

# RETAIL TRENDS AND TECHNOLOGIES

We have been hearing about digitization and the impact it might have on value chain for quite some time. Now in addition to theoretical analysis, we see many commercial products and solutions surfacing at retail events.

In this paper, we'll discuss four retail trends and technologies, which stood out at this year's EURO CIS and NRF events in Düsseldorf/Germany and New York/USA respectively:

**Trend #1 – Intelligent retailing**

**Trend #2 – Security in retail**

**Trend #3 – Connected experiences**

**Trend #4 – Automation**

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## Trend #1: Intelligent retailing

Our GfK FutureBuy study revealed that the number of consumer agreeing to statements like “I am now less loyal to one retailer” is growing year after year (4 percentage points in the last 3 years) especially among Gen Y and Gen Z. These generations have become an important target group because of their growing pay parity. This emphasizes the need for retailers to become smarter and more responsive to changing consumer needs. “Intelligent retailing” includes a whole ambit of technologies like big data, artificial intelligence, machine learning, new sensor hardware and varied solutions stemming from them to help retailers become more smart and efficient.

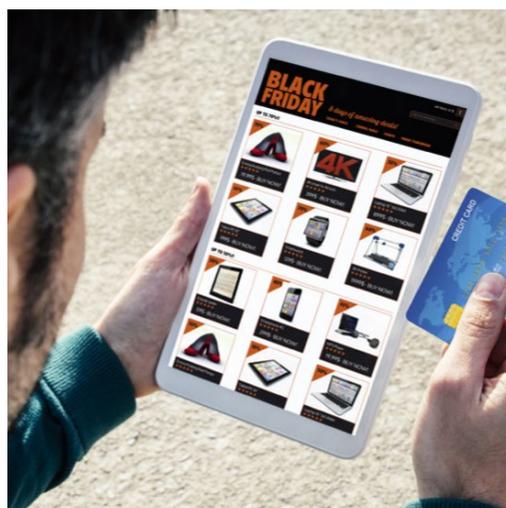
### Dynamic pricing and inventory optimization

Many retail solutions are designed to support dynamic pricing/markdown and inventory optimization helping retailers to efficiently plan their stock and price their products. Simply put, this is about cost savings for the retailer. The **predictive pricing solutions** include the usage of daily/weekly/monthly data and historical trends to forecast best pricing scenarios. These solutions help the retailer to plan promotions and to determine a percentage of discount per product per region.

**Predictive inventory management** and **cognitive demand forecasting solutions** presented at the above mentioned retail events demonstrated a way to optimize and re-order stock at right junctures to reduce holding cost and unnecessary discounting. Using smarter inventory management tools and analytical dashboards can help retailers to make informed assortment strategy decisions.

We observed that traditional retailers are feeling the pressure to participate in promotional events like Black Friday, 11.11, 6/18 etc. even though they are concerned about losing promotional efficiency and effectiveness. Also, our GfK FutureBuy study shows that the key motivation for consumers to shop online is saving costs.

Those reasons emphasize the need for the adoption of intelligent retailing solutions, which might enable retailers to become more efficient in operations and optimize their pricing when and where needed.



*Retail technology: Dynamic pricing for seasonal sales events*

### Facial recognition to optimize floor space

**Advanced facial/gesture recognition and optimized sensors** are other solutions under the “Intelligent retailing” theme. They enable the quick recognition of products for real-time inventory tracking. Image recognition coupled with intelligent algorithms can be used for **heat mapping** within the store: Determining “the most attractive zones” helps with product allocation and shelf stocking. It also allows retailers to optimize floor space, stock only the key products and generate maximum ROI per square meter. Heat mapping can also be used to determine key selling periods, predict queues and help employees through in-store route analysis to reduce shelves stocking time.

## Trend #2: Security in retail

Proactive prevention of product theft and fraud is a priority for retailers. “Security in retail” sheds light on a completely new set of hardware and software solutions, which include electronic tills, RFID tags, wet tags, sensors, enhanced cameras used in conjunction with real-time algorithms.

### Electronic tags for better tracking

**RFID tags and wet tags** are costlier than the paper/cloth-based barcode tags but can be reused and enable better tracking. These tags are optimal for scenarios like self-checkout kiosks and unmanned stores. They can be used along with sensors to determine movement of a product from store inventory to a customer’s cart by means of **sensors/cameras** or using the **in-store scanner/phone scanners**. Smart cameras and sensors can be used for real-time image/gesture recognition to generate alerts and to log anomalies. Similar security solutions can also be applied for warehouses.

### Real time algorithms

Our research shows that the percentage of consumers perceiving return of a product as complicated has reduced from 30% in 2015 to 24% in 2018. However, many frauds are committed in traditional stores during a product return. Especially in scenarios when stolen products are returned against the same value receipt, it is hard to determine whether this is a valid or invalid return. If such products were to have RFID/wet tags used in conjunction with **real-time background algorithms**, such false returns would be detected at the POS terminals during return process and theft could be prevented. Such algorithms can also help to flag anomalous



*Retail technology: RFID tags*

purchases e.g. rounded value purchases (like cigarettes and liquor) which are done regularly or transactions which are registered post store closing time or on weekends.

### **Augmented Reality for retailers**

Augmented Reality (AR) is another interesting technology which can deliver a premium experience as well as security. This is especially true in the context of premium luxury goods stores where e.g. a jewelry item or watch can be projected onto the customer. By this, the customer can verify the look and feel of the product and the retailer can deliver a good experience without the risk of a theft.

Online channels have been growing over the last few years but our research points out that consumers (even Gen Y and Gen Z) are willing to shop in-store if it's an enjoyable experience. Hence, enhancing the purchasing experience by making it easier, secure and priced optimally will be essential.

### **Retail Trend #3: Connected experiences**

A consumer might be shopping in a brick and mortar store, at home or on the go; round-the-clock availability and situational independence are slowly becoming the norm. Our FutureBuy study reveals that consumers regard "social media as an important source of information" and "mobile [as] an important tool for making a purchase" which further demonstrates the increasing importance of these experience drivers. Let's look at different scenarios to describe what it means to provide a connected experience.

#### **Connecting online with offline**

Let's assume different shopper journeys for a consumer named John. He starts his purchase journey at home by using a mobile or tablet to shop online. While browsing, he can use various technologies to help him find what he's looking for. Such as:

- Voice assistant
- A retailer's mobile app
- A chatbot on the store's social media page

Three purchase models are possible for John: If he selects a product online and decides to collect it at the retail store, we would call it "**Click and Collect**"; if he schedules an appointment at the store to test the product before making a decision, he'll be using the "**Click and Reserve**" model. In the

second case a trial room will be reserved for him and a store equipped with smart mirrors and augmented reality will allow John to try out the products. If the size or color doesn't suit him, he can change the item by using the smart mirror and AR features or, the store consultant can be informed by a chatbot assistant. The consultant gets an alert on his digital assistant to help the shopper or provide a demo. This enhances John's overall shopping experience and saves his time.



*Smart mirrors and augmented reality can help shoppers try products quickly*

In case the product is out of stock, a well-connected store with a real-time Enterprise Resource System linked to its warehouse can assist John by telling him when the product is available. If the item is available, John can request to get it shipped to his home – this is the **“Select and Ship”** purchase model. This kind of technology use could eliminate the issue of a limited assortment that traditional retailers experience vs. online retailers.

### **Providing transparency and relevance**

While John is walking down the street near a store, he can receive a message regarding new products or discounts. If he is already an existing customer, he is notified of loyalty offers. This is possible using technologies like **beaconing, Geo-fencing and Near Field Communication (NFC)**. Those Geo-targeting technologies can:

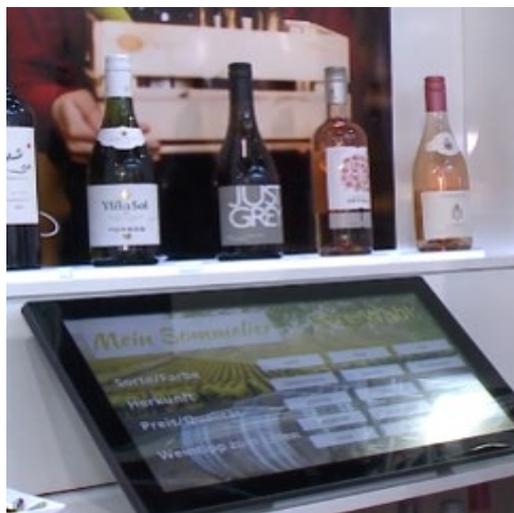
- Create awareness among consumers who are not yet customers
- Up-sell to an existing customer

This addresses the problem for traditional retailers and two main reasons driving consumer towards online channels, which are:

- Finding products or services that they specifically want
- Searching for general information about products and services

### **Electronic Shelf Labels (ESLs) and digital signage**

can help the retailer to efficiently control product information dissemination, pricing and promotions from a central system. Once John is inside the shop, he learns about the product using digital screens and signage. On visual search screens showing the store map, he can search for the product and go to the appropriate section of the store. A seamless connectivity can be a catalyst for better sales.



*Digital signage giving information about the product*

### **Customized products**

If John decides to buy a customized shirt from a retailer, he can use the phone/tablet cameras to scan his measurements and select his preferences to order such a custom fit product.

### **Making shopping fun**

Our research shows that the ability to buy additional items while making a routine purchase is a key driver for the customer to visit a store. If John has a mobile app which contains his shopping list, it frees up time to browse and discover other items to purchase which makes his shopping trip less like a chore. The fun isn't just limited to consumers, but also extends to store employees.

**Gamification** can assist in shelf stocking (making it a game) and can motivate the employees to finish their work in the most efficient way. A fun experience for both the customer and employee contributes to the success of the retailer.

## **Retail Trend #4: Automation**

Automation, whether it is hardware (e.g. autonomous warehouses and store robots/vehicles) or software (like real-time monitoring algorithms, chatbots, etc.), improves efficiency, saves time, adds value and delivers a high-tech shopping experience.

### **If it's mundane, automate it**

When John walks into a store, he is greeted by a "Greet and Guide" in-store robot, which welcomes and asks questions to guide him to the appropriate section of the store. In case John asks a complicated question, the robot generates an alert for a store consultant intervention. Another use case for robots in retail is to automate item stocking and flaw detection. The value proposition for

these robots is to reduce mundane tasks, giving store employees more time for value-adding services like consulting the customer and providing excellent service.

### **Anytime, anywhere assistance**

Chabots are already part of many automated customer support procedures and they can assist shoppers like John inside the store via social media bots. Chabots can answer standard questions, help with recommendations, and schedule an appointment. Thus is automates all the repeated and operational activities. Automation is all about cutting cost on redundant activities and enabling more time for value-added services. Even though it needs an initial capital investment, cost savings and efficiencies are bound to be much higher in the long-term.

### **It's all for the consumer**

In conclusion, retail players who align their strategy to incorporate aspects of intelligent retailing, security, creating connected experiences and automation will end up creating a more efficient, secure and transparent value chain that enhances the shopper experience. Adapting to new retail trends and technologies is essential to satiate the highly demanding, informed customer.

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