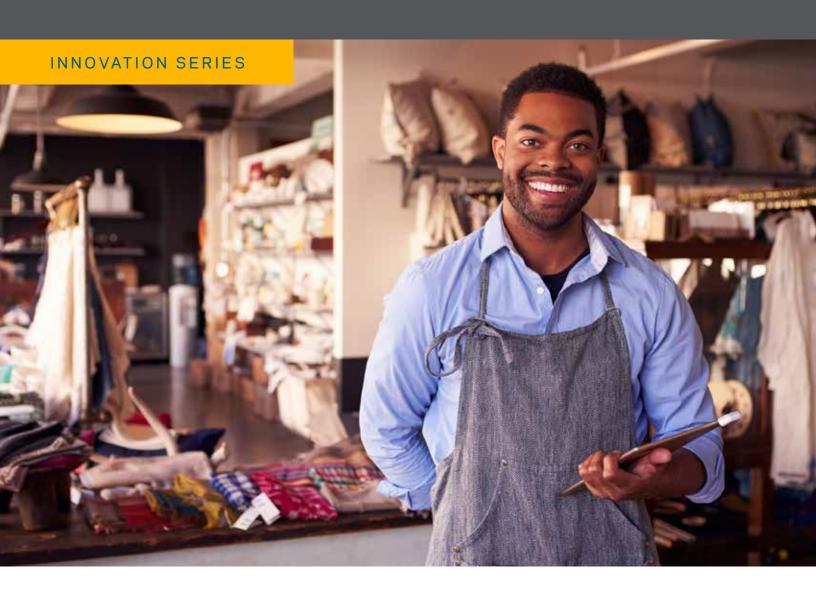# The Essential Guide to Technology in Retail

Developments and insights in retail and payments technology

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INTRODUCTION

Retailers have never before faced such a proliferation of technology. 44% of respondents in a recent NRF SmartBrief survey[1] saw the biggest threat to their business as being the fast pace of change in retail technology.

Today's retailer must explore a slew of new technology related tools. They include but are not limited to videos, geolocation, mobile apps and mobile wallets. It is no longer enough to track the developments of current tech trends. Retailers must be proactive—developing action plans and strategies to attract and retain customers using any and all available tools. **Today, 67% of smartphone users say they have used their phones to perform some kind of shopping task.[2]** Ultimately, retail technology is no longer an interesting trend to watch. It is now an essential tool to employ.

The next several pages will highlight the technology revolution that has taken place in the past 30 years, and show how it has completely transformed the retail shopping experience. The information is split into two areas of focus—Retail Technology and Payments Technology.

MEET CORY.

A fictional shopper in the 1980s, Cory goes to the supermarket every week with a purse full of coupons she has clipped from the newspaper. If she needs medication, she makes another stop at the drug store. If her daughter needs soccer cleats, it means a visit to all three area sporting goods stores so she can find the best price. When Cory needs shoes for herself, she is off to the department store. If she can't find anything there, she drives to yet another store— or she returns home to consult the Yellow Pages. In all, Cory's shopping experience is a tiring, frustrating and often stressful one that requires time and planning. Fortunately, today's retail technology has radically improved the customer experience.

[1]Source: NRF SmartBrief newsletter survey sponsored by Synchrony Financial. August 2016.
[2]Synchrony Financial Digital Study, 2013 - 2016.

From mobile apps and wireless connectivity, to video streaming and GPS, today's technology has made a huge impact on the shopping experience. Retailers can now engage with customers like never before—offering targeted promotions, virtual product demos, enhanced security and a faster checkout process. The result is a more personalized, convenient and streamlined experience that promotes loyal relationships, improved data gathering and can lead to greater sales.

1   INTERNET OF THINGS (IoT)

The Internet of Things is the networked connection of everyday objects (things), enabling them to collaboratively perform functions or to send and receive data. Thanks to modern broadband connections, merchants can deploy and connect millions of low-cost micro-devices and sensors just about everywhere in the retail environment and throughout the home. The popular Fitbit®, the ability to turn on lights or air conditioning remotely and the merchant's "buy" button are all examples of IoT.

There has been a shift in the way customers make purchases. Initially, the shift was from in-store to e-commerce and then to mobile commerce. Today, the shift is to IoT, where purchases happen automatically using a device, on demand (e.g., the Amazon Dash Button), or made verbally by interacting with the computer in a very simple, natural way through conversational commerce. The benefit for customers is increased convenience and access to more information. IoT technology enables consumers to buy whenever they want—in the comfort of their home, or whenever their busy schedule allows it.

The payoff for merchants is more data collected in more places, providing rich insights into consumer behavior, market trends, buying patterns and customer engagement. There is an opportunity to harness the current shift in buying patterns, technological upgrades and data footprints, which will allow for personalized interactions with customers. IoT helps retailers add new revenue streams via new products and services. It also leads to increased use of technology, which can improve efficiency while reducing operational costs.

WEARABLE TECHNOLOGY—Wearables are a subcategory of IoT that includes headsets, smart watches, fitness devices, healthcare monitoring and bespoke fashion design. They can also be used to make purchases in place of a traditional wallet, changing the way consumers shop. According to a study by eMarketer®, 8 in 10 shoppers interested in wearables want the devices to enhance their in-store experience.* Forward-thinking retailers can also incorporate wearables into areas such as payments and personalized, real-time location based marketing.

*Source: "Are Wearables the Next In-Store Shopping Buddies?" eMarketer, 29 May 2015. www.emarketer.com

② VIDEO

The shopping experience utilizes video in many forms. Video streaming, powerful smartphones and inexpensive Virtual Reality (VR) accessories (some now come free with phones) have created an opportunity to provide customers with real-life product experiences from the comfort of their home or even in the store. Examples include:

Video streaming: Consumers use videos to decide where to shop and what to buy. Online video streaming has taken off, particularly among millennials. Using video streaming in a sales context, retailers can answer consumers' online questions, explain a product's chief benefits and/or demonstrate how to use it.

Virtual Reality: Imagine feeling like you're in an ATV with fast terrain and mud flying everywhere, all as part of the buying experience. A benefit of VR is that it enables customers to experience products in a way they couldn't before. 85% of customers say they are more likely to make a purchase after watching a product video.*

In-store video: Using video technology in-store can provide another kind of cost-efficient customer experience. The technology has reached a point where the hardware is very inexpensive and the software algorithms can be powerful. New startups are looking at using video facial recognition to determine a person's emotions while examining a product. For instance, video-based security cameras can capture a consumer "lingering" in the electronics section and notify an associate to help close the deal. In this way, video cameras can help improve sales along with improving store security.

Retail applications such as those for video can help enhance the customer experience and increase sales.

*Source: Morris, Leighann. "Digital Marketing and the Impact of Video (Infographic)." ClickZ Digital Marketing and the Impact of Video Infographic Comments. Video Explainers, 8 April. 2015. www.clickz.com

③ GEOLOCATION: GPS, BEACONS AND BEYOND

Beacons (small, self-contained devices) broadcast a unique ID over Bluetooth to other devices listening nearby. They can be used for many purposes—including "talking" to a mobile phone, identifying a shopper's purchase behavior and communicating with customers in a store to create a personalized digital experience.

Beacons give retailers the ability to track where a particular customer is, how long they've been there, and where they have been. They can track if a customer is in the store, which departments they have been in, and for how long. Retailers now have the ability to send a custom offer or helpful information to a specific phone, targeting the shopper's store location, preferred purchases and purchase history.

HOW DOES A BEACON WORK?

A beacon can be attached to a wall, with batteries lasting up to 2 years. The devices come in all shapes and sizes, from a waterproof wall plug, to a USB stick that gets its power from a computer or point-of-sale device. They can also be completely hidden. Despite being low cost and simple devices, beacons can add effective integration between your brick-and-mortar store and a digital app. The classic example is the museum app. When close to a piece of art, detailed background information comes up on a visitor's smartphone, complete with audio or video. No need to have a special headset, walk the museum in any particular order, or scan a QR code. The proximity to a smartphone is all that is required. The appropriate smartphone app can detect the broadcast from the beacon and direct you to the relevant place.

This can work well in a retail setting too. Instead of losing customers through "showrooming" (in which they order an item from a competitor's website), the retailer can interact with the customer on their device. They can also provide information as well as offer targeted deals to help ensure the customer makes a purchase instead of buying from a competitor.

Beacons are also a great way to gather information on customer behavior in the store. They can allow a merchant to heat-map their stores to gather information on where customers spend most of their time, which departments they visit, and in what order. This provides deep insights into customer behavior and enables on-site offers through mobile devices, customized to shoppers' preferences and habits. For example, Apple stores use beacons for hyper-located ads, as well as to facilitate checkout. A beacon converts the Apple mobile app to "in-store mode," enabling customers to purchase products directly from their device without ever seeing an associate or waiting in line at the register.

4 BIOMETRICS

Biometrics is an authentication technique that relies on measurable physical characteristics monitored automatically. Examples include fingerprint identification, palm vein technology and facial recognition. Biometrics has gained widespread adoption with fingerprint authentication used on newer models of smartphones. The benefits of biometric technology are simplicity and security. Retailers have also used biometrics to gather data on customers, which can provide personalized offers and greater engagement.

The best shopping apps authenticate with a thumbprint and don't ask the customer for the same information every time they engage. Biometrics can make this possible. The retailer app can provide access to everything related to the shopping experience—information, offers, rewards and checkout. Biometrics enables customer purchases by authenticating with just a thumbprint, making the process quick, easy and intuitive.

Biometrics technology is in various stages of adoption in the retail environment. Retailers' apps can use biometrics to enable seamless checkout. For instance, if someone is in a store and wishes to purchase an item, they can open the retailer app and using fingerprint authentication, immediately make their purchase. As detailed in the following Payments section, the technology is being widely embraced by Apple, Android and Samsung smartphone mobile wallet users. Adopting the technology for physical, POS in-store purchases, however, is in its early stages.

MOBILE SECURITY

SCANNING...

WHAT DOES THIS MEAN FOR CORY?

Fast-forward to 2017. Using the latest technology, Cory no longer needs to physically go to the grocery store. Instead, she simply pushes a button on her refrigerator and the items get automatically ordered as soon as they run out. She also has an auto-renewal on her medication at her drug store, so her prescription is automatically refilled and delivered to her house. While looking for a new pair of shoes, she gets a push notification that her favorite shoe store is having a sale and has sent a coupon to her mobile phone. She orders the size and color she wants right through the app. While out for a run, she stops in a store and buys a water bottle with her smartwatch, which is also tracking her heart rate and running progress. Through her seamless, convenient shopping experience, Cory's quality of life has drastically improved and she can focus on more meaningful ways to spend her time and energy.

Since the payment process is the last interaction many shoppers have with a retailer, it is imperative that the process is seamless and positive. A satisfying payment experience is when the checkout is quick, the transactions are easy and any questions are accurately and quickly answered. Due to the importance of the payment experience, many retailers have placed a great deal of focus on payment technology.

Technology in the payments field has gone through a huge transformation. Until recently, payment methods were virtually unchanged for 30 years and included cash, check, credit card and debit card. The advent of EMV and mobile wallets heralded a shift in payment technology not seen since credit cards were first introduced in the United States. The following pages outline the types of new payment technologies and their implications to retailers and consumers.

THE OLD WAY TO PAY

Since the credit card she owns does not provide a rewards program, 1980's Cory only has one credit card, which she uses for the large ticket items that account for about 20% of her purchases. She also has a bank account and a checkbook, paying cash for groceries, gas and at department stores. Writing checks tends to create a line at the register and really slows down the checkout process. If Cory loses her wallet or doesn't get to the bank in time, she is out of luck. This means she has to borrow money or keep backup cash in the house, just in case. There are very few loyalty programs or benefits to using any payment method over another, so it doesn't matter to her what she uses. She deals with these inconveniences, but wishes there was a better way.

1   AUTHENTICATION / SECURITY

Authentication is the process by which a financial institution verifies the identity of a buyer. In today's hyper-connected world, data breaches and fraud have become more common, creating greater concern for retailers. In fact, it's such a significant issue that CEOs of major retailers have been forced to resign due to data breaches. As a result, it has become essential for retailers to develop reliable authentication processes.

Authentication has always existed. In the past, banks had local branches and bank associates knew their customers personally, so it was very difficult to steal a customer's identity. With the shift to electronic payments and cloud-based solutions, it has become increasingly important to authenticate and protect against hackers. Banks require increased fraud-prevention tools to keep up with the ongoing threat to their security and their brand. Authentication tools and their various forms continue to evolve today, ranging from EMV Pin to biometrics.

② POINT-OF-SALE TECHNOLOGY

The point-of-sale (POS) terminal is where the checkout process occurs (both online and in-store), and is usually the last interaction a shopper has with a retailer. For some customers, it is the most important part of the entire shopping experience. If it is quick, efficient and pleasant, the likelihood of the customer coming back is higher. Speed, efficiency and seamlessness is key. If the process is complicated, frustrating or slow, the retailer can risk losing the customer forever.

The advent of new payment vehicles has launched a world of new POS capabilities that enable better use for both plastic-based and mobile solutions. Today, companies of all sizes invest in these new POS solutions. Current technology provides an opportunity to shift from terminal, POS card-based solutions, to biometrics, chip-enabled and mobile-based solutions.

Some companies providing this new, innovative POS-based technology include POYNT, Square and Clover. Below is a snapshot of each.

◎ POYNT	▣ Square	🍀 clover
* Designed for large retail and restaurant environments	* Accepts credit cards anywhere	* Integrated hardware and merchant POS technology solution
• Flexible connectivity (WIFI) and certifications (PCI, PIN, EMV, NFC)	• Works with iOS and Android	• Ability to semi-integrate with hardware, SDK's for payments, sending/receiving messages
• Plug and play POS integration allows for back-end extensions and cloud hosting	• Clear pricing, fast deposits	• Clover Go gives ability to "bring-your-own-device solution" for taking EMV payments
	• Digital or email receipts	

Growing acceptance of mobile technology through new POS methods has been key for the acquirers and issuing networks (e.g., MasterCard®, Visa®, Discover®, American Express®). Embracing new technology at point-of-sale is a key factor driving the increased demand of electronic payments, especially using EMV chips. Starting in October 2015, the responsibility for credit card fraud was placed on the shoulders of retailers. As a result, implementing EMV chip-reading equipment has become a top priority for retailers. According to a study by Forrester® Research, **73% of retailers said their top payment-related initiative for 2016 was implementing EMV.***

Another key element of the current POS technology initiative includes mobile payments. According to the same Forrester study, **68% of retailers said they planned to implement at least one digital payment feature in the coming year.** Additionally, two growing populations—small business owners and millennials—are on the lookout for new transaction methods, including leveraging their digital devices to create a virtual cash register and POS terminal.

*Source: The State of Retail Payments 2016, a NRF study conducted by Forrester Research.

3 MOBILE PAYMENTS

Depending on whom you ask, mobile payments are either an innovation or business as usual. Although it began in the early 2000s with NFC (Near Field Communication), contactless payment technology has only recently become widely known and accepted by the average consumer.

> Near Field Communication (NFC) is technology for digitally transmitting information over short distances (usually between a smart phone and another device) using radio waves.[1]

THE HISTORY OF PAYMENTS

	2004 - 2006	2010	2012	2013 - 2014	OCT. 2014	2015	2016
	NFC forum established with tag specifications	Android produced first NFC phone	Payment networks accept EMV and NFC payments at POS	Mobile payment platforms proliferate (e.g., Master-Pass™, Visa Checkout®, Softcard)	Apple introduces Apple Pay for iPhone 6	Apple Watch and Samsung Pay released. EMV shifts liability from payment networks to merchants	Mastercard® and Visa® launch incentives for digital wallet usage
Smartphone adoption (% of U.S. Population)[2]				52%	66%	69%	82%
Mobile wallet awareness (% of U.S. Population)[2]				31%	49%	55%	81%

In the 12 month period between October 2014 and September 2015, the mobile wallet landscape went through a huge transformation with the introduction of Apple Pay and Samsung Pay. As a result, mobile wallet awareness jumped from 55% to 81% in just one year. But while awareness has grown, adoption of the technology still lags. With smartphone ownership at 82% and growing, only 9% of the U.S. population says they plan to use a mobile wallet regularly.[2] The graphic below illustrates the reasons for the lukewarm response.

MOBILE WALLET BENEFITS AND BARRIERS

BENEFITS

65% Convenience
59% Speed
47% Security

BARRIERS

51% Happy using traditional payment cards
46% Not sure it's safe/secure
43% Don't have a need

To add to the challenge, customers are not always aware of the locations that accept mobile wallets, nor do they feel a compelling desire to switch from their current credit card technology. Overall, customers are used to paying with credit cards and aren't finding significant enough reasons to embrace mobile payments.

[1]Merriam-Webster online dictionary. http://www.merriam-webster.com/dictionary/near%20field%20communication
[2]Source: Synchrony Financial Digital Study, 2013 - 2016.

For a generation that's grown up with digital technology and that views digital purchasing as the norm, the mobile wallet is a natural evolution. Similar to keeping calendars and loyalty cards on their mobile devices, once consumers understand and appreciate the convenience and enhanced security of the technology, adoption will be rapid and irreversible.

A recent Forrester Research study found that **63% of retailers believe consumers will use mobile/digital payments once more features become available—including elements such as coupons, offers and loyalty programs.*** In addition, the use of mobile wallets as marketing and advertising vehicles is increasing. Many brands now provide consumers with links that download customized offers to the Apple or Android wallet app.

ENABLING PAYMENTS AND SERVICING IN THE RETAILER MOBILE APP

Several new technology enhancements have been developed to enable payments directly within a retailer's app. The apps enable the cardholder to view their account balance, purchase activity, make a payment and check the available credit for quick and easy purchasing decisions—all within the app. Kohl's and Walmart have both developed this functionality. Synchrony Financial provides this with SyPi—the Synchrony Plug-In. Once the retailer app is accessed, the entire purchase experience can be performed directly within the app. This not only enhances cardholders' mobile shopping experience, it also increases engagement and boosts loyalty. In some instances these tools also allow cardholders to receive push notifications and special offers, including rewards that can be redeemed in-store or online. As a result, the wait time at the register may be reduced or eliminated completely.

As a result of improved value propositions, the use and acceptance of mobile wallet is likely to grow in the coming years. Retailers who have not yet embraced mobile payment technologies should consider them as they develop POS strategies going forward.

A NEW AND IMPROVED SHOPPING EXPERIENCE

In 2017, Cory enjoys a very different experience than her 1980s counterpart. With several high-value credit cards in her wallet, she tries to maximize her rewards, saving hundreds of dollars thanks to loyalty programs. With her debit card and mobile wallet, Cory can access money at any time without having to run to the bank or ATM. Transactions are tracked and she's notified on her phone when there is a digital coupon she can use. Data analytics provide value-driven promotions that enhance her customer experience, so she doesn't have to spend time searching for the best deal or clipping coupons. This makes Cory's life much easier and gives her a high sense of comfort and security when shopping and paying.

*Source: The State of Retail Payments 2016, a NRF study conducted by Forrester Research.

CONCLUSION

The shopping experience has been completely revolutionized by the advent of new technology. Whereas once it was a time-consuming process offering its share of headaches, today's shoppers enjoy a wide range of technological advantages that make their experience fast, easy and efficient. Retailers have also benefited—including gaining greater access to information about customer shopping patterns and preferences. This gives them the opportunity to target specific customers with relevant offers, creating loyal customers and higher sales. While some of these technologies are being embraced at a rapid pace, others are only just beginning to gain traction. But regardless, there's no denying the impact these technologies have on the retail industry, making it essential that merchants of all sizes take notice and develop strategies for adopting them.

Focus on what really matters.

Synchrony Financial is one of the premier consumer financial services companies in the United States. Our roots in consumer finance trace back to 1932, and today we are the largest provider of private label credit cards in the United States, based on purchase volume and receivables.*

About Synchrony Connect

Synchrony Connect is a value-added program that lets Synchrony Financial partners tap into our expertise in non-credit areas. It offers knowledge and tools that can help you grow, lead and operate your business.

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Tools for leading your organization and developing yourself as a leader

Operate
Best practices around business strategy and optimizing cost

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