanced Solution within Consumer Panel and Services at GfK. With over 15 years of experience in strategic consulting and market research his focus is ever since on retail and consumer goods. He is specialized on consultative shopper research projects and recently focused on how consumer behavior changed in the in the course of the social discussion about sustainability.

Michael Schwaer
As a Director Michael is working with GfK Consumer Panels & Services for more than 20 years. Starting with market research and category management projects for major FMCG clients, he is currently focusing on retailer's businesses, also in the area of retail innovations.

Kathrin Schwan
Kathrin is a Managing Director with Accenture and part of the core leadership team of Accenture`s Data & AI network in Austria, Germany and Switzerland (ASG) comprised of 1500+ data professionals. Kathrin brings 20+ years of experience in data & AI, and leads the data science, machine learning and augmented insights practice group for the ASG region. Prior to Accenture Kathrin was Analytics Business MD Europe & Americas at BCG GAMMA and VP Data Science at Criteo Inc.

About GfK

For over 85 years, we have earned the trust of our clients around the world by solving critical business questions in their decision-making process around consumers, markets, brands and media. We are a digital organization with a global presence with 2 million+ consumer panel lists in 15 countries. The real challenge facing global business and industry today is to extract intelligence, identify opportunities, and power critical decision-making. GfK answers clients' key business questions by connecting the dots, finding the relevant correlations, and leveraging the possibilities of cutting-edge AI to help our clients make smarter, faster, more accurate decisions – today and for the future. That's how we promise and deliver "Growth from Knowledge".

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