# WIZELINE

## Data, Cloud, & Digital Automation: Supercharging the Retail Customer Experience

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# Executive Summary

**M**ore than ever before, retailers face the challenge of differentiating themselves from the competition and keeping pace with the allure and convenience of ecommerce. This means taking a renewed direction toward improving the customer experience (CX) and aligning with consumer demands, amplified by rapidly evolving end-user technology.

Luckily, technology is also helping retailers defuse those challenges. By adopting digital automation driven by data and cloud solutions, savvy retailers can carve out a competitive edge. There have been numerous successes in the application of automation to backend warehouse and supply chain operations, but not much noise about the huge benefits of customer-facing digital solutions.

This white paper uncovers how automation can solve the challenges retailers face in evolving their customer experience, offering insightful recommendations for leveraging data and cloud technology as a powerful tool for enhancing the retail customer experience.

# Introduction to Retail Automation

Computer automation has been available since the 1960s, yet there is still a perception that the technology is "next-gen" or far from mature. In fact, automation software is already prolific across multiple enterprises and verticals, considerably changing the way companies are doing business.

In retail, automation has been an attractive prospect due to the potential benefits: lower labor costs, a boost in productivity, and, most importantly, happier customers. These benefits come as a result of software solutions, ecommerce sites, artificial intelligence (AI), and data science, as well as hybrid versions of these technologies.

Retail giants like Amazon and Walmart have the resources to apply automation on a massive scale. However, most retailers are opting to automate individual aspects of their business, instead of undertaking the difficult task of a full enterprise automation.

Digital automation is the first step to capitalizing on this opportunity. With an initial solution, retailers have been able to better measure KPIs and optimize the technology's positive impacts, making it easier to transition into subsequent implementations.

Customer-facing retail automation includes self-service checkouts and ecommerce payment or checkout processing. However, there are numerous examples of more innovative solutions being applied to specific areas of the customer journey, each highlighting the range of possibilities available to retailers today.

Growing at a CAGR of **10.96% from 2017**, the global retail automation market value is expected to reach **USD$18.99 billion by 2023**.

Source: Research and Markets

"Rather than embarking on full enterprise automation, retailers are first opting to automate individual aspects of their business."

# Customer Engagement Challenges for Retailers

Across the global retail industry, stakeholders face a variety of customer engagement challenges emerging as a result of evolving consumer trends. Here are a few of the most impactful problems currently faced by retailers of all sizes.

## Creating repeat business and building customer loyalty

Customer satisfaction in retail is everything. Retailers consistently face the challenge of maintaining customer loyalty through enhanced experiences.

Consumers today want complete flexibility over how to order and receive their products, whether online or in store, basing their experience on how smoothly that process goes. They demand convenient, digital-first experiences that can meet their needs and exceed their expectations at every turn, leading to a consumer preference for retailers that are leveraging technology to provide a better customer experience.

| 82% | Americans consult online reviews when purchasing something new. |
|---|---|
| 46% | Feel that reviews make them more comfortable. |
| 45% | Feel that reviews make companies accountable to their customers. |

Source: Pew Research Center.

## Increasing and maintaining visibility across channels

In the digital age, retail is now everywhere. The Internet has enabled brands to become globally-recognized household names, making overall market visibility a challenging hurdle to overcome in this competitive environment.

The Internet has also become a soapbox for satisfied and disgruntled shoppers alike, customers have easy access to a digital yardstick by which to measure brands against the competition. The challenge now comes down to providing an enjoyable, memorable customer experience (both offline and online) that leads to positive shopper feedback and an organic improvement in visibility.

## Utilizing and understanding data

Retailers are collecting a significant amount of customer data, from personal information and purchase histories, to taste preferences and buying patterns. However, they often don't know how to gain value from this data, or simply lack the tools and resources to do so.

The challenge lies in using that data to personalize the customer experience, tailor communications and special offers, and predict which products might be of interest to which customers—a challenge that can only be addressed through the use of technology.

"Customers demand convenient, digital-first experiences that can meet their needs and exceed their expectations at every turn."

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# Automation's Role in Solving These Problems

When implemented thoughtfully and correctly, digital automation and data-driven solutions have plenty of benefits for retailers and their customers.

- They create a consistent brand focus and customer perspective
- They lower costs and offer an impressive return on investment (ROI)
- They level the playing field for small and medium-sized retailers
- They free up time for workers to focus on higher-value tasks, such as sales and marketing.

A robust and reliable automation solution can incentivize customers to return to the store (or site) again. It can help to personalize their experience from end to end, or actively communicate with customers when a new product or promotion may be of interest. This solves the problem of generating repeat business and customer loyalty. Once customers start backing a brand and sharing positive experiences, the brand's visibility will begin to increase.

Once an initial automated solution is implemented, artificial intelligence (AI) can be applied to these systems to create intelligent automation services (IAS), such as chatbots, which have the power to transform the customer experience even further. With access to data, AI and IAS can identify things that human associates may not notice about customers, resulting in insights that enable retail brands to take innovative approaches to customer engagement.

## The philosophy behind successful customer experience automation

Wizeline has determined three core principles that should be applied when developing any form of customer experience automation.

1. **Reflect excellent human experiences in digital form.**
An unnatural question or request will still feel unnatural when digital. It's important to consider the entirety of a customer's experience and study their real needs to provide more natural digital interactions.

2. **Automate transactional tasks and ensure help is available for more complex requests.**
Customers appreciate and enjoy doing transactional things faster with automation, like finding a specific product and then purchasing it. When they need more in-depth help, a knowledgeable person should be within reach to provide clarity and guidance.
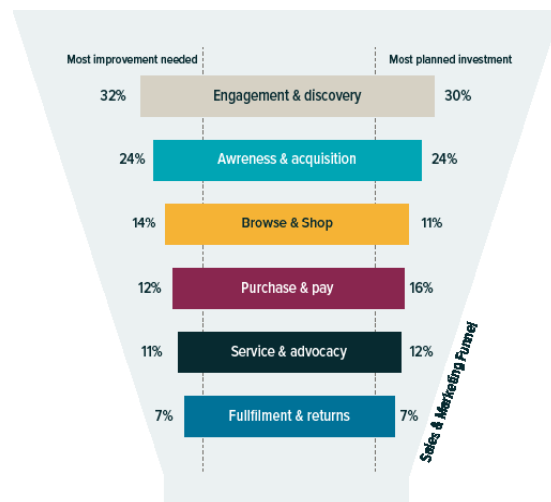
3. **Support, rather than replace, employee and customer interactions.**
While automation tends to reduce total interactions, employees should have better and more meaningful interactions with customers. There is an opportunity for retailers to use customer data to drive these interactions. Making interactions easier for employees is just as important as improving the experience on the customer side, and enriches the experience for all.

These principles should form the DNA of a successful automation project, allowing companies to focus on the first stage of implementing such a solution: determining exactly what needs to be automated.

The following use cases shed light on some of the practical applications of the technology being conceived and used today, highlighting the simplicity of leveraging data, cloud, and automation solutions to generate successful customer engagement.

**Top consumer experience improvements and investment areas**



| Most improvement needed | | Most planned investment |
|---|---|---|
| 32% | Engagement & discovery | 30% |
| 24% | Awreness & acquisition | 24% |
| 14% | Browse & Shop | 11% |
| 12% | Purchase & pay | 16% |
| 11% | Service & advocacy | 12% |
| 7% | Fullfilment & returns | 7% |

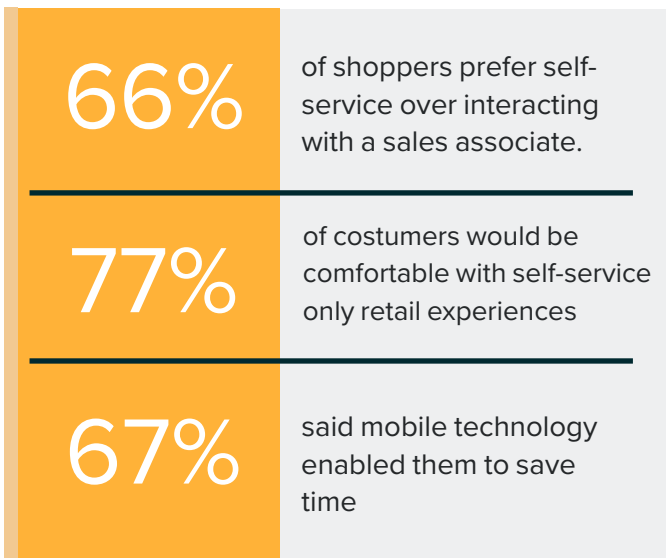Sales & Marketing Funnel

Source: Forbes

# Enhancing the Retail Shopping Experience

One of Wizeline's recent Proof of Concept (PoC) applications involved a self-service digital solution to streamline in-store cell phone purchases for a Fortune 500 retail company.

The company faced a common problem: customers that bought a cell phone in stores faced a 30-minute shopping experience, on average. Wizeline's solution reduced that time by 40 percent, to an average of just 18 minutes or less.

> By 2021, **87% of retailers plan to invest in mobile PoS devices** to process sales anywhere in store. **85% want to invest in tablets** to engage with shoppers and provide more detailed product information.

Source: Zebra Tecnologies

**66%** of shoppers prefer self-service over interacting with a sales associate.

**77%** of costumers would be comfortable with self-service only retail experiences

**67%** said mobile technology enabled them to save time

Source: SOTI survey 2018

## Purchasing power at the customer's fingertips

The final concept was an automated virtual assistant on a digital tablet, designed with a user-friendly interface that expedites the purchase process. Within the solution, customers can enter their personal data, outline their plan requirements and handset preferences, and choose from product recommendations based on the information provided.

The system prompts people to select the primary usage requirements of their preferred handset, such as music, photography, social media, gaming, entertainment, or business. It then asks them to choose from a range of apps to include in the phone plan: WhatsApp, Facebook, Messenger, Twitter, Gmail, LinkedIn, Netflix, Spotify, YouTube, and Instagram.

Finally, they are asked to select their preferred screen size, camera quality, storage and memory requirements, battery life, and manufacturer brand.

The customer is then prompted to input or register their client number and scan their fingerprint (a feature that was not entirely possible with the tablet's capabilities, but could have been implemented with an additional scanning device). Once all of this information has been entered, the system presents them with a range of handsets based on their personal preferences, along with a choice of payment plans.

An in-store automated system like this is not limited to cell phone purchases. It can be used to improve the buyer journey for any type of product with various specifications or features, such as laptops, televisions, cameras, and even clothes or furniture.

## Expected results and ROI

This digital tablet experience was designed to reduce the duration of the cell phone shopping experience, resulting in more satisfied, loyal customers. It also enables lower staffing requirements than the company's current hiring model and is expected to drive more purchases of promoted products.

Following a user experience workshop, Wizeline found that none of the participants reported any frustration with the prototype. They expressed an overall positive experience, along with a willingness to use the solution individually. In the end, 40 percent of the participating users decided to purchase the cell phone and plan that was suggested by the solution.

By 2021, **87% of retailers plan to invest in mobile PoS devices** to process sales anywhere in store. **85% want to invest in tablets** to engage with shoppers and provide more detailed product information.

Source: Zebra Tecnologies

In a retail environment, a digital solution like this can impact the company's ability to serve more customers in any given day, and even concurrently. This means that the company's initial investment was expected to be rapidly recouped within the first year of implementation. In fact, Wizeline projected that payback would occur in just five months, with nearly 200 percent ROI being accrued within year one.
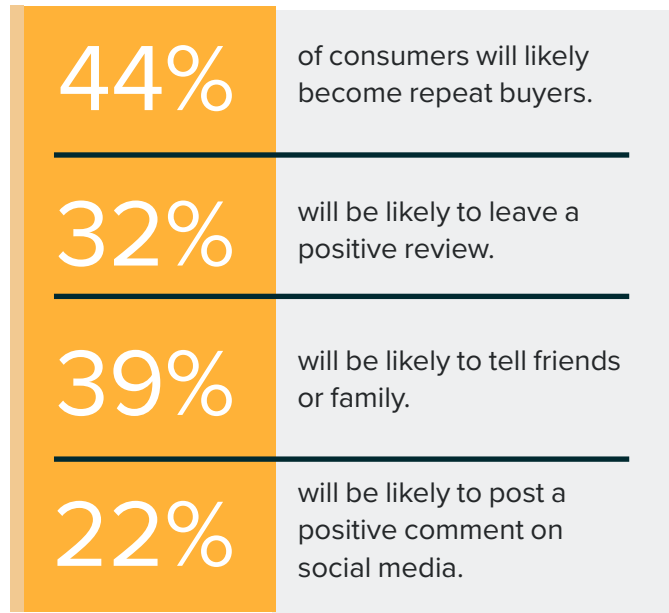
## Key Findings and Recommendations

Digital shopping solutions and automated virtual assistants have massive potential to positively impact customer experience. However, the agile development required to create such a solution relies on accurate baseline measurements of customer satisfaction in order to plan and build a data-driven, customer-focused product that creates profit.

With this particular innovation, the company's existing data services were useful for establishing that initial baseline, making it easier to accommodate the delivery of this digital solution without heavy modification. With that in mind, our first recommendation is that retailers begin measuring customer satisfaction at scale, before running similar experiments. This includes implementing data solutions, such as data lakes and data warehouses, which we'll get to in a bit.

Secondly, a virtual assistant solution requires a number of initial innovation sprints and tests in order to validate its viability. With the introduction of a functional prototype to one or two brick-and-mortar locations, it is possible to accurately measure its impacts on staffing, customer engagement, promotions, and overall customer experience.

**After a personalized experience:**

| | |
|---|---|
| **44%** | of consumers will likely become repeat buyers. |
| **32%** | will be likely to leave a positive review. |
| **39%** | will be likely to tell friends or family. |
| **22%** | will be likely to post a positive comment on social media. |

Source: 2017 Segment study

These sprints should be continued in order to deliver the final solution and consequent enhancements. The iteration process is necessary to design the most optimal automated solution for the ultimate shopping experience. By applying this approach, retailers can evaluate opportunities for further innovation, along with the possibility of implementing similar applications across appropriate lines of business.

**Would find an in-store visit more exciting if the retailer used technology**
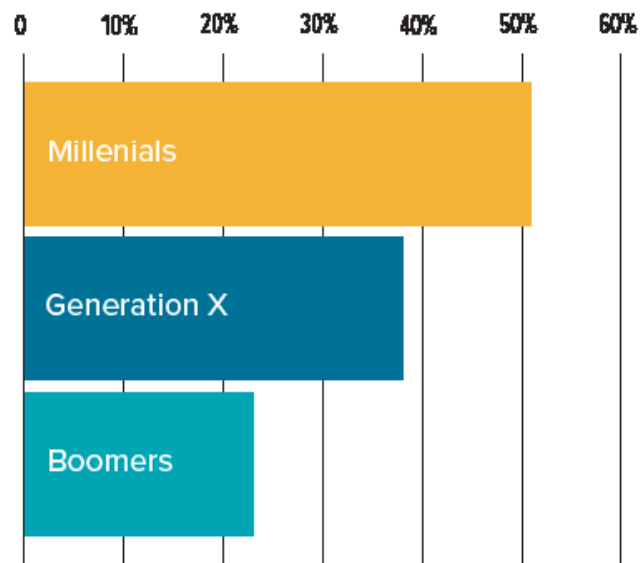
# Using Automation to Identify Consumer Patterns

Automation solutions already have the power to leverage existing data to pinpoint consumer trends and buying patterns, enabling retailers to make better decisions about product development and marketing. This was Wizeline's mission objective behind another proof of concept that was outlined for a Fortune 500 sports clothing brand.

The PoC was designed to give the company's product line managers the ability to identify how fashion trends and consumer patterns were evolving day to day, allowing them to accelerate the development of new products and clothing categories. The solution enhances the company's customer experience by enabling them to develop and stock new garments faster, giving customers access to trend-setting products before the competition.

## Addressing the Problem of Too Much Data

When it comes to deciding which products to develop and launch, the company uses multiple sources and forms of data in the decision-making process. When data is spread across silos like this it creates the risk of insights based on biased and incomplete information, which can lead to product suggestions being sent upstream too early.

The team had to figure out how to consolidate these data silos to ensure they had the complete picture before making decisions.

Using advanced data analytics, the loading, processing, and transformation of this information can be automated, and the addition of machine learning models helps create intelligent insights that reduce bias, minimize effort, and limit the number of data silos being used.

## The solution: automate the market research process

Wizeline proposed the development of a web-based application that combined a mix of machine learning algorithms and intelligent automation to analyze images of people and their clothing. Using Deepomatic image recognition software, the system was designed to detect the type and color of the garments in each image. The project leveraged a vision AI solution to detect the person's gender. The goal of the project was to reduce the time and human resources required to manually research fashion trends and buying patterns, while also providing new insights that could help stakeholders make better decisions and accelerate the product life cycle.

With constant streams of data and pictures flowing into the application, machine learning algorithms integrated into a digital platform were able to maximize value and provide intelligent insights. This would enable key stakeholders in the product teams to translate the insights into new product category development.
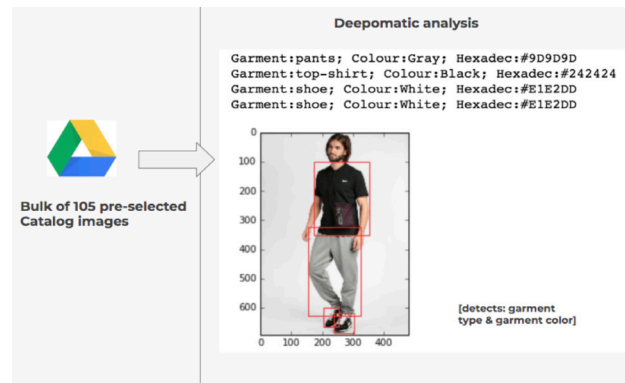


When adding functionality to include photographs from additional sources such as Instagram, Pinterest, and online catalogs, the tool can become much more powerful at detecting bleeding-edge fashion trends, further bolstering market intelligence for product development teams.

Automated tools like this one allow brands to get ahead of the curve, reducing the extensive market research normally required in the fashion industry. For retailers competing against fast-moving, highly visible brands, the insight provided by this solution can help level the playing field. Innovations like this allow time and resources to be funneled into higher value tasks while also using data predictively to support customer demands, resulting in an improved customer experience.

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# Adding Value by Migrating to the Cloud

Customer expectations are high across most of the value chain, retailers have to reimagine, adapt, and transform all parts of their business. Cloud services allow retailers to constantly revolutionize the entire value chain, enabling retailers to scale infrastructure automatically, get deeper insights, and work more collaboratively.

Accelerating your business starts by removing everything slowing you down, that includes legacy apps that are expensive and difficult to maintain. With cloud solutions, you can build new apps rapidly, in hybrid and multi-cloud environments, with security built in to achieve agility in the business. This change can modernize existing apps and offer flexibility, faster time to market, agile service delivery, while reducing operational costs.

Online marketplace, Etsy, carries more than 65 million items from more than 2.5 million sellers on its website. When Etsy moved its computing infrastructure to Google Cloud Platform in 2017, it was partly motivated by an interest in ramping up experiments involving machine learning, with the potential to improve its customer experience.

These experiments included determining how best to sort product reviews or how to alert potential customers when a particular item might be snapped up by someone else, as well as experiments to encourage more people to buy the handmade and vintage goods available on its website.

## Cost-effective computing power

These experiments were consuming a lot of computing power. Before moving to the cloud, Etsy had to purchase the servers and computing power it needed to run its website, which made it difficult to plan for the tests engineers wanted to run. Buying additional computing power with the intent to run future tests simply was not cost effective.

By migrating to a cloud infrastructure, Etsy can now rely on Google Cloud to supply its necessary computing power, instead of relying on its own infrastructure. Before the move, creating and running data science experiments could take several days or weeks. Now, they can be done in a few hours.

The cloud allowed Etsy to cut contracts with two data centers and decrease its number of servers from 3,000 to just a few hundred, effectively reducing operational costs.

## Increasing engineering capacity

Another benefit was that Etsy engineers who were previously in charge of maintaining back-end servers and hardware infrastructure were now free to work on other tasks, such as developing new apps, IT systems, or AI projects that directly benefit customers and add more value for the business. Approximately 75 of Etsy's 500 engineers were reallocated from infrastructure management to coding and software tasks that have a direct impact on customer experience initiatives such as the website.

## Experiments to improve the shopping experience

Etsy software engineers have tested different nudges on the website to see which ones might be most effective in persuading customers to buy a product. A nudge could be a box near an item in a customer's shopping cart that shows how many people are interested in that product, or how many also have that item in their cart, or how many of the items are left.

The team is also experimenting with product reviews, testing whether customers are more likely to buy a product if the reviews they see first are negative, which some shoppers could interpret as honest feedback.

**"Our customers don't care if we're the best in the world at supporting hardware. They care about us having the best marketplace, with the functionality and features they want."** - Mike Fisher, Chief Technology Office at Etsy

# Implementing a Data Warehouse Solution

Retailers that want to digitally transform and automate their offerings and customer experience need a data platform strategy to achieve their goals. Legacy data warehouses make it difficult to enable digital transformation for a few reasons. They cannot keep up with data growth, there are expensive licenses, and ownership renewal costs, increasing operational overhead, advanced analytics challenges, and lack real-time insights.

Having a modern data warehouse allows retailers to focus on generating intelligence from data and driving business innovation and stellar customer experiences, rather than managing complex operations and infrastructure.

## Data Warehouse

The two most popular forms of storing data are data lakes and data warehouses. Data warehouses are used to analyze archived structured data, while data lakes are used to store big data of all structures.

|  | Data Warehouse | Data Lake |
|---|---|---|
| Type of Data | Uncunstructed and structured data from various company data sources | Historical data that has been structured to fit a relational database schema |
| Purpose | Cost-effective big data storage | Analytics for business decisions |
| Users | Data scientists and engineers | Data analysis for business decisions |
| Tasks | Storing data and big data analytics, like deep learning and real-time analytics | Typically read-only queries for aggregating and summarizing data |
| Size | Stores all data that might be used - can take up petabytes! | Only stores data relevant to analysis |

Source: Data Camp

Data lakes are a cost-effective option to store large amounts of data from multiple sources. This flexible option to store data in any struction lowers cost and is more scalable because the data does not have to fit a specific structure. However, a data warehouse requires structured data, making it easier to analyze because it is cleaner and has a uniform schema to query from. By restricting data in this way, a data warehouse is an efficient option for retails who need to analyze historical data for specific data decisions.

What if retailers could get real-time data insights delivered rapidly with significantly less demand on budget and resources? As retailers move toward a data-driven future, they're focusing more on harnessing the rich data available to create predictive analytics models—and to put the resulting insights to work in driving growth, innovation, and customer success. This solution enables customers to streamline their data warehouse modernization path with a comprehensive migration offer, easy-to-use tools, and on-hand support for managing the entire process.

# Benefits of a Data Warehouse Solution to Retailers

### *Jump-start analysis and accelerate innovation*

- Run blazing-fast queries to help easily uncover new findings

- Unlock real-time insights with BigQuery's high-performance treaming ingestion

- Get up and running in seconds, and start querying gigabytes to petabytes of data with standard SQL

- Embed intelligence deeply into your business with advanced artificial intelligence and machine learning tools

- Deliver highly scalable data analysis—from the only true serverless data warehouse

### *Simplify operations with a serverless approach*

- Set up and run a serverless, self-tuning, scalable data warehouse quickly and easily

- Access streaming data immediately for analysis within the data warehouse

- Replicate data across multiple data centers

- Remove the hassle of managing legacy infrastructure to simplify database operations

- Run workloads on open-source tools like Hadoop and Spark

### *Secure your business in a cost-effective way*

- Get robust security, governance, and reliability controls as standard

- Secure and govern data across its entire life cycle, including cloud IAM

- Receive superb reliability with a 99.9% uptime SLA

- Lower your three-year TCO dramatically

- Benefit from built-in encryption and VPC service controls

# Revolutionizing the Entire Value Chain With Google Cloud Platform

Customer expectations are high and retailers must reimagine, adapt, and transform different aspects of their business over time. Cloud services are central to revamping the entire retail value chain, thereby enabling retailers to scale infrastructure automatically, get deeper insights faster, and work more collaboratively.

Google Cloud offers choice and flexibility, backed by high-quality machine learning and data solutions—solutions that can help retailers achieve speed and scale for optimal customer experiences.

**"Rapid changes in customer demand are causing significant capital and expense constraints. Accelerating the migration of IT systems to Google Cloud can help retailers quickly cut fixed costs, reduce their operational overhead, and set up the right infrastructure to map to their changing business needs—while ensuring business continuity during unexpected business disruptions."**

- Carrie Tharp, VP of Retail and Consumer Solutions, Google Cloud

Retailers have the opportunity to transform any, or all, areas of their business. From product lifecycle management to in-store operations and omnichannel commerce, the key to achieving seamless and innovative customer experience can be found in cloud solutions.

- **Product lifecycle management:**
  Extensive data analysis to drive visibility and efficiency into all areas of the supply chain

- **Store Operations:**
  Frictionless checkout, empowered associates, and on-shelf inventory tracking

- **Logistics, Fulfillment and Delivery:**
  Real-time inventory management and intelligent analytics tools

- **Omnichannel Commerce:**
  Ecommerce hosting, AI-powered experiences, and digital shopping assistants

- **Merchandising and Assortment:**
  Modernize systems, understand inventory allocation, and evolve dynamic assortment planning

- **Customer Acquisition and Retention:**
  Unify data, personalize marketing, and provide superior support to convert unknown visitors into loyal customers

# Takeaways

Digital automation, data, and cloud technologies are already disrupting the status quo of retail customer experience. Retailers that failed to recognize the seismic shift brought about by online shopping and, more recently, digital transformation are now cautionary tales, serving as valuable lessons for retailers today.

> Between 2000 and 2018 **online retail grew 300%**, while **department** store **sales dropped almost 50%**

Source: U.S. Commerce Department

The implementation of a solution focused on the customer experience is essential to the process of digital business optimization. This optimization entails an improvement in productivity, revenue, and customer engagement. Data and cloud driven solutions are a great place to start when looking to transform the customer experience because they do not require an overhaul of the existing business model and can be implemented cost effectively. When a new automation or cloud solution is applied to specific processes in the business, it can be contained within an initial digital business strategy, or integrate into a transformation that is already underway.

Again, the core principles of customer-facing digital automation should be considered before development begins. Throughout the product development lifecycle, retailers must always consider the entirety of the customer journey in order to reflect excellent human experiences in digital form. Solutions should be designed to automate transactional tasks, while acknowledging that human help is often necessary for more complex requests.

Digital automation can support, rather than replace, employee and customer interactions. These innovations are just as important for the employee experience as it is for customers. Moving from a traditional approach to the customer journey towards a more complete customer journey supported by data and technology is essential to developing a successful digital automation solution.

Customers today respond best to memorable and unique retail experiences that make their lives easier. Whether it's a virtual assistant, a tool to help companies stay ahead of consumer trends, or features that facilitate an online purchase, these automated innovations are enhancing the customer experience.

> **2 out of 3 shoppers** in the US are more likely to shop somewhere that makes technology part of the experience

Source: SOTI Survey 2017

So before investing in expensive drones or large quantities of new point of sale equipment, consider which customer-facing processes could be enhanced with an automation or data-driven solution. A successful innovation can improve brand visibility and boost customer loyalty, which can build sustainability in today's competitive retail market.

# Wizeline and Google Cloud

Wizeline partners with industry-leading cloud providers, like Google Cloud Platform, to implement serverless, multi-cloud, and hybrid solutions for retail brands. How can retailers, or any business for that matter, benefit from working with a technology partner to implement cloud solutions? In much the same way as hiring a technology partner for software and product development.

Retailers of all sizes and levels of technology maturity do not have the resources, support, or in-house expertise to implement cloud solutions on their own. A partner has certified cloud professionals with experience working across multiple industries, regions, and projects. A cloud technology partner takes on the responsibility of transferring knowledge, frameworks, and methodologies to the retail organization. Implementing cloud solutions with a partner can accelerate the retail product lifecycle and free up internal engineering resources to focus on the core business while adding value to customers.
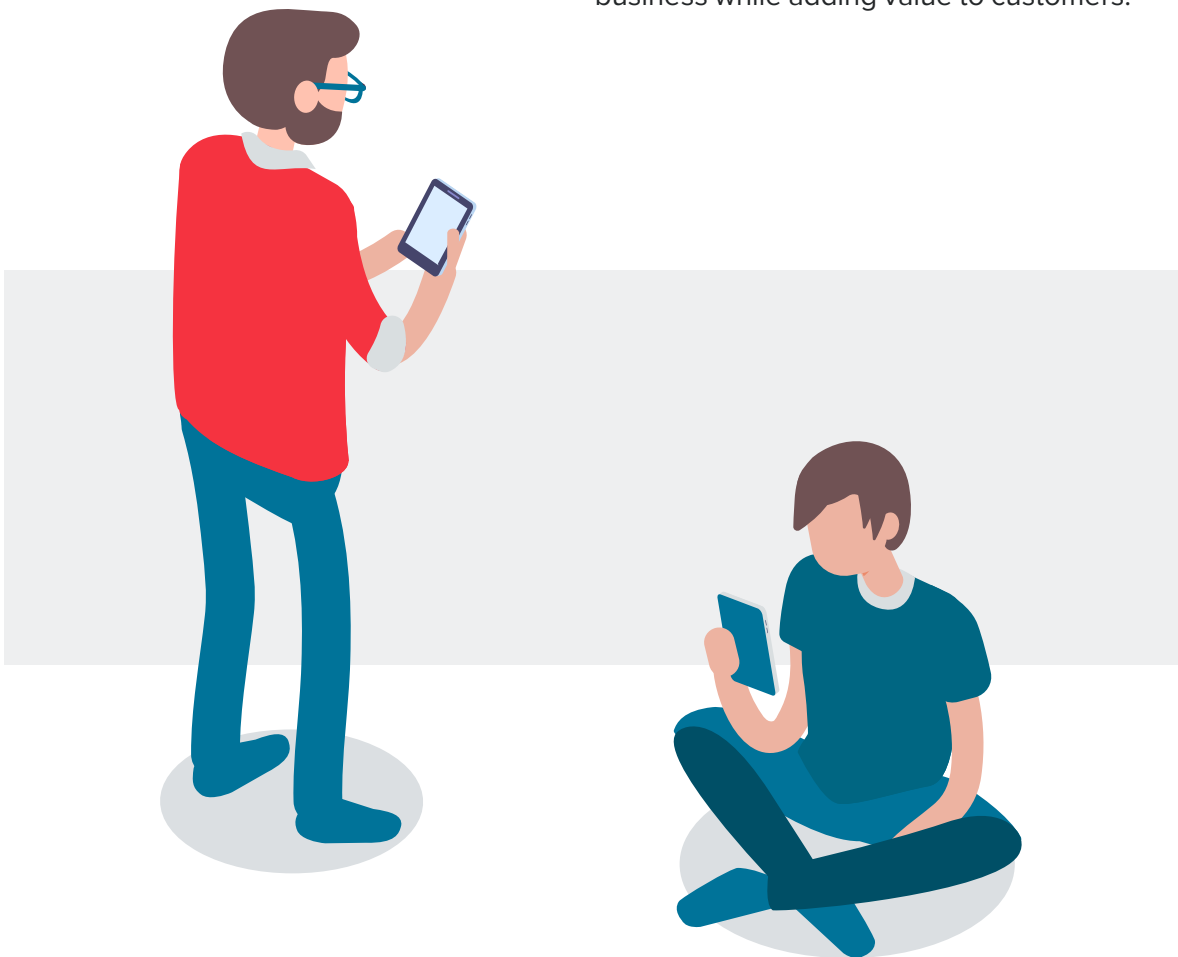
## About Wizeline

Wizeline is a software development and design services company with operations in the U.S., Mexico, Vietnam, Thailand, Australia, and Spain.

Retail brands around the world increase online sales by building online marketplaces, optimizing e-payments, and using data to understand insights from both online and offline retail experiences with Wizeline. Wizeline partners with traditional retailers as well as digital natives to build technology solutions prepared for the ever-changing online retail landscape.

Learn more at www.wizeline.

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