Surviving the Retail Apocalypse

What to learn from "Clicks-to-bricks"

pwc

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A "Clicks-to-bricks": surviving the retail apocalypse

Attracted by the potential return on investment, many brick-and-mortar retailers closed their physical stores in favour of operating online. Reduced rent and labour costs seemed to be powerful arguments for taking this step, as online-only players showed how profitable business models could meet rising consumer expectations for fast delivery, free returns and product availability. But traditional brick-and-mortar retailers faced challenges when they stepped into online business. For example, their complex supply chains and manual processes made it difficult to compete with the highly automated operations of online-only companies.
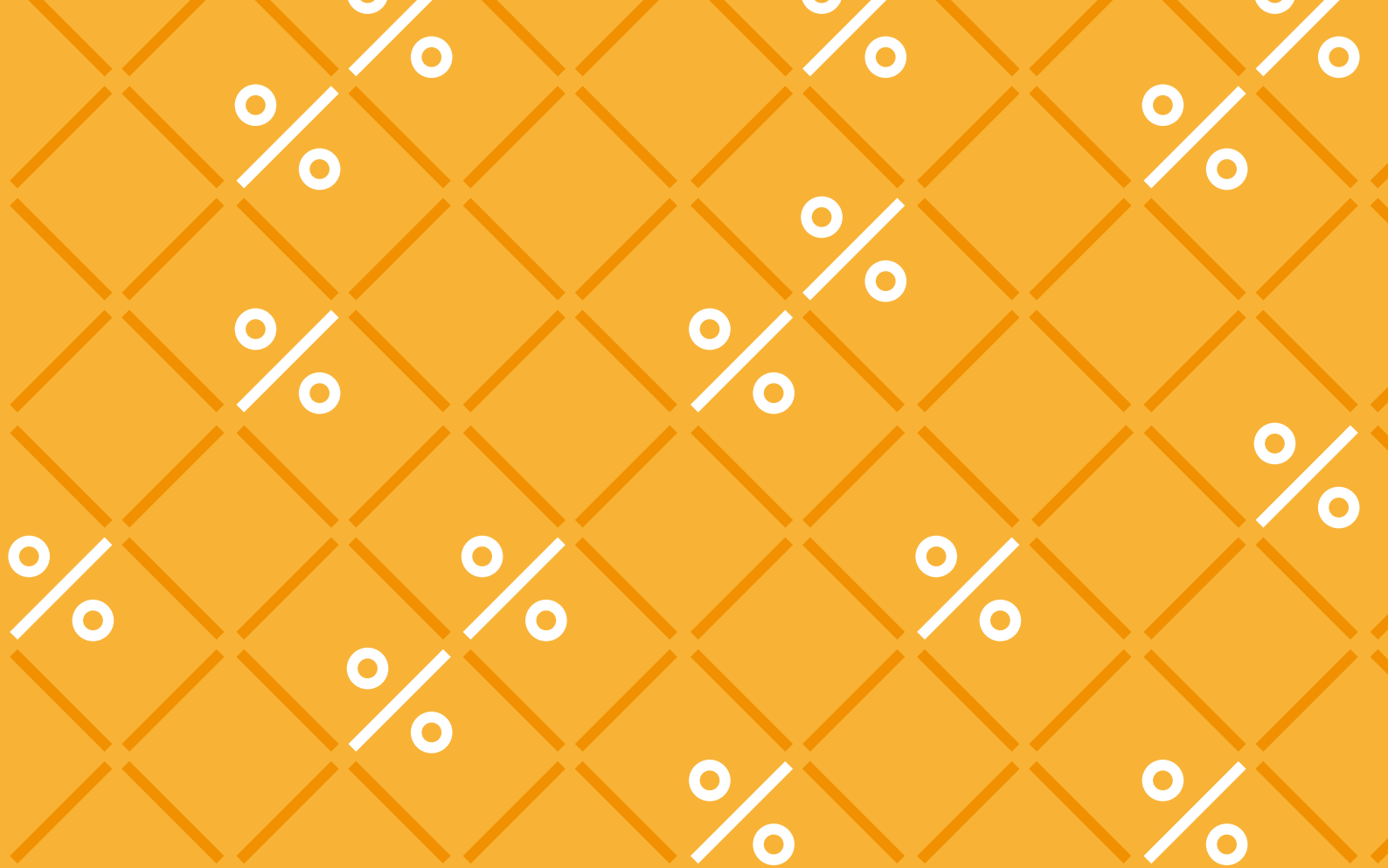
One of the consequences of this strategy of closing physical stores in prime locations was that rental rates decreased and property owners offered more flexible short-term leases. This gave online-only retailers a chance to respond to challenges related to the fact that consumers trust online stores less because they cannot check product quality before buying – and because of concerns about online fraud. Many online-only players opened pop-up stores to convince consumers of their service levels and product quality, and the term "clicks-to-bricks" was born.

By enabling consumers to touch products and by building experiences around their brands, "clicks-to-bricks" retailers saw sales and customer engagement rates increase, while return rates were far lower than during their online-only era. This showed that the physical store is not dead – but the rules of brick-and-mortar retail had changed forever.

This year's Global Consumer Insights Survey reveals new consumer expectations that go beyond demand for fast delivery and high product availability. For example, increased awareness of environmental issues is changing shopping behaviour among European consumers. At the same time, retailers require higher quality data that is managed by more effective digital systems.

Combining new technologies and innovative business models can help retailers meet rising consumer expectations and compete over the long term. The first step in digitising stores is reducing fixed costs, because this frees up budget that can be used for investment.

The following chapters discuss ways for retailers to streamline their operations, make costs more flexible and meet the expectations of modern consumers, while also exploring how retail is expected to change between now and 2025.

B Digital consumers want fast shopping and delivery as well as sustainable products

Today, online shopping offers consumers everything they want. They can order every imaginable product from anywhere in the world via a huge range of interfaces and have it delivered within just a few days. Online purchases are becoming more convenient from one year to the next, and some articles are now bought online on a daily basis (eg, train tickets). This changes the role of stores, but does not make stores any less necessary. Consumers want stores to provide the things online shops cannot offer – including face-to-face customer service and a chance to see and touch the products. And as environmental awareness rises, local products with less packaging and a more eco-friendly supply chain are gaining popularity.

Most Europeans buy online at least once a month

More Europeans shop online every day using a tablet, PC, mobile phone, wearable device or smart home voice assistant than those who shop in stores. European consumers' online shopping behaviour is in line with the global average, but behind the technologically mature Chinese market. The high frequency of Chinese online shopping may be related to the popularity of the app WeChat, which includes mobile payment services in its broad ecosystem. Other features of WeChat include various messaging options, city services and heat maps that show crowded areas.

Fig. 1 Technologically mature Chinese consumers pioneer in online purchases, European behaviour is comparable to the worldwide average
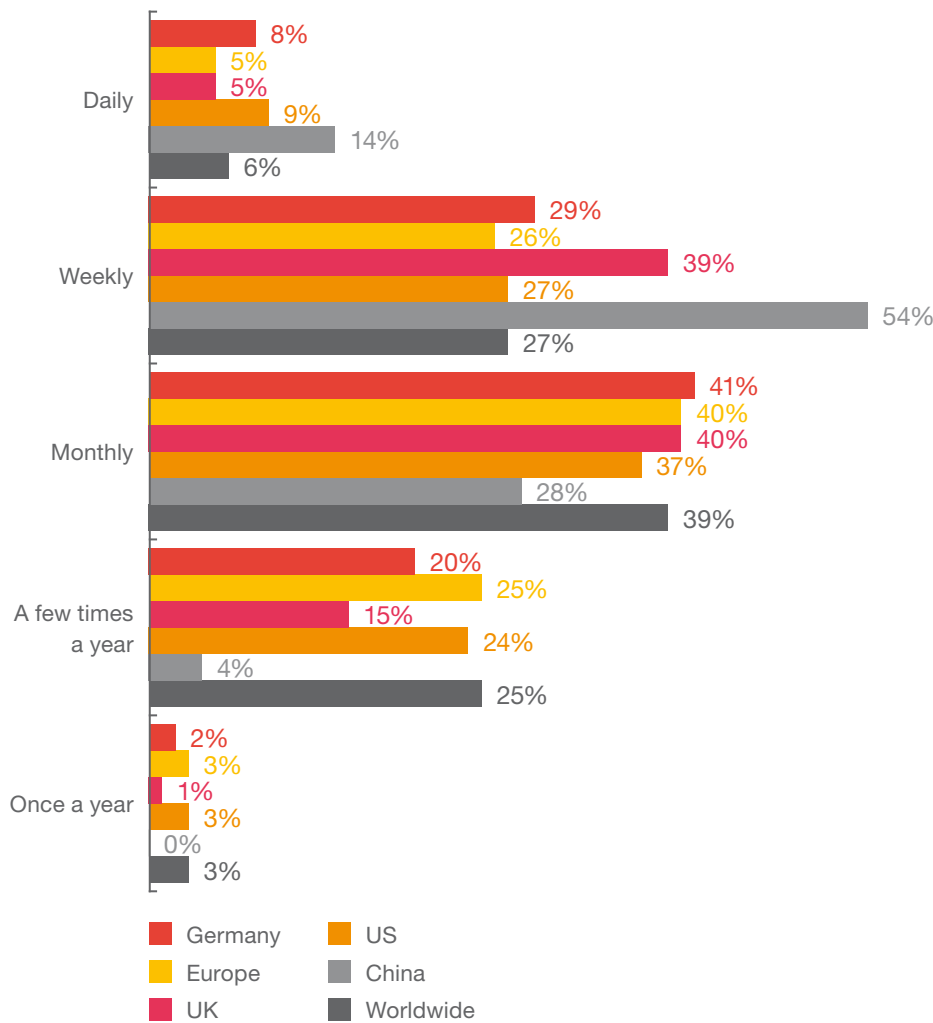
On average, how often do you buy products online?

Fig. 2   More Europeans buy online daily than in-store

	Daily	Weekly	Monthly	A few times a year	Once a year	Never
Wearable devices	8%	5%	5%	6%	11%	20%
Smart home voice assistants	8%	5%	5%	5%	9%	21%
Online via mobile phone or smartphone	11%	14%	17%	15%	12%	10%
Online via tablet	9%	10%	13%	13%	12%	13%
Online via PC	11%	19%	26%	24%	11%	20%
TV shopping	6%	5%	6%	6%	14%	13%
Catalogue/magazine	7%	9%	9%	14%	24%	—
In-store	40%	33%	19%	17%	7%	—

Legend:
- In-store
- Catalogue/magazine
- TV shopping
- Online via PC
- Online via tablet
- Online via mobile phone or smartphone
- Smart home voice assistants, ie, hubs, eg, Amazon Echo, Google Home, Samsung SmartThings
- Wearable devices

How often do you buy products (eg, clothes, books, electronics) using the following shopping channels?

Microtrips gain popularity

Microtrips are defined as visits to a store that take less than five minutes – reflecting the rising consumer tendency to do grocery shopping quickly. 5% of Europeans surveyed stated that they make microtrips more than once daily, 18% once a day and 30% two or three times a week. American consumers showed a similar pattern, while Chinese shoppers led in daily trips.

Microtrips reduce the average value of a consumer's visit to a store as they buy fewer items. If the cost per visit remains the same, margins decrease. For this reason, extensive checkout processes should be avoided to cut labour costs and impress microtrip enthusiasts.

Sustainability is becoming part of product and service quality

In line with the global trend, European consumers increasingly favour items with less packaging (41%) and avoid the use of plastic wherever possible (42%). Packaging-free stores are challenging traditional supermarkets to rethink their packaging strategies. A third of consumers prefer products with environmentally friendly packaging over plastic-wrapped alternatives, and the same proportion of consumers choose products with a traceable and transparent origin.

German consumers are willing to pay an average extra €2.34 for eco-friendly delivery.[1] 35% of consumers from the US buy items with less packaging, while 34% look for products with environmentally friendly packaging and 31% avoid plastic. Only 2% of consumers in China stated that they are not interested in sustainability, compared to 12% in Europe and 23% in the US.

Consumers believe governments and retailers share responsibility for reducing waste: legislation should ban some products, while retailers should boost eco-friendliness along the entire value chain. Sustainability has changed from being nice-to-have to being a must-have criterion that significantly influences the purchasing decision.

Europeans are less willing to pay for delivery

Many retailers used free home delivery to gain a competitive edge when they entered the online market. As a result, consumers in Europe now expect free home delivery as standard and 23% are not willing to pay for delivery. Only 13% of European respondents would pay for delivery within three to five working days, compared to 32% of Chinese respondents and 20% of Americans. 24% of Europeans are willing to pay for same-day delivery, but increasing numbers of consumers are rejecting this service because parcel delivery services are clogging up city centre spaces and residential areas.[2] Retailers will have to find ways of retaining online customers while reducing the number of packages they send. Services like Amazon Day, through which all orders placed within one week are delivered together, could make receiving packages easier for customers and cut costs for retailers at the same time.[3]

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1 Cf. PwC (2018): Wege aus dem Paketdilemma, www.pwc.de/de/transport-und-logistik/pwc-paketpreisstudie-2018.pdf.
2 Cf. PwC (2018): Wege aus dem Paketdilemma, www.pwc.de/de/transport-und-logistik/pwc-paketpreisstudie-2018.pdf.
3 Cf. Amazon (2019): Amazon Day, www.amazon.com/amazonday.

C Digital stores: from sourcing to customer touchpoints

Digitised customer experiences that merge online shopping and physical store interactions rely on digital operations and employee enablement. To offer services like same-day delivery or an endless shelf, retailers must have robust and fast IT systems with high-quality data. Without real-time inventory information, for example, it is not possible to state how quickly an order can be fulfilled.

1 Digitise your operations

Manual labour is still one of the biggest cost drivers for retailers. Automation can empower the workforce to focus on value-creating processes, while machines carry out repetitive tasks with high precision. Emerging technologies like artificial intelligence (AI), robotic process automation (RPA) and drones open up new opportunities to automate tasks, collect data and support employees.

AI-driven forecasting optimises inventory turnover and cash-to-cash cycles

Data is a key asset for modern retailers and being able to use it effectively is now a core competence. The role of data has shifted from post-event reporting to prescriptive analytics that recommend the best course of action in a given situation and provide guidance about alternative options. AI-based analytics platforms use real-time supply chain data to calculate the optimal day to place an order so that it arrives on the shop floor exactly when needed. Optimising procurement processes reduces average inventory age and improves inventory turnover, which optimises cash-to-cash cycles. Retailers should carefully consider which key performance indicators (KPIs) are important for their decision-making and which data is already available, because precise predictions require high-quality real-time data.

Drones and RFID facilitate inventory cost tracking and improve inventory accuracy

Automated warehouse processes increase cost efficiency, while reducing mistakes and costs related to manual handling, as well as contributing to greater transparency. While the floor of a warehouse is typically full of traffic, drones can use the space above the floor to deliver, count and locate products. Pre-defined flight plans that reflect the warehouse architecture can ensure safe flight operations, while drones equipped with radio-frequency identification (RFID) transponders and/or visual sensors can enable automatic inventory processes by scanning items with passive RFID tags or printed codes (eg, barcodes or QR codes). Companies can use drones that are connected to supply chain systems in real time to prevent losing track of items during busy periods.

Mobile devices for business use can upskill store employees

Store management tasks can be divided into tasks for handling products and tasks related to customer service. Handling products may include receiving new stock, placing it on shelves and returning unsold items – and there are major opportunities for technology to support these tasks. Every minute of manual labour saved pays off twice: handling

costs per item decrease and the sales force gains valuable time for interacting with customers. Equipping employees with mobile devices or enabling their personal devices to use smart store software connects them with sensors monitoring the store. This empowers them to coordinate and communicate about tasks like processing new stock, filling shelves, preparing orders and printing missing price tags, and can even be used to create a mobile point of sale (POS). Communication between employees can enable knowledge sharing through on-demand video training that develops skills for managing a smart, digital store.

Smart shelves automate real-time inventory tracking

Smart shelves equipped with electronic shelf labels (ESLs) allow retailers to quickly adapt prices across the store and help to align in-store and online prices. Cost- and time-intensive manual price tag updates that were part of the daily routine now take only a few clicks – reducing manual effort and creating a new source of quality data about the pricing strategy.

Digital price tags can also display additional product information or include other features like QR codes that enable more interactive experiences. This might include telling the story of a product's journey along the supply chain or providing

access to services like same-day delivery. Shelves that are equipped with cameras can track customers' product choices if their video stream is combined with other in-store cameras images. Push notifications on mobile devices can be used to make store employees aware when shelves need to be restocked.

Combining dynamic pricing and ESL can improve margins

Dynamic pricing software recommends prices that maximise KPIs like total gross margin by evaluating pre-determined factors such as minimum margins or maximum prices. Amazon changes product prices 2.5 million times a day, which means the average product price changes every ten minutes.[4] This has boosted profits by 25%.[5] The impact of dynamic pricing relies on using artificial intelligence to enable forecasting based on demand and on analysing competitors' pricing strategies, inventory levels and other factors. A PwC study[6] analysing the acceptance of dynamic pricing showed that customers accept a 10–20% price difference. 67% accept non-daily price changes while around a third of interviewees accept daily or hourly changes. Retailers should embrace consumer acceptance of non-daily price changes to optimise their pricing strategy based on real-time data from along the entire value chain.

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[4] Cf. Business Insider (2018): Amazon changes prices on its products about every 10 minutes – here's how and why they do it, www.businessinsider.de/amazon-price-changes-2018-8?r=US&IR=T.

[5] Cf. DZone (2016): How Amazon Uses Its Own Cloud to Process Vast, Multidimensional Datasets, https://dzone.com/articles/big-data-analytics-delivering-business-value-at-am.

[6] Cf. PwC (2018): Customer Experience im deutschen Handel – Bezahlmethoden & Preisgestaltung, www.pwc.de/de/pressemitteilungen/2018/kunden-akzeptieren-dynamische-preise-unter-bestimmten-voraussetzungen.html.

2 Physical stores as the gateway to interactive brand experiences

European consumers changed their attitude to physical stores when they became able to buy whatever they wanted from any producer at any time online. While they previously expected a broad product range in stores, they now see stores as places where the focus is on experiencing products and brands, as well as providing value-adding services. A third of West European consumers would appreciate having food and beverage services in a store, while 40% of East European consumers would welcome more entertaining experiences enabled by store design. Designing stores as social hubs forces retailers to rethink traditional store layouts and KPIs.

Fig. 3 European consumers seek convenient in-store navigation, upskilled sales associates and easy payment

Attribute	%
Ability to quickly and conveniently navigate the store	18%
Sales associates with a deep knowledge of the product range	14%
Quick and easy payment methods (including mobile and contactless payment)	11%
In-store Wi-Fi with fast, simple login	8%
A fun experience via the store design or atmosphere	7%
Customisation of products in-store	6%
Availability of food and beverage services (restaurants/coffee bar) in-store	5%
Child-friendly area	5%
Personalised offers sent to my mobile device when in-store	5%
Use of technology to assist the shopping experience (tablet/mobile checkout, self-service kiosk/scanners)	5%
Exclusive services, eg, personal shoppers and stylists	4%
Inviting lounge/rest area	4%
Specialised customer events	4%
Virtual experience of products and services through augmented reality technology (eg, smart trial "interactive" mirrors, VR headsets, 3D experiences)	4%

Which of these attributes would significantly improve your in-store shopping experience?

Smart in-store displays turn walls into dynamic storytellers

Store decoration is a time-consuming task because product ranges change frequently. However, consumers want store designs that open up fun experiences. They are used to seeing curated online content that reflects their personal interests – and digital displays make in-store decoration as convenient as publishing a campaign on social media. New content can be rolled out across multiple stores within just a few minutes. As stores get smaller, displays guide consumers through the wider product range that is available online. They offer social-media-powered experiences: for example, displaying social media posts from customers and relevant influencers in-store can spark other customers' interest in the latest trends. Customers may tag brands in their posts because they want to be featured on the display, which strengthens retailers' social media reach.

In combination with Internet of Things (IoT) components, in-store displays enhance interaction even in small spaces. Displays can adapt content by recognising some of the customer's items using RFID or near-field communication (NFC), or they can analyse their audience through demographic facial recognition. AI-driven campaign management systems create customised content by arranging pre-defined building blocks. Smart mirrors in fitting rooms can also recognise customers via their loyalty card and show personalised content like product recommendations based on the individual customer's shopping history. Convenient mobile checkout options in the fitting room can create a fluent offline-to-online experience.

Outside the store, smart displays with demographic facial recognition can reach people at all stages of the buying cycle. Proximity sensors that detect pedestrians as they get closer can enable displays to switch between campaigns and provide interactive information.

As privacy concerns about facial recognition increase, retailers have to communicate the introduction of smart displays carefully by explaining how data is used and stored. Of course, retailers must always comply with data protection regulations like the General Data Protection Regulation (GDPR). Facial recognition displays can deter customers if not explained satisfactorily.

Mobile clienteling solutions connect online and in-store customer service

Personalised in-store service arises from well-designed employee experiences. Giving store employees access to customers' online and offline shopping history and preferences can improve information flows. This does not necessarily require personal data about customers: general demographic information gathered by employees will usually work just as well.

51% of European consumers stated that they value sales associates with a deep knowledge of the product range. Mobile devices with product recognition functions can provide sales teams with this knowledge and help employees answer detailed customer questions successfully. Customers with additional requests for information are able to book an appointment with an employee in-store. Mobile devices can be turned into mobile points of

sale, which enables employees to include the checkout experience within their interaction with the customer. Upgrading employees' devices to mobile points of sale also reduces checkout lines and in-store sales cut-offs by creating a continuous flow from customer advice through to mobile payment.

Stores without inventory offer the broadest product range

Using space to store stock within shops in premium locations is becoming a thing of the past because stores are evolving to become social hubs, expected delivery times are decreasing and new sustainable delivery options are taking over the market. Stores with endless aisle concepts only exhibit a selection of their product range or have each item available in just one size. Customers buy items in the store and receive them through a delivery service. This enables retailers to avoid losing customers who would normally visit a competitor's store if a product is not available.

There are now fewer barriers to endless aisle concepts because 53% of customers are already likely to place an order online if a product is not available in the store (and if free shipment is offered). This strengthens the relationship between customers and brands because space is used for individualised services and opportunities to touch and feel the product. Endless aisle concepts can also give employees more time to focus on customer engagement.

However, fitting rooms may still be needed to help customers select the correct size. This can reduce return rates, which are still a major cost driver for online retailers in Europe. Free shipping and returns has encouraged European consumers to return online orders. The majority of German and Dutch consumers stated that they had returned an item bought online within the last year, in common with around 40% of South Europeans.[7] Online fashion retailers may even suffer return rates of more than 50%.[8] Reducing return rates can improve profitability, while also making retailers more sustainable by cutting the number of parcels sent and reducing pre-consumer waste. The growing importance of sustainability should encourage retailers to rethink their approach to returns. Amazon, for example, experienced major problems after the media revealed that as-new and returned goods were being destroyed.[9]

3 Differentiate your brand by stopping traditional online marketing

In the past, online advertising was an innovative and lucrative marketing channel. Today, traditional online advertising is often disrupted by ad blockers or goes unnoticed because of other ads vying for customers' attention. Consumers now expect personalised content.

Social media is now a key channel for customer service

The relevance of commercial social channels is increasing as potential customers spend an average of 148 minutes per day on social media platforms – particularly YouTube and Facebook. Gen Z and Millennials spend around 315 minutes each day socialising online through YouTube (102–150 minutes) and Instagram (69–72 minutes).[10] B2C online interactions increasingly include chatting to a retailer just like you would with a friend. A fifth of organic Instagram Stories from brands see at least one direct message from a consumer.[11] Instagram is leading the competition for the highest engagement rate, with an overall average engagement rate per post of 1.6%.[12] Facebook scores much lower, with an engagement rate of 0.09% per post. Corporate social media posts and timely answers to customer questions in the comment section of a post go viral more often than other content. There are even media articles that feature lists of companies that consumers should follow on social media because of their delightful, conversational and quirky posts.[13]

A third of Germans under the age of 30 stated that positive customer ratings on social media and platforms like Amazon persuade them to buy branded products.[14] Retailers must invest in a social media strategy to clearly communicate their values, create engaging content, provide customer care and start looking at it as just another channel to drive customer engagement. More and more retailers are taking this path by starting with social listening activities and integrating chatbots to react to common requests quickly.

7   Cf. Statista (2019): The Return of the Package, www.statista.com/chart/16615/e-commerce-product-return-rate-in-europe/.
8   Cf. Reuters (2018): RPT UPDATE 2-Zalando seeks to counter return problems, smaller orders as sales slow, www.reuters.com/article/zalando-results/rpt-update-2-zalando-seeks-to-counter-return-problems-smaller-orders-as-sales-slow-idUSL8N1XH1MT.
9   Cf. Wirtschaftswoche (2018): Amazon destroys massive quantities of returned and as-new goods, www.wiwo.de/unternehmen/handel/online-retailer-amazon-destroys-massive-quantities-of-returned-and-as-new-goods/22662746.html.
10   Cf. PwC (2018): Zwischen Entertainer und Werber – Wie Influencer unser Kaufverhalten beeinflussen, www.pwc.de/de/handel-und-konsumguter/pwc-zwischen-entertainer-und-werber.pdf.
11   Cf. PwC (2018): Infographic: The changing world of social media, www.digitalpulse.pwc.com.au/infographic-social-media-trends-2018/.
12   Cf. Rival IQ (2019): 2019 Social Media Industry Benchmark Report, www.rivaliq.com/blog/2019-social-media-benchmark-report/.
13   Cf. Forbes (2014): 20 Companies You Should Be Following On Social Media, www.forbes.com/sites/ilyapozin/2014/03/06/20-companies-you-should-be-following-on-social-media/#9f4348564f20.
14   Cf. PwC (2017): Wie Markentreue entsteht – und was sie gefährdet, www.pwc.de/de/handel-und-konsumguter/pwc-studie-markenvertrauen.pdf.

Influencers are trusted sources for fashion and technology advice[15]

Influencers provide guidance that consumers trust because they have gained a sense of authenticity by keeping their followers up-to-date on their day-to-day lives – similar to a close friend. They are most trusted on topics related to beauty, technology or travelling. In particular, "stories" are popular among influencers and followers because they create a more intimate relationship between content creators and content consumers, often by showing a day in the life of the influencer. Factors that motivate people to follow influencers include entertainment value, inspiration and recommendations. Consumers in Gen Z are more likely to buy a product when a recommendation is offered together with a special promotion, and this encourages them to overcome the hurdle of registering for a new online shop. 48% of Germans can imagine purchasing products promoted by influencers and a third have already bought a recommended product. On average, male consumers spend more money on items promoted by influencers than female consumers (around €130 versus €70). Cooperation with influencers gives retailers access to the daily routine of young consumers and can develop profound brand trust.

4 Customer touchpoints are getting connected

Customers' smart devices are the key platform for digital touchpoints

The number of connected devices per person is expected to reach 6.58 in 2020[16] – and mobile devices are having more and more influence on consumers. For this reason, these devices are the key enabler for other technologies aiming to make personalised customer services available to a large user group by creating new touchpoints. Enhanced product recommendation engines use artificial intelligence to suggest products based on the customer's preferences and shopping history, before assisting customer service teams in responding to customer requests. Retailers cannot stop consumers from comparing products and prices online. Instead, they must actively include online ratings and additional product information in the in-store customer journey, for example, through location-based notifications that offer additional information about a product or by displaying ratings on electronic shelf labels.

In-store navigation benefits customers and retailers

56% of European consumers stated that the ability to quickly and conveniently navigate the store would improve their in-store shopping experience. Do-it-yourself stores, supermarkets and other retailers with broad product ranges face challenges when directing customers to the right product. In-store navigation systems use maps or augmented reality (AR) interfaces to support customers.

While map-based navigation can be integrated into shopping carts, baskets or information kiosks, apps make it possible to replace standard maps with augmented reality navigation. This opens up opportunities to customise the service by calculating the fastest route after a customer uploads their shopping list into the app. Retailers might expect their cross-selling strategy to suffer, but the app can also display personalised promotions and supplementary products after the shopping list has been uploaded.

Retailers would also benefit from insights into customer behaviour patterns that could help to optimise customer support activities. For example, collecting metrics like conversion rates and average purchase values in real time enables stores to optimise the positioning of promotions.

Mature Wi-Fi-based in-store tracking systems use data from customer smartphones to track behaviour patterns anonymously – in line with data privacy laws like GDPR. By asking for permission during the Wi-Fi login, behaviour patterns can be stored and saved with a unique ID for each customer. In-app collected metrics provide retailers with insights into the most scanned and researched products to refine the product recommendation engine. Integrated visible light communication (VLC) technology sends light signals that are invisible to humans to smartphones and can track a customer's location with an accuracy of 30cm.

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[15] Cf. PwC (2018): Zwischen Entertainer und Werber – Wie Influencer unser Kaufverhalten beeinflussen, www.pwc.de/de/handel-und-konsumguter/pwc-zwischen-entertainer-und-werber.pdf.

[16] Cf. PwC (2016): Five Megatrends And Their Implications for Global Defense & Security, p. 18, www.pwc.com/gr/en/publications/assets/five-megatrends-and-their-implications-for-global-defense-and-security.pdf.

Intelligent voice assistants provide a convenient shopping experience

Voice technology is integrated into nearly every device – from smartphones through to wearable devices, cars, speakers, laptops and smart home speakers like Amazon Echo or Google Home. 12% of European consumers own a smart home assistant and 21% plan to buy one. 31% of users research products through their smart home assistant, while 24% use it to buy products. As a result, retailers must include voice assistants in their customer interface portfolio and identify product information or services that offer additional value through this channel.

Intelligent voice assistants already compete with other shopping channels when it comes to daily shopping activities. 3% of Europeans stated that they make purchases with their smart home assistants on a daily basis. This means smart home assistants are used just as often for daily shopping as tablets and wearables. The main target audience for voice-assisted shopping is younger consumers, households with children and households with an income of more than $100,000.[17] Retailers should begin experimenting with this touchpoint because habitual purchases like household goods are expected to rise.

AR and VR are enabling stores to open faster than ever

Endless aisle concepts with touchable showroom experiences are one option for moving away from unprofitable large stores with high amounts of stock. Partly or completely virtualised stores are another option, where AR glasses let customers experience different configuration possibilities within the store. Take the example of buying a new car: you sit in an exhibition car and switch between the different console configuration possibilities. The changes are shown in real time, while you can still feel the car seat and the steering wheel. This would make it possible for a consumer to experience more expensive or complex products with various configuration possibilities. Alternatively, a completely virtualised store might involve a customer standing in an empty room while wearing AR glasses to experience different environments.

Until stores are completely virtualised, AR offers smaller customer touchpoints that retailers can experiment with. Products can be tested virtually through smart mirrors or apps, while product information and configuration possibilities are displayed. Augmented kiosks or mirror systems detect products and show product-based content. Outside of the store, apps give customers the opportunity to try on clothing before buying or to decide whether a piece of furniture fits their home – which would reduce return rates.

Virtual reality (VR) headsets can take customers on a journey to a brand's production site, or to the farm where the raw materials were sourced, or even to the latest fashion show. It enables storytelling that tightens the customer-brand bond, regardless of the location or size of a store. 17% of customers believe AR and VR improve their in-store experience, and AR and VR can also be used to add gamification components to the shopping experience.

Using 3D printing to personalise products

A third of European consumers would enjoy product personalisation in-store. Prices for 3D printers and related materials are decreasing as the technology matures, and customers will soon have the opportunity to choose from an increased range of personalised products on demand. 73% of retail business leaders believe 3D printing will increase customer satisfaction.[18] However, creating large items using 3D printing still takes a long time. Retailers should focus on adding a personalised flavour to products, for example, by creating customised inserts for shoes.

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[17] Cf. PwC (2019): Prepare for the voice revolution, www.pwc.com/us/en/services/consulting/library/consumer-intelligence-series/voice-assistants.html.
[18] Cf. Ricoh (2018): 7-in-10 retail leaders say 3D printing results in happier, more satisfied customers, www.ricoh-europe.com/news-events/news/7-in-10-retail-leaders-say-3d-printing-results-in-happier-more-satisfied-customers.html.

5 Say goodbye to long checkout queues

Due to the increasing amount of microtrips, both consumers and retailers are interested in reducing time and effort during checkout. Mobile payment via smart phones and wearable devices is gaining popularity because it is convenient – and it is opening up opportunities to create completely new, faster checkout processes.

Mobile payment is on the rise – driven by the banking revolution
Customers increasingly value mobile payment for frequent purchases like train tickets, clothes and food, as well as when eating and drinking in restaurants. Mobile payment includes in-app purchases, as well as in-store payments via QR codes. With the growing trend for microtrips for grocery shopping, fast and easy payment is even more important for supermarkets. However, around 75% of European consumers stated concerns about hacking and stolen mobile devices. In contrast, consumers are increasingly willing to share personal and health-related data for discounts from their insurance or personalised health tips.[19] This suggests that mobile payment might just need a little bit more time to convince consumers.

Customers with higher incomes expect self-checkout services, while 60% of Germans would enjoy self-service checkouts or at least displays showing the estimated waiting time.

The category of mobile payment that is expected to grow fastest in Europe is in-person mobile payments – for example, paying in a store using a bank's app. German consumers prefer cash and online bank transfers, but use PayPal if they need to pay more quickly. As a result, retailers should expand the payment methods they offer and analyse which methods their customers prefer.

Physical checkouts will disappear from stores
Checkout-free stores gained media attention after Amazon piloted its Amazon Go model. Customers simply log into the retailer's app and enter the store by scanning a QR code, before choosing their favourite items and leaving the store. Cameras and sensors provide the data for artificial intelligence to recognise each shopper and the products they select, and then connect that data to the correct customer account. Customers get charged automatically when they leave the store and receive a receipt through the app. Employees in the store help customers with any technical issues, while also restocking shelves. Automated checkouts increase convenience and make space available for additional experiments – which is particularly attractive for high-traffic retailers like supermarkets. Mobile POS technologies might be a better solution for product groups that involve more consulting and personalisation.
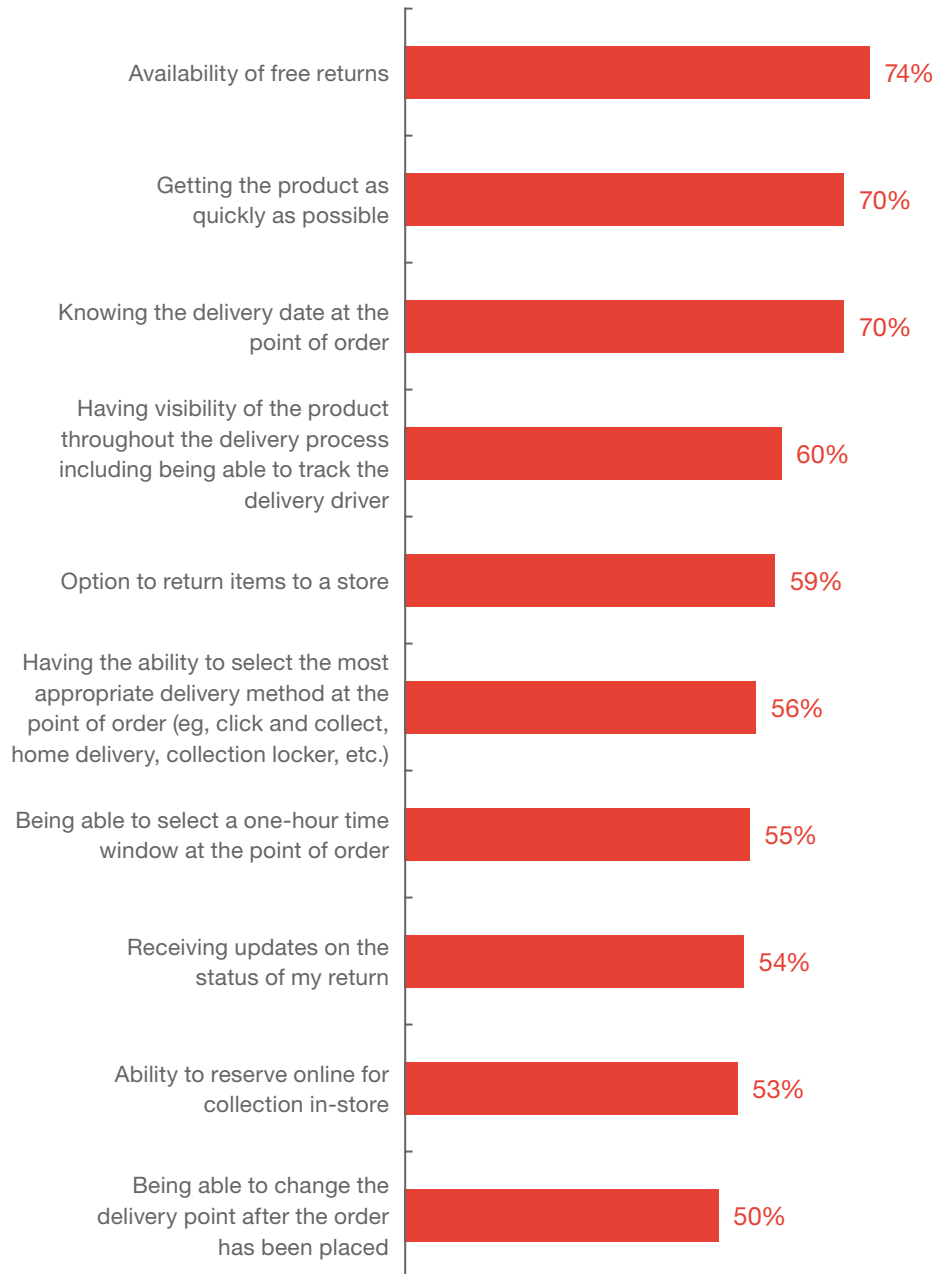
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[19] Cf. PwC (2019): Mobile Payment Report 2019, p. 19, www.pwc.de/de/digitale-transformation/pwc-studie-mobile-payment-2019.pdf.

6 New delivery methods address urbanisation

Today, European consumers are less willing to pay for delivery because major e-commerce companies have offered free shipping for many years. 23% stated that they do not want to pay for delivery, while 7% are only willing to pay for delivery within a specific time window of one to two hours and the same percentage would pay to receive a delivery less than three hours after ordering. European consumers also stated a preference for quick delivery times when asked to name the most important factor for online delivery. While the availability of free returns is important to 74%, getting the product as quickly as possible and knowing the specific delivery date when placing an order were important to 70%.

Fig. 4 **Free returns, quick delivery and an announcement of the delivery date during the checkout are the most important features for delivery processes in Europe**

Feature	%
Availability of free returns	74%
Getting the product as quickly as possible	70%
Knowing the delivery date at the point of order	70%
Having visibility of the product throughout the delivery process including being able to track the delivery driver	60%
Option to return items to a store	59%
Having the ability to select the most appropriate delivery method at the point of order (eg, click and collect, home delivery, collection locker, etc.)	56%
Being able to select a one-hour time window at the point of order	55%
Receiving updates on the status of my return	54%
Ability to reserve online for collection in-store	53%
Being able to change the delivery point after the order has been placed	50%

Will in-the-air delivery replace on-the-street delivery?

Big tech players like Amazon and Google, as well as start-ups and logistics companies, are already piloting drone delivery. Drones are being developed that can fly for longer, cover further distances and carry heavier items. Currently, drones can fly for 90 minutes, covering a range of 30km with a payload of 30kg. Drones enable fast and automated parcel delivery, while tracking creates transparency about the arrival time. Since the estimated potential cost per mile for delivery is around $0.05,[20] drones have a high potential in regions that are difficult to access and could also support retailers in the last mile of delivery. However, new delivery technologies generate considerable challenges for urban design: for example, drop-off stations have to be developed for consumers to collect packages in populous areas and several questions about security, safety and regulation must be answered. Today, drones are not allowed to fly in crowded areas due to safety concerns.

Autonomous last-mile delivery on the ground

Delivery robots offer a last-mile delivery solution on the ground. In common with drones, delivery robots are promoted for being more sustainable. They are also cheaper because they involve less manual work. Concepts for delivery robots include large electric vehicles that bring groups of smaller delivery robots to a neighbourhood. Amazon Scout, for example, is about the size of a small fridge and moves as fast as a pedestrian.[21] Delivery robots are also being piloted by food delivery companies like Dominos and PepsiCo to speed up deliveries. Currently, robots deliver autonomously but are continuously monitored by humans. As autonomous driving matures, delivery robots will do the same because of their shared sensor technology stack.

Drones and robots both enable fast, cheap and sustainable delivery – and can meet customers' expectations for speed. Despite challenges related to safety, regulation and infrastructure, autonomous delivery concepts will have an impact on the future of last-mile delivery.

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[20] Cf. Business Insider (2018): Amazon and UPS are betting big on drone delivery, www.businessinsider.de/amazon-and-ups-are-betting-big-on-drone-delivery-2018-3?r=US&IR=T.

[21] Cf. The Verge (2019): Amazon has made its own autonomous six-wheeled delivery robot, www.theverge.com/2019/1/23/18194566/amazon-scout-autonomous-six-wheeled-delivery-robot.

D Is your IT fit for the future?

Digital touchpoints require backend systems that are able to provide comprehensive information in real time. The applications that most retailers currently run are often too slow when processing and distributing information, and are difficult to adapt to reflect new market or customer requirements. Retailers need IT that ensures all business-critical systems are upgraded while enabling new, digital-driven requirements from their sales and marketing teams.

1 Data is the new asset

Data requirements are changing as a result of changing consumer behaviour, emerging technologies and growing digital ecosystems. Consumer insights are more detailed than ever. Customers expect personalised content and product traceability. Emerging technologies like in-store sensors that leverage artificial intelligence can be used to produce a stream of data that has to be processed in seconds. Retailers' ecosystems are becoming digital and data is being collected along the entire value chain. The ecosystem is being enriched by new producers, as well as by new consumer interfaces. As a result, data from various sources has to be processed and made accessible to a range of interfaces in a scalable manner.

Product information management (PIM) systems create a single source of truth for all product-related data along a retailer's value chain. The PIM system collects and maintains product data and coordinates its efficient distribution to various channels including resellers or voice customer interfaces.

Digital product twins are a digital replica of a physical asset that represent its data, relationships and behaviour. In retail, digital product twins make products digitally customisable across customer touchpoints – for example through 3D models or product descriptions from voice assistants. Overall, digital product twins make it possible to seamlessly connect the physical and digital worlds through more personalised customer experiences.

2 Embrace openness with APIs

As new software features are released to adapt to rapidly developing market and customer expectations, retailers need service infrastructure that is scalable, flexible and resistant to errors. Software development processes are increasingly agile, with a strong focus on customer expectations and the fast creation of running features. Architectures that run all functions in one application are hard to modify and have a higher risk of generating errors when changed. Microservices that are each responsible for just one function provide their services through a defined interface called an API. This makes it possible to provide loosely coupled services that can evolve and be scaled up or down independently, enabling small changes with minimal risk.

APIs also allow safe access to data and functionality for the digital ecosystem. This is because they allow collaborations with standard systems like enterprise resource planning (ERP) systems over internal APIs, as well as connections to voice assistants, smartphone apps or VR glasses through product APIs. Using defined B2B APIs makes it easier to introduce new business partners and developers during a new collaboration. Third parties, like open source developers, can be invited to build innovations around retailers' APIs in a secure way. Sharing internally developed services through APIs strengthens the retailer's reputation in the open source community and stresses their interest in collaboration.
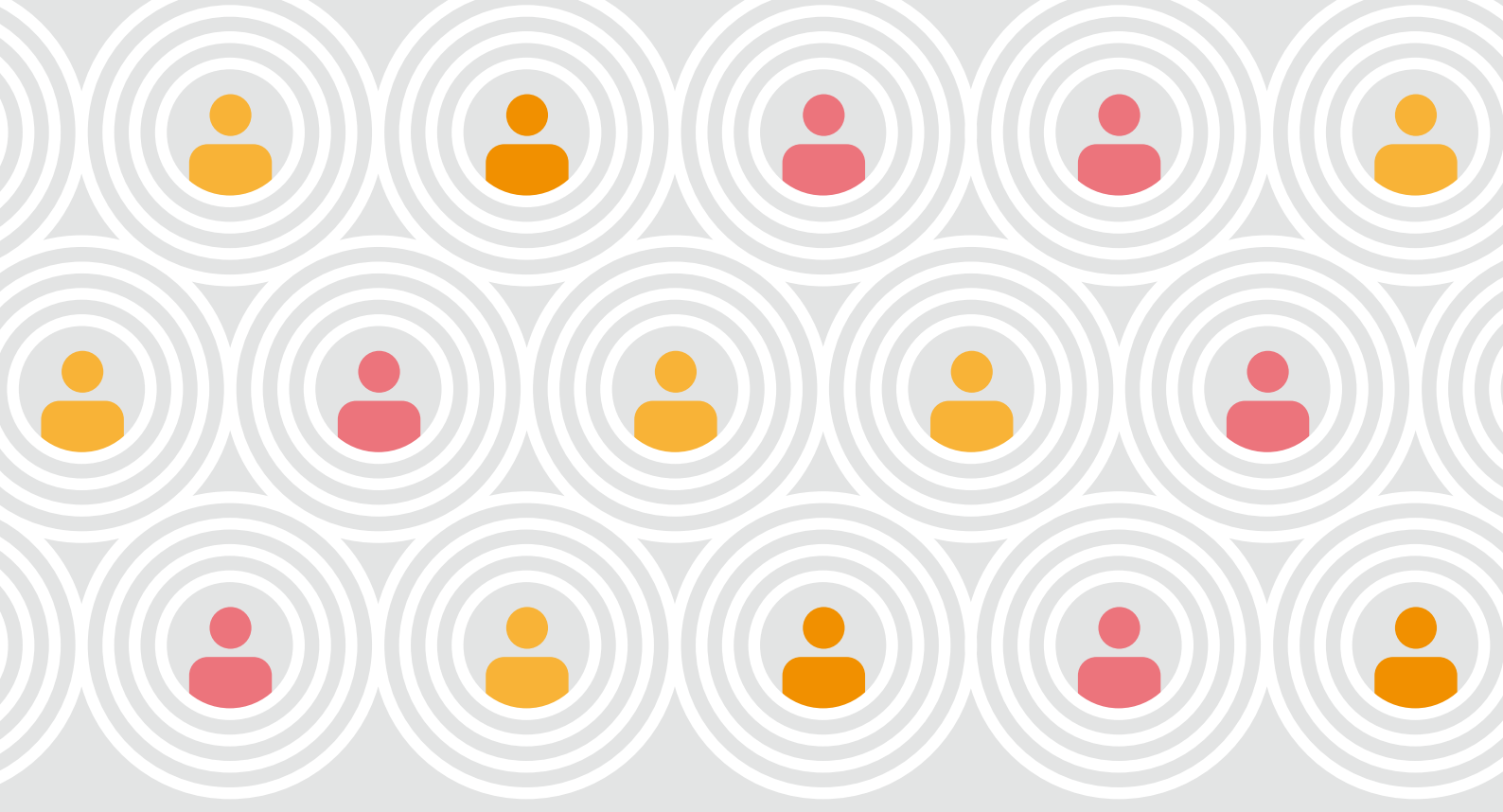
3 The cloud makes your services flexible, scalable and available

Microservices go hand in hand with cloud technology. Bringing microservices to the cloud enables retailers to flexibly adapt to growing volumes of customer requests and increasing numbers of devices requesting access to their data or services. Compared to hosting applications on their own and monitoring resources continuously, cloud providers serve the infrastructure while the retailer's team can focus on the product itself. As real-time data flows become more important, high availability is a key success factor for digitised companies. With customers and governments placing increased focus on data security and compliance, cloud providers offer certified services that meet global standards for security and privacy.

4 Event-driven architectures enable real-time interaction

In a future where even the smallest devices are connected to the internet, periodic status messages are a waste of resources – because the status will not have changed in 99 out of 100 cases. Periodic status messages also fail to support real-time events because of the delay between when the event happens and when the message is sent. For this reason, the architecture of the future will be event-driven: smart store devices will produce and publish messages for status changes, such as a new customer entering the store. The retailer's backend will read the messages and decide on the action to take in real time. Messages are then distributed over streaming platforms like Apache Kafka to ensure a reliable transmission and durable storage of records.

E From future to reality: the digital store in practice

1 Your journey

Emerging technologies offer retailers an opportunity to adapt to constantly rising customer expectations and faster-than-ever release cycles for new software and products. While every retailer's journey is different, following these four steps will make sure you are fit for the future:[22]

1. **Make space for investment through more flexible cost structures.** Lower fixed costs and increased profitability mean more flexibility to invest in real-time, innovative solutions.

2. **Reinvest in differentiating capabilities.** Concentrate on three to six capabilities that you do better than anyone else on the market. Invest in those and stay close to best practices for other capabilities to limit complexity. These unique factors enable you to compete effectively and create more flexible store models with stronger customer experiences.

3. **Create digital customer touchpoints.** Online-only companies cultivate a frictionless online-to-offline experience with fast delivery and 24/7 digital customer service. Bring digital experiences into your stores with app-based in-store navigation, in-app loyalty cards or mobile payment. Start by piloting new solutions in selected stores and do not hesitate to roll out innovative experiences after they have proven their value.

4. **Develop new business models in a partner ecosystem.** Enter into smart collaborative opportunities to turn two unprofitable stores into a profitable co-located concept – or to introduce new customer service or return concepts.
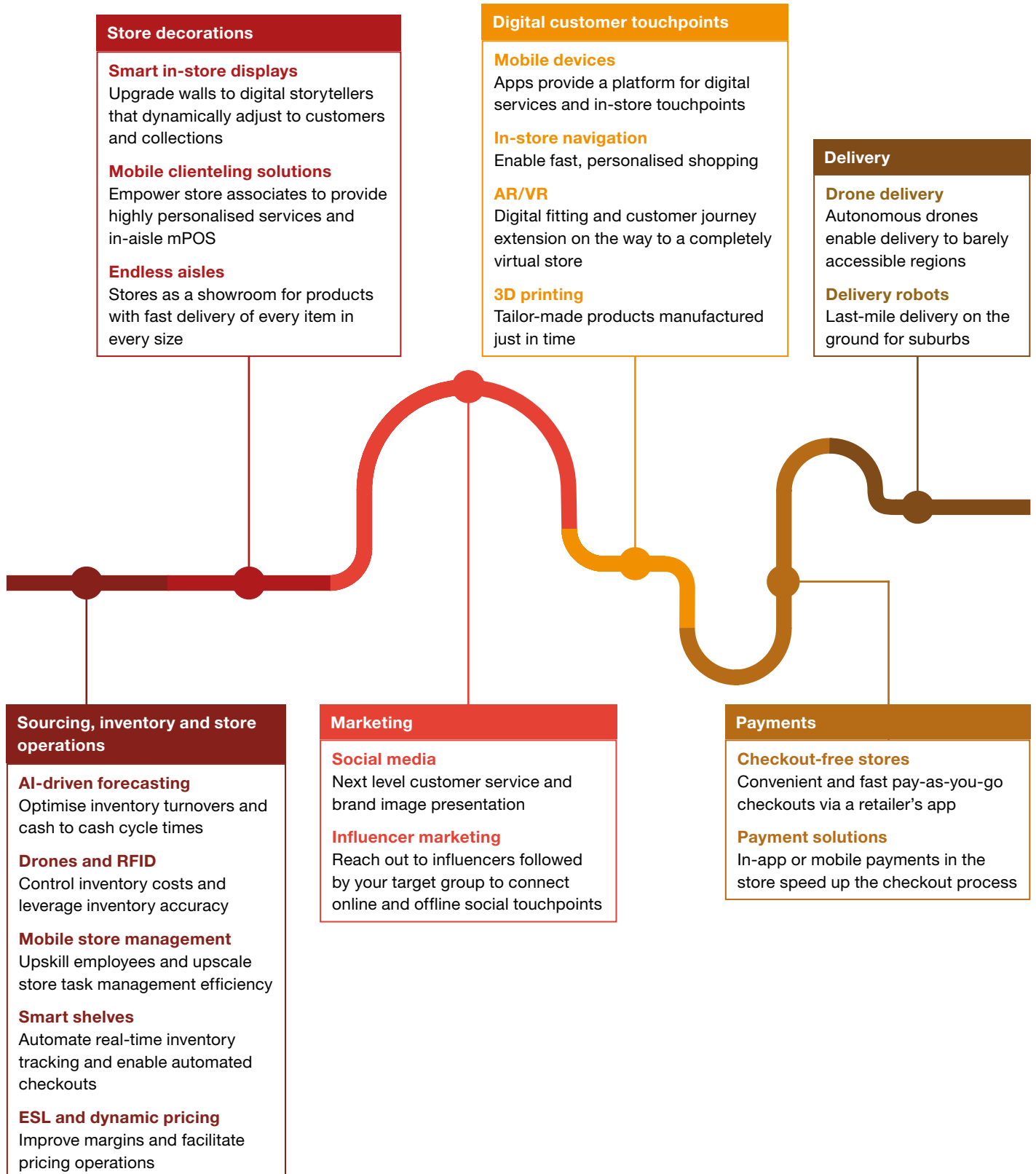
Technology is a game-changer when it comes to automating manual processes – from the warehouse floor to the back office. Cutting costs, improving quality and replacing manual tasks is relevant for internal processes (eg, using RFID and drones for inventory management) and interfaces with customers and other outside parties (eg, mobile payment). It is important to prioritise and commit to initiatives that are essential for your growth because you may not have enough resources to launch all potential digitisation initiatives. If there is a business case for automation, do not let analysis of costs, benefits and risks become a sticking point because digitisation offers an impressive return on investment.[23] Most importantly, begin experimenting with digital employee and customer touchpoints now: experience in digital store technologies offers you the insights you need to bring your future business model to life.

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[22] Cf. Ron Kinghorn, PwC Consumer Markets Advisory Leader US, Mexico, Japan & China (2019): 4 Exercises for Retailers to Get in Fighting Shape, www.linkedin.com/pulse/4-exercises-retailers-get-fighting-shape-ron-kinghorn/.

[23] Cf. PwC Strategy& (2017): Fit for Growth, A Guide to Strategic Cost Cutting, Restructuring, and Renewal, p. 34, www.strategyand.pwc.com/media/file/Fit-for-Growth-mini-book.pdf.

Fig. 5   Digital employee and customer touchpoints along a retailers value chain

Store decorations

Smart in-store displays
Upgrade walls to digital storytellers that dynamically adjust to customers and collections

Mobile clienteling solutions
Empower store associates to provide highly personalised services and in-aisle mPOS

Endless aisles
Stores as a showroom for products with fast delivery of every item in every size

Digital customer touchpoints

Mobile devices
Apps provide a platform for digital services and in-store touchpoints

In-store navigation
Enable fast, personalised shopping

AR/VR
Digital fitting and customer journey extension on the way to a completely virtual store

3D printing
Tailor-made products manufactured just in time

Delivery

Drone delivery
Autonomous drones enable delivery to barely accessible regions

Delivery robots
Last-mile delivery on the ground for suburbs

Sourcing, inventory and store operations

AI-driven forecasting
Optimise inventory turnovers and cash to cash cycle times

Drones and RFID
Control inventory costs and leverage inventory accuracy

Mobile store management
Upskill employees and upscale store task management efficiency

Smart shelves
Automate real-time inventory tracking and enable automated checkouts

ESL and dynamic pricing
Improve margins and facilitate pricing operations

Marketing

Social media
Next level customer service and brand image presentation

Influencer marketing
Reach out to influencers followed by your target group to connect online and offline social touchpoints

Payments

Checkout-free stores
Convenient and fast pay-as-you-go checkouts via a retailer's app

Payment solutions
In-app or mobile payments in the store speed up the checkout process

2 Return on experience – case studies

dm

German retail chain dm, which sells cosmetics, household products and health food, showed how quickly influencer marketing can be effective. It invited popular YouTube and social media influencers to create beauty boxes featuring their favourite beauty products – and the campaign sold out online within an hour.[24] After this success, dm has expanded its range to include boxes for different target groups like pet lovers or health food addicts. By showing YouTubers opening the boxes (known as unboxing) in their online shop, dm made itself more attractive to YouTubers, which led to more YouTube unboxing videos featuring dm products.[25]

dm also invested in digitised capabilities in the store by equipping every store employee with a smartphone to facilitate scanning empty shelves or printing missing labels. A digital learning platform helped employees begin working with their new digital assistant. Chat apps make communication between employees faster and more spontaneous, making it easier to share knowledge. The smartphone also supports employees through in-aisle services like customer card registration and online orders that are shipped to the store for free. A product scanner provides employees with details about product use and ingredients so they can answer customer questions in more detail.[26]

Lego

Toy manufacturer Lego uses AR and VR technology to gamify the in-store buying process and create experiences for people at home. During the London Fashion Week, Lego sold products in a completely empty pop-up store that only had Snapcodes displayed on plinths. These codes redirected users to Snapchat, where the customers experienced an augmented reality fashion store. Via a "shop now" button, users were able to buy limited-edition apparel.[27]

Lego also launched an app called Hidden Side that used AR to strengthen the link from its stores to people's homes by combining physical toys with AR on the smartphone. The physical world influences the augmented world, inspiring children to discover new functionalities of the bricks. It included games like "catch the ghosts" that merged the real and digital world. Additional characters and games were added after the launch to engage the children with new ideas even after playing with a Lego set for a long time.[28]

Migros

Switzerland's largest retail chain drives digitisation of grocery shopping in stores and online, with a quarter of Swiss consumers registered for its online shop. A product information management system that holds data for more than 900,000 products supplies the digital Migros environment. The customer app enables product searches by text, scan or image recognition. Every customer can access 12 different online shops with just one single account. Delivery methods include car-trunk delivery, as well as delivery by bike or electric car. The Migros loyalty card collects online and offline data, provides customer rewards and enables mobile payments in the store via the app. Migros meets rising consumer expectations related to sustainability through a dashboard that shows the customer how many environmentally friendly products she or he has purchased.[29] The company is also currently piloting an app that aims to accelerate grocery shopping by enabling customers to shop for products that they bought within the last year[30]

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24 Cf. Horizont (2016): So souverän beherrscht DM das Spiel mit dem Influencer Marketing, www.horizont.net/marketing/nachrichten/Schachtelglueck-So-souveraen-beherrscht-DM-das-Spiel-mit-dem-Influencer-Marketing-144330.

25 Cf. dm-drogerie markt GmbH + Co. KG (2019), www.dm.de/neu/lieblinge/.

26 Cf. Etailment (2019): Wie smart dm Drogeriemarkt inzwischen in den Filialen ist, https://etailment.de/news/stories/digitalisierungsoffensive-dm%20drogeriemarkt-smartphones-mitarbeiter-21935.

27 Cf. Forbes (2019): LEGO And Snapchat Just Opened A Clothing Store With No Clothes In It, www.forbes.com/sites/lelalondon/2019/02/13/lego-and-snapchat-just-opened-a-clothing-store-with-no-clothes-in-it/#626fa4b37435.

28 Cf. The LEGO Group (2019): Lego Group Introduces Lego® Hidden Side™, Combining Building With Augmented Reality To Create A New Way To Play, www.lego.com/en-us/aboutus/news-room/2019/february/lego-hidden-side/.

29 Cf. Etailment (2018): So organisiert die Migros den vernetzten Handel, https://etailment.de/news/stories/migros%20digital-21144.

30 Cf. Etailment (2019): Testlauf my Migros: Der personalisierte Supermarkt für treue Kunden, https://etailment.de/news/stories/Migros-personalisiert-Supermarkt-cumulus-22110.
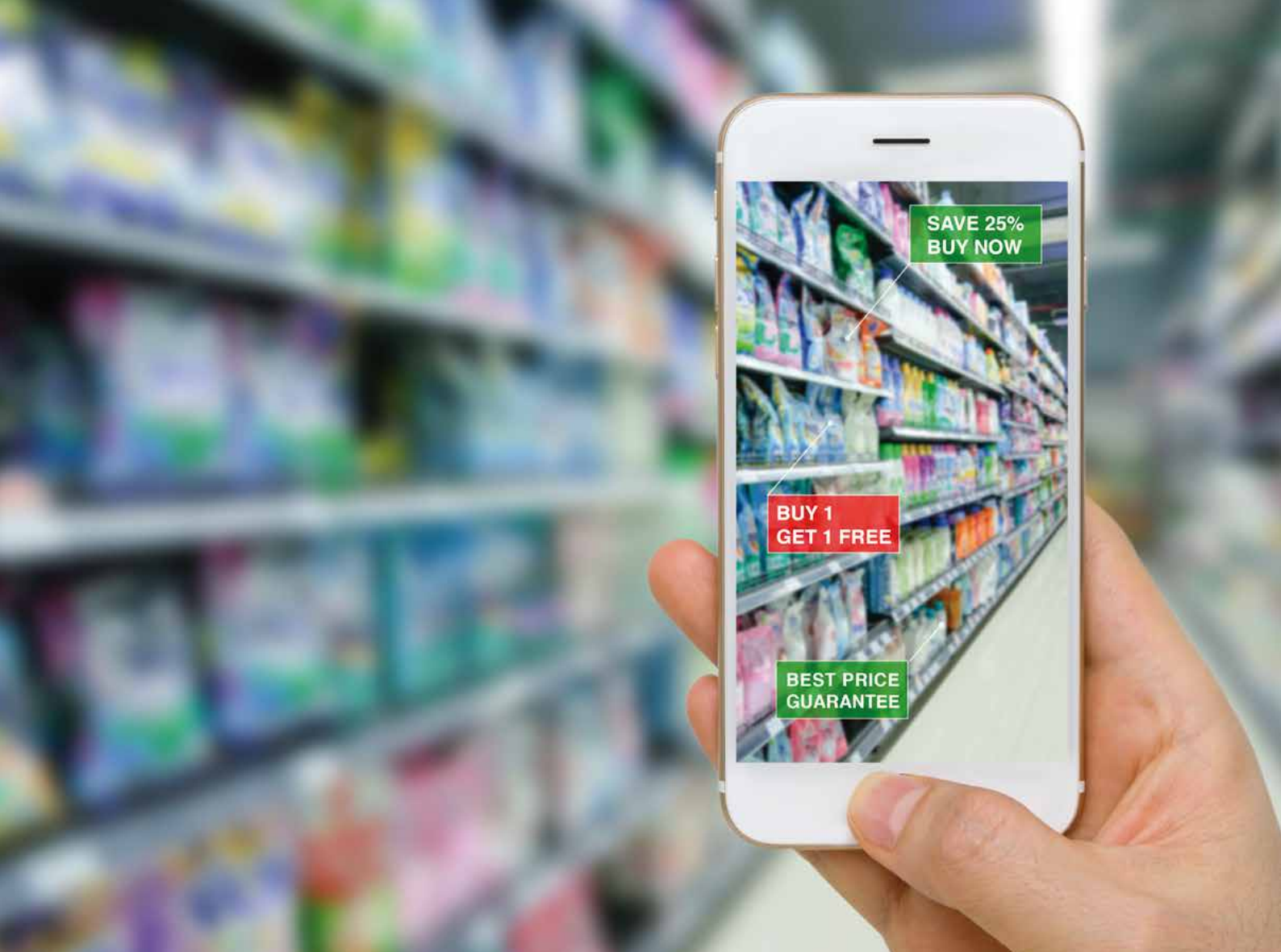
F   Digital stores in 2025

We believe that the role of the store in the relationship between customers and retailers will be different in 2025, but that the physical store will continue to be a major pillar for a retailer's customer engagement.

The ubiquitous connectivity provided by 5G will serve 1.4 billion connections.[31] 5G is a stepping stone for the IoT market and will have a significant impact on digital store operations and experiences. AI and machine learning will be part of nearly all applications in a retailer's environment, from prescriptive analytics for intelligent sourcing and procurement through to smart advertising panels that personalise promoted items to fit a specific customer or reflect external factors like the weather. Retailers will shift from hypothesis-driven to real-time adjusted operations. AI will assist them in anticipating and adapting to each customer's needs – because only personalised content will attract interest in a world characterised by sensory overload.

The growing role played by data in companies' strategic forecasts will force the European Union to work on extensive data protection regulations. These new regulations must not restrict innovation, but should challenge retailers to openly communicate any opt-ins whenever they use customer data for personalised services and to gain insights from anonymised data in cases where they do not gather opt-ins. External factors like a decreasing median age, urbanisation and the need for sustainability will challenge retailers' development in Europe.

While some key technologies will assist store employees, retailers will need to create a unique portfolio of services to differentiate themselves from competitors. In 2025, stores will have to fit into smaller locations because of rising urbanisation in Europe.[32] Digitised value chains will make all processes transparent. From design through to distribution, no product will ever be untraced. In stores equipped with sensors and cameras, store employees will be notified when they need to refill a shelf – or robots will assist in stocking shelves. Empty shelves will be a thing of the past. Enriched with in-depth customer relationship data, clienteling solutions can empower store employees to provide personalised services to thousands of people every day. Sizes will be saved in the retailers' clienteling system to provide the perfect product, no matter where the customer purchased it. By scanning products with their smartphone, customers will receive information about the manufacturer, as well as the carbon footprint, nutritional information and online ratings. Plastic packaging will be strongly regulated and replaced by sustainable materials. Retailers will adopt endless aisle concepts to create a showroom for their products. Products will evolve from mass-produced to tailored-on-demand or personalised products. Fast-moving consumer goods retailers will remove checkouts from their retail spaces to offer customers faster and more convenient shopping experiences.

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[31] Cf. GSMA (2019): The Mobile Economy 2019, www.gsma.com/r/mobileeconomy/.
[32] Cf. European Commission (2019): Developments and Forecasts on Continuing Urbanisation, https://ec.europa.eu/knowledge4policy/foresight/topic/continuing-urbanisation/developments-and-forecasts-on-continuing-urbanisation_en.
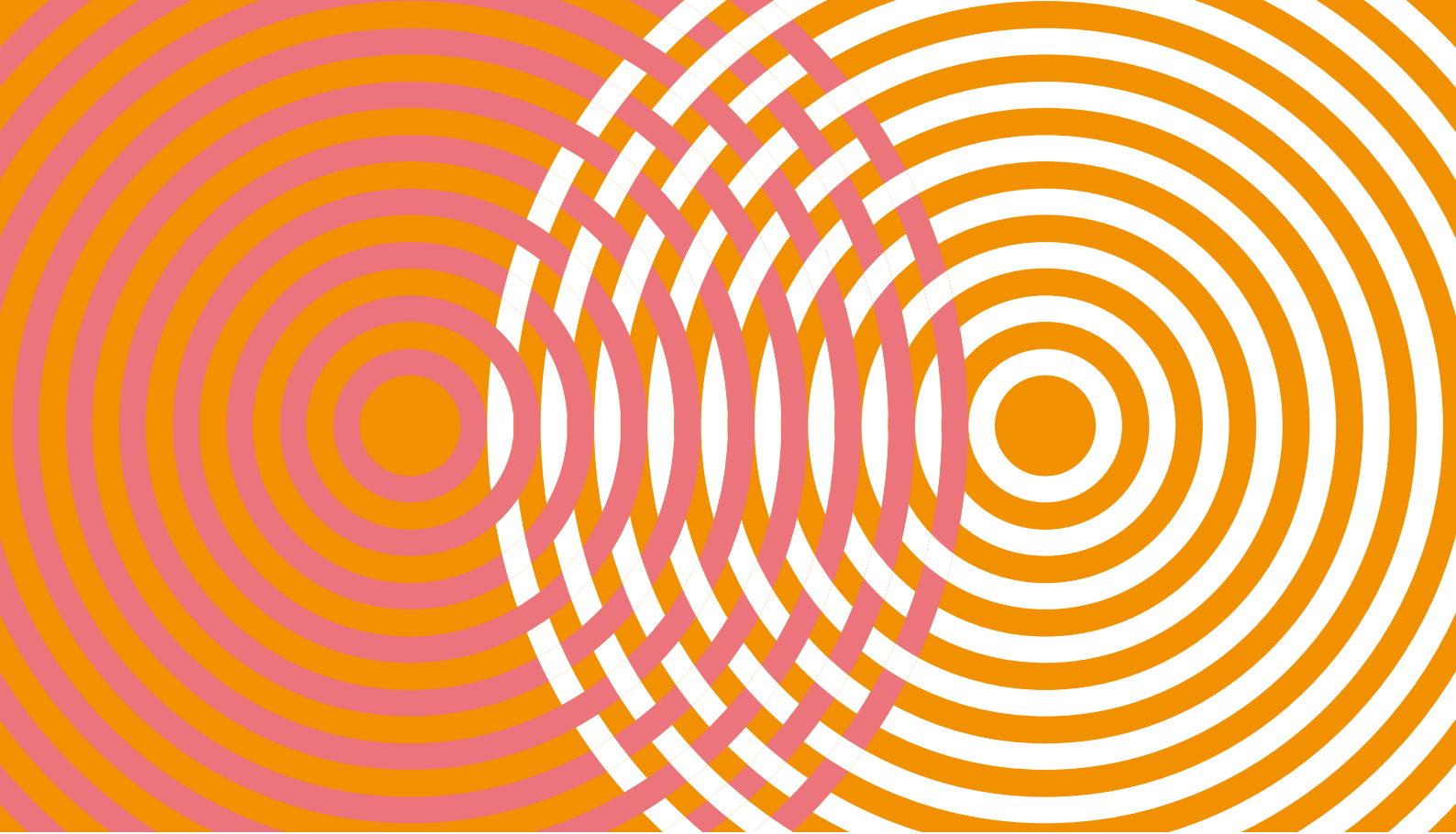
Augmented and virtual reality will be integrated into purchasing processes for more expensive or more flexibly configurable products to combine a hands-on experience with individualised service. Voice assistants will be part of consumers' daily lives because they are integrated into every device. As the median age drops, demand for delivery options and convenience will increase and retailers should keep an eye on sustainable and fast delivery methods that are cost-efficient. The wide diffusion of IoT devices will draw attention to e-waste. Retailers that invest in digital store components should consider the lifecycle of IoT devices and any related maintenance costs from the beginning.

In a world full of possibilities for customers, retailers can achieve success by committing to partnerships. To get fit for future, retailers have to develop convenient, flexible and personalised services that build on their key capabilities. As consumer awareness of climate change rises, demand for sustainable products and services is increasing. Urbanisation is introducing new challenges for delivery methods and making stores smaller. Nevertheless, emerging technologies will support retailers in facing these challenges while strengthening their core capabilities and introducing new business models.

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