



## ZEBRA'S 2017 RETAIL VISION STUDY

In the age of evolving shopper expectations and technology advancements, the global retail industry is in the midst of a profound shift in retail operations. To gain a deeper understanding of retailers' focus, concerns and investment plans, Zebra conducted a global research study across a wide spectrum of retail segments, including: specialty stores, department stores, apparel merchants, supermarkets, electronics, home improvement and drugstore chains. The results of this study are shared in this 2017 Retail Vision Study.

## RETAILERS CITE THE TECHNOLOGY TRENDS SHAPING THE FUTURE

PERCENTAGE OF RESPONDENTS PLANNING INVESTMENTS BY 2021



**2021 70%**

### INTERNET OF THINGS

Giving a digital voice to people, processes and things to improve the customer experience, enhance supply chain visibility and expand revenue opportunities.



**2021 68%**

### MACHINE LEARNING / COGNITIVE COMPUTING

Analytics and predictive models to help retailers personalize customer experiences and enhance inventory demand, forecasting and visibility.



**2021 57%**

### AUTOMATION

Automation for packing and shipping orders, inventory tracking, checking in-store inventory levels and assisting customers in finding items.

# PEERING INTO THE FUTURE

At retail chains around the globe, “smart” products, like smartphone-controlled home thermostats and running shoes that track mileage and correct your form, are increasingly dotting store shelves — from Paris to Peoria.

## TOP DRIVERS FOR TECHNOLOGY INVESTMENTS

- 1 Enhance the customer experience
- 2 Generate revenue
- 3 Reduce operating costs
- 4 Keep pace with competition
- 5 Improve inventory management

## TECHNOLOGY INVESTMENTS BY 2021: EMPOWERING WORKERS



**87%** **Mobile point-of-sale devices** to scan and accept credit or debit payments anywhere in the store



**86%** **Handheld mobile computers with scanners** to read barcodes for pricing and availability



**85%** **Tablets** to engage with shoppers and provide more detailed product information



**78%** **Kiosks or stationary information terminals** for pricing and availability information

It's part of a larger shift. Just as the Internet of Things, an ever-growing network of web-enabled physical objects, is adding a new dimension to consumer products. It's also redefining how retailers are bringing that very merchandise to market. Indeed, “smart” devices, powered with sensors and network connectivity that collect and exchange data, are weaving unprecedented business intelligence throughout the retail ecosystem, from the warehouse to the store floor.

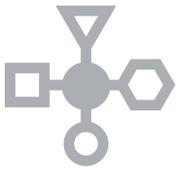
Retailers are investing in IoT technologies — from beacons that beam shoppers customized coupons to radio frequency identification tags that track inventory — to simplify, enliven and customize the shopping experience, generate revenue, and reduce costs, revealed the study. They're embracing IoT platforms to transform real time, visibility-driven data throughout the supply chain into actionable insights.

The shift to IoT technologies is an industry imperative to keep step with the shopping habits and expectations of consumers reshaped by the tech revolution that's still unfurling. Digital disruption — most profoundly, online shopping and smartphones — has birthed ever connected, savvy shoppers who have the globe's grandest mall at their fingertips.

And retailers, whether they realize it or not yet, are now largely catering to Millennials — who have eclipsed Baby Boomers as the world's largest shopping group and will comprise 75% of the global workforce by 2025.\* The key takeaway here: This group born between 1980 and 1995 mark the first generation of digital natives, for whom technology is second nature.

When it comes to the Internet of Things, stores are paying attention: Nearly 70% of retail decision makers are ready to make changes required to adopt IoT. Already, 21% percent of respondents have implemented IoT and another 27% are planning to deploy within a year.

\*Edelman



## GETTING 'PHYGITAL'

While online and mobile commerce have transformed the shopping experience, 91% of all retail sales are still generated in brick-and-mortar stores.\* As a result, merchants are investing in improving the customer journey via the digitization of the in-store experience, getting “phygital,” so to speak.

# 72%

of retailers plan to reinvent their supply chain with real-time visibility enabled by automation, sensors and analytics.

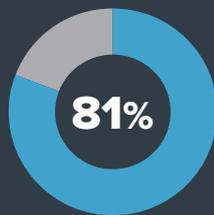
Technology is playing a greater role in supplementing the human touch to outsource mundane, in-store tasks, freeing up sales associates to offer shoppers better customer service — more critical than ever amid dwindling foot traffic, as consumers can buy most anything online.

Retailers are on a mission to streamline the shopping journey for consumers, and mitigate shopping pain points that have long bedeviled store associates, like tracking down inventory. To that end, retailers surveyed are placing a premium on implementing in-store IoT solutions such as sensors on shelves, automated inventory verification, as well as cameras and video analytics.

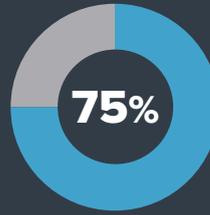
Stores are banking on the shift to these “phygital” upgrades to provide an unprecedented, real-time picture of the actual inventory in the store — whether it’s on the shelf or in the back room, while upgrading the customer experience.



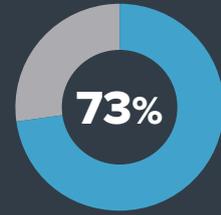
### RETAILERS' TECHNOLOGY INVESTMENT PLANS: 2021



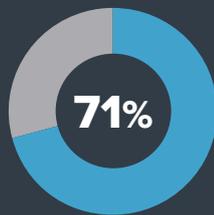
Security sensors



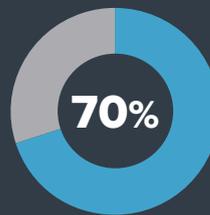
Sensors for tracking status of inventory for sale (temperature, force, etc)



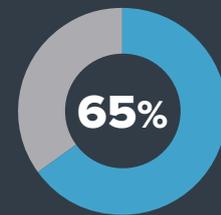
IoT device and network monitoring



Sensors for tracking customer footpath



Beacons for location-based marketing



Automation and smart sensing for inventory management and planogram compliance

\*U.S. Census Bureau



# THE PERSONALIZATION PUSH

Retailers are also turning to IoT technologies to personalize the shopping experience. According to the survey, 75% of stores will not only know when specific customers are in the store, but will also be able to customize the store visit for them by 2021.

Topping retailers' personalization goals are knowing when specific customers are in store; knowing where customers are in the store; and customizing shoppers' store visits. To make that happen, retailers are betting on location-based technologies to woo consumers at their precise moment of need. Merchants surveyed ranked locationing platforms, such as sensors that track consumers' footpath throughout the store and beacons that trigger in-store offers, as their key technology budget goals.

Retailers have been testing beacons as a means to personalize shoppers' in-store experience by communicating with them on what's become another appendage: their smartphones.

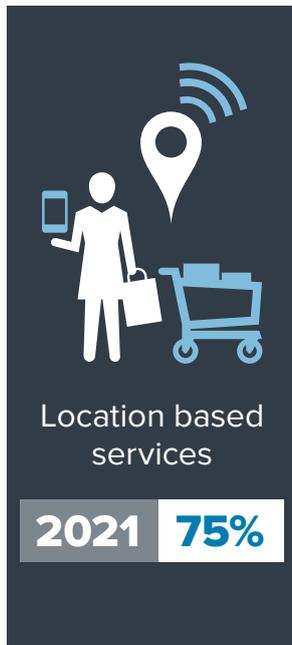
These sensors are embedded throughout a retail store's digital touch points like shelves, signs and product displays and can interact with mobile devices using low-energy Bluetooth signals. They're designed to send shoppers contextually relevant in-store offers, like a special discount on a new 16-carat gold activity tracker

for that fashionista fitness devotee who's been lingering by the yoga display.

Stores are increasingly turning to micro-locationing platforms to capture more data, accuracy and insight, identify which aisles and products customers prefer, and analyze the in-store dance — from lingering at one end-cap display of hats to trying on seven wrap dresses in the fitting room — that leads to a purchase, or doesn't.

The goal is to generate concrete, actionable insights on customer shopping habits and buying patterns by tracking customers' movements throughout a store, and note where people tend to linger. Retailers can leverage this behavior data to make smarter merchandising and marketing decisions, like boosting inventory levels of hot-selling products or measuring the effectiveness of displays.

So when sensors detect a poorly trafficked area in a store, for example, that real-time data insight alerts associates to merchandising missteps.



## PERSONALIZATION VIA IoT LOCATIONING TECHNOLOGY



2016 2021



# ADAPTING TO A MULTICHANNEL SHOPPING LANDSCAPE

The path to purchase is becoming more complex amid the ever-burgeoning growth of online and mobile shopping. As a result, inventory accuracy, which is foundational in retail, is more critical than ever as products from both brick-and-mortar and digital channels flow through the pipeline.

## 90%

Superior omnichannel support requires 90% inventory accuracy or greater.

Retailers are adopting technology solutions to heighten merchandise visibility throughout the supply chain, from the time inventory is shipped from the warehouse and received in a store's back room to when it's stocked and replenished on the sales floor.

According to retailers surveyed, the key sources of customer dissatisfaction today are out-of-stock merchandise, and the same product available for less at another retail store.

That comes as little surprise amid the rising expectations of today's empowered consumers, who can tap into virtually every retailer's stockroom from their smartphone to search for products and compare prices, as eight out of 10 consumers use them as in-store shopping assistants.\*

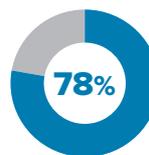


### RETAILERS RATE FACTORS IMPACTING CUSTOMER SATISFACTION

- 1 Out-of-stock (Empty shelf, wrong size)
- 2 Same product available cheaper at another retailer
- 3 Desired item not found

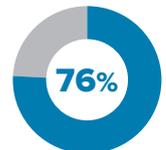


### HOW RETAILERS ARE CREATING A SEAMLESS SHOPPER EXPERIENCE



Rate importance of integrating e-commerce and in-store experiences as important/business critical

Connect customers' activities online with what they do in store



\*Deloitte



# MOVING TO A SEAMLESS CLICK-AND-COLLECT MODEL

Digital shopping has given rise to new consumer buying patterns, illustrated by the growing popularity of buy online, pickup/return in store.

And new click-and-collect models continue to emerge. There's curbside pickup, retrieval of online and mobile orders from in-store lockers, and some commuters can even pickup their groceries at train stations.

Not all of these click-and-collect perks will take flight, but one thing is clear: buy online, pickup in stores is here to stay. One need only look to the recent holiday shopping season, when merchants generated a disproportionate chunk of their annual sales, as evidence of that.

While retailers routinely boost their staffing levels to handle the make-or-break selling season, in 2016, the big story was that much of that hiring surge was devoted to filling online and buy online pickup in store orders.

As the rise of online shopping has trained consumers to demand unprecedented convenience, retailers today must be nimble enough to serve their multichannel shopping journeys seamlessly.

Retailers surveyed cited the integration of e-commerce and in-store experiences, and fulfillment and delivery of online and in store purchases, as critical strategic goals.

To that end, they're migrating from siloed supply chain processes to unified commerce models with end-to-end, digital and brick-and-mortar enterprise visibility of workers, store associates, shoppers and merchandise. In addition to warehouses, stores are also equipped to double as distribution centers.

**65%**  
Exploring innovative delivery services such as deliver to where the customer is: workplace, home, parked car

## OMNICHANNEL CONVERSION AND FULFILLMENT



2016 2021



# THE HIGH-TECH MAKEOVER OF INVENTORY MANAGEMENT

Merchants surveyed are investing heavily in reinventing the supply chain with a focus on tracking the status of inventory for sale — the heart of any retail operation.

They're budgeting for digital upgrades, for example, that enable automated, real-time inventory visibility via IoT technologies such as RFID. In fact, over 70% of retailers surveyed plan to provide, or are currently providing, item-level RFID technology.

After being implemented by retailers in fits and starts since the dawn of the Millennial, RFID's time has come. In what's been called the next generation of the barcode that was long cost prohibitive, RFID platforms have dropped in price, achieved wider global standardization and as result, retail adoption has soared.

But the bigger impetus for retail implementation is the technology's potential return on investment. As an

industry, retail inventory accuracy hovers at about 65%, studies show. By contrast, RFID platforms can boost inventory accuracy to 95%, while out-of-stocks can be reduced by 60% to 80% with item-level RFID tagging.

Other payoffs for retailers include reduced inventory-related costs. For example, apparel and footwear retailers have reported inventory labor reductions of over 75% by moving from manual to RFID automated item counting.

What's more, item-level RFID has generated increases in the number of sale items per transaction by as much as 19%, and a rise in the number of transaction by as much as 6%.

## UNDERSTANDING THE COST OF INVENTORY

**\$1.1 TRILLION**

Worldwide cost of inventory distortion, including overstock, stock outs and shrinkage\*

**10%**

Reducing stock-outs and overstocks can lower inventory costs by 10%\*

## PLANS TO AUTOMATE INVENTORY VISIBILITY

### ALERT OF STOCK OUTS

49%

87%

+38%

### VIDEO MONITORING OF INVENTORY

29%

76%

+47%

### PRODUCT LOCATORS

38%

78%

+40%

### ITEM-LEVEL RFID

26%

75%

+49%

### AUTOMATED INVENTORY VERIFICATION

35%

82%

+47%

### SENSORS ON SHELVES

24%

69%

+45%

2016 2021

\*McKinsey & Company



# A DEEP DIVE INTO DATA

Merchants are also investing in business intelligence and analytics technology solutions to take data insights to new heights.



**73%**  
of retailers rate managing big data as important/business critical.

While retail data analysis is nothing new, the reams of consumer information generated in the era of digital shopping, along with the rise of technology equipped to handle and analyze the surge, is recasting how retailers determine what to sell, how to sell, what's selling, what's not and why.

Digital data analysis is still in its infancy, but its payoff is promising: Companies that integrate data and analytics into their operations are poised to generate productivity and profit gains that are an estimated 5% higher than competitors that don't.\*

Hence, it stands to reason that 58% of retailers surveyed are budgeting for big-data solutions for storing and analyzing IoT generated data. When asked what business

intelligence and analytics technologies lead their strategic goals, retailers ranked market-basket analysis, customer segmentation and centralized customer data and intelligence as their top tech initiatives.

Market-basket analysis, for one, is a timeworn modeling technique used by merchandisers to decipher which types of products shoppers are more apt to purchase together. It's a wide-ranging tool, as basket analysis offers insight into consumer patterns, preferences and shopping behavior, regional trends, as well as reveals the relationship between products for sale. Combined, these insights inform factors from store layout to marketing. And now the modeling technique is being automated by big data.

Sophisticated analytics platforms are transforming reams of market-basket data into insights ripe for actionable merchandising strategies, like a supermarket placing snacks next to baby wipes during the football season, for example, when Dads are shopping for both their kids and their couch-potato stash for the game.

## BUSINESS INTELLIGENCE INVESTMENTS BY 2021



**79%**

Cameras and video analytics for operational purposes



**79%**

Loss prevention and inventory visibility elements enabled by operational technology



**78%**

Software analytics for loss prevention, price optimization



**77%**

Big data solutions for storing and analyzing IoT generated data



**75%**

Predictive analytics



**75%**

Cameras and video analytics for customer experience



**72%**

Visual analytics for making sense out of IoT data



**72%**

Cognitive computing to drive optimizations and insights

\*McKinsey & Company



## A GLOBAL VIEW

Around the globe, retailers are investing in IoT technologies to redefine their operations and the shopper experience. Merchants are reinventing their supply chains with upgrades that enable automated, real-time inventory visibility via IoT, such as RFID, which can boost inventory accuracy levels to as high as 95%. Their emphases and progress across a swath of retail tech initiatives vary per region.

**79%**

Plan to invest in automated inventory verification

### NORTH AMERICA

In North America, more retailers are investing in IoT technologies such as automated inventory verification and sensors on shelves, than their global counterparts.

### LATIN AMERICA

Fewer merchants in Latin America can customize stores today than in other parts of the world, but the region is putting a big emphasis on technology to personalize and enhance the in-store experience.

**85%**

Plan to use technology to customize the store visit

**75%**

Will soon know where specific customers are in their store

### EUROPE

Retailers in Europe are investing in location technology. Today, 36% know when specific customers are in a store and that number is expected to grow exponentially over the next five years.

### ASIA PACIFIC

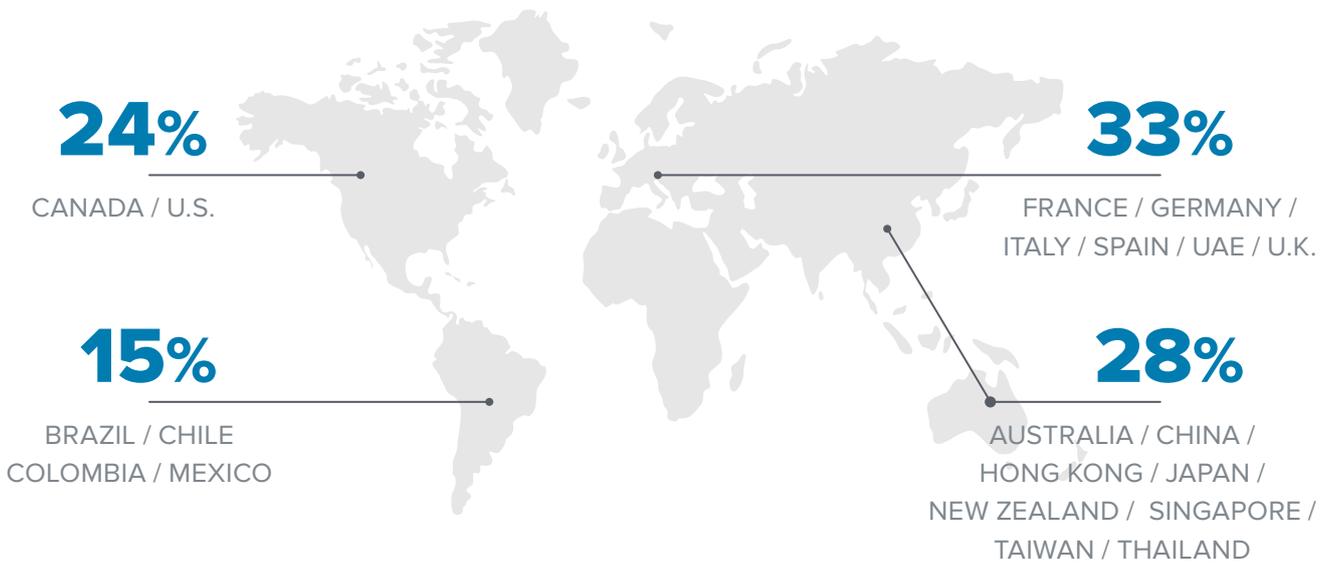
Retailers surveyed in the Asia Pacific Region expect more shopping to migrate from brick-and-mortar stores to online channels in the future than their international brethren.

**79%**

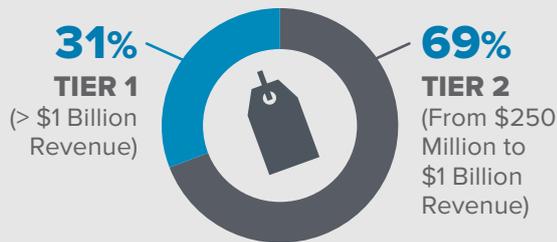
Plan to support buy online, pickup at third-party location

# ABOUT THE STUDY

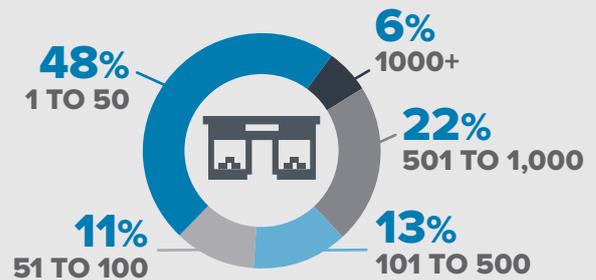
## RESPONDENTS BY GEOGRAPHY



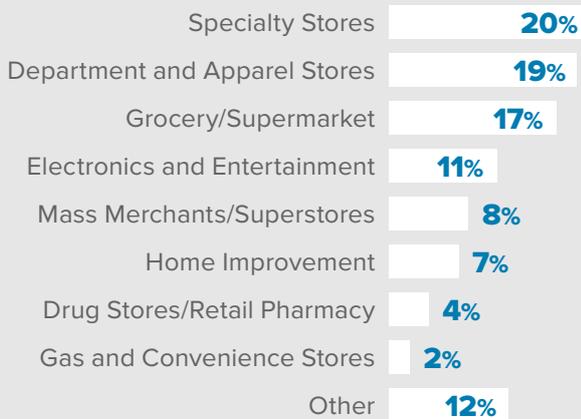
## BY REVENUE



## BY NUMBER OF STORES



## BY SEGMENT



## RETAIL AREAS





## REINVENTING RETAIL

Retailers are investing in the IoT, a burgeoning network of physical objects with web connectivity, to survive and thrive in the era of digital commerce. They're doing so to meet the heightened demands of today's savvy, empowered consumers, who have limitless choice and price transparency online. These include Millennials, digital natives who are now the world's biggest buying group.

Merchants are turning to IoT technologies to simplify and enhance the store experience, reduce operating costs and beget new revenue streams. To that end, they're automating manual processes, such as implementing sensors on shelves to reduce out-of-stock inventory, a major source of shopper frustration.

Retailers are also tapping technology to court shoppers with individualized attention by investing in IoT data solutions for a granular understanding of their customers, like a shopper lingering in the sportswear department, who might be sent a coupon via a beacon sensor for her favorite clothing brand.

The makeover of retail operations platforms is critical to handling the deluge of products traveling through the retail supply chain from both brick and mortar and online streams. It's one that must also serve today's multichannel shoppers and the growing appeal of click-and-collect models.

### ABOUT ZEBRA TECHNOLOGIES

Zebra Technologies offers retailers industry knowledge, consumer insight and mobile technology solutions to help merchants implement successful omnichannel strategies with insight into store operations, associates, assets and inventory, shipment and receipts.

For more information visit [www.zebra.com/retail](http://www.zebra.com/retail)



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