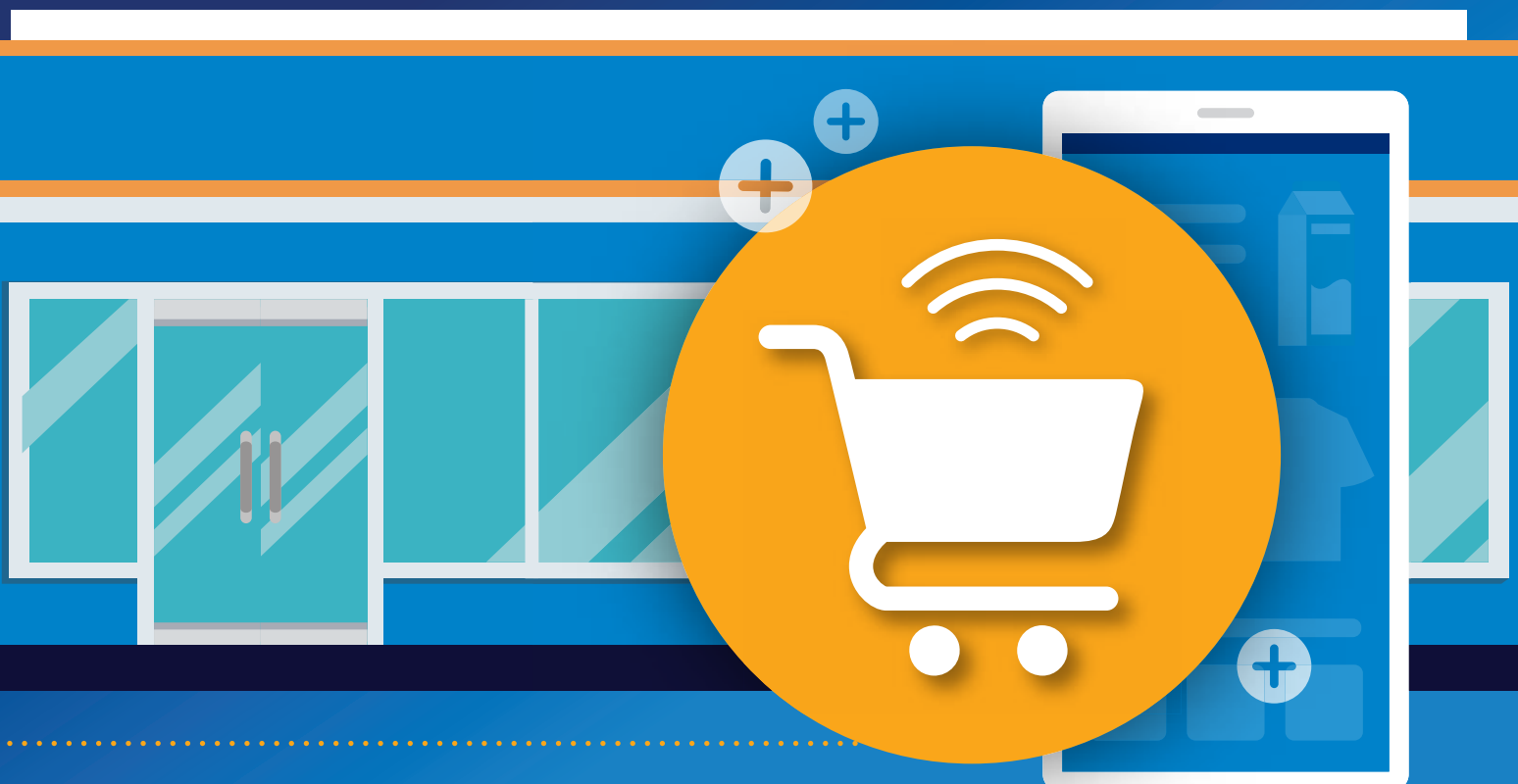# Five Smart Retail Technology Trends in Store for 2021

By Ross Sabolcik

To say that COVID-19 has been disruptive to the retail sector would be an understatement, but the ongoing pandemic is far from the only factor contributing to a significant shift in retail technology trends dictating how store owners and operators are now approaching shopping experiences. While the pandemic may have super-charged the shift to online and smart retail shopping solutions, it's safe to say that smart retail technology will remain in the spotlight, playing an instrumental role for small and big box retailers alike to meet their customer needs.

Amazon's Prime Day in October kicked-off the 2020 holiday shopping season with a massive 60% year-over-year increase in online sales, underscoring just how heavily consumers and retailers alike are depending on smart, connected technology to transact. Deloitte has forecast that – despite hardships brought on by a struggling economy and job losses – 2020 holiday retail sales are still expected to rise up to 1.5%, and online shopping will see huge growth of up to 35% totaling nearly $200 billion in holiday sales. The majority of 2020's holiday retail transactions are made possible because of smart retail technologies.

We work with a number of the world's largest retailers to design and implement smart retail technology, and we see five clear trends emerging. I'll share each of these trends, but it's important to first understand what's driving them. Obviously, consumers are shopping online more due to the ongoing pandemic. Second, those who are shopping in brick-and-mortar stores want to do so safely, meaning minimal time spent shopping indoors and minimal physical contact. The same goes for store management and staff, who are also focused on safety and efficiency for everyone inside a store. These drivers are having a profound impact, requiring retailers to develop and deploy omnichannel retail strategies which effectively merge online and offline shopping.

With the pandemic as an accelerator, consumers have come to expect more from their shopping experiences than the traditional transactional shopping we've done with retail brands. Above all, we want our shopping experiences to be personalized and useful across the devices and channels we're familiar with. We want retail brands to meet us where we are, and increasingly, that's through wireless IoT devices. Emerging retail technology trends include everything from real-time information being made available to consumers about the products they're browsing, to utilizing data to predict preferences, to connected experiences being key to desirable shopping experiences. Taken together, smart retail technology implementations can pay dividends in logistics, manufacturing, and even how products are marketed and promoted across channels.

Here are the five retail trends that will have a big impact on the future of the retail industry for retail brands and consumers alike.
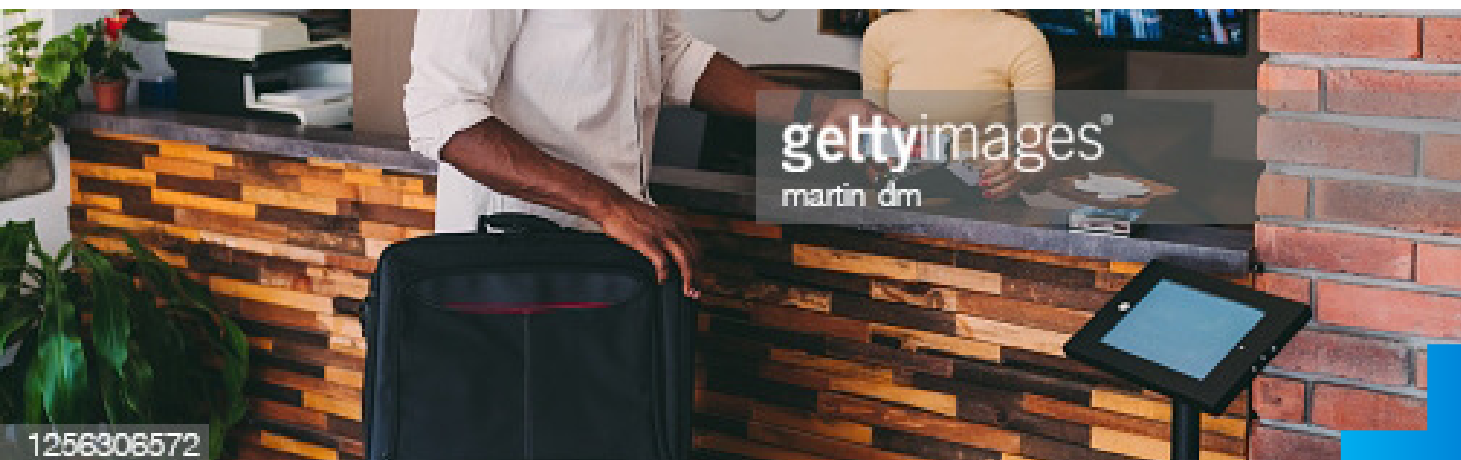
The Rise Of Asset Tracking

According to Gartner, 65% of enterprises will require indoor location asset tracking by 2022. There are numerous advantages to asset tracking, from driving business results to improving customer satisfaction. First, more visibility into and control of the supply chain enables more efficient manufacturing, shipping, and transportation. A well-designed asset tracking strategy can also identify production issues and help managers make more informed purchasing decisions. But asset tracking is complex. If you don't know what you have or if you can't find it, you can't make informed decisions.

For large retailers, this might mean tracking thousands, if not hundreds of thousands of individual items. Doing this manually is rife with errors and incredibly time consuming. But a smart asset tracking strategy that utilizes commercially available low-cost, low-power products can dramatically reduce the costs associated with asset tracking while delivering huge value-add.

Silicon Labs was actually the first wireless SoC manufacturer to support Bluetooth direction finding, which offers IoT developers a direction-finding feature making it possible to locate and track assets. Using Bluetooth, developers can bring products to market that understand device direction and achieve sub-meter location accuracy. To learn more about how our customers are utilizing asset tracking, read this blog about what industry leaders like Quuppa are doing in this area.

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Mass Adoption Of Electronic Shelf Labels

Electronic shelf labels (ESLs) are another area where technology can add bottom-line value as well as enable a more safe and desirable shopping experience. According to TimeTrade, 87% of retailers say creating a seamless customer experience across all channels is the most important element of their company's omnichannel strategy. This is especially true in stores where frequent price changes have traditionally been done through store staff manually updating pricing information.

The instant pricing updates made possible by ESL's mean far less contact with inventory, helping to prevent the spread of bacteria and potential viruses. Grocery stores are realizing big efficiency gains in this area as produce pricing changes with the season, but fashion brands are also getting in on the action by using electronic shelf labels to provide shoppers with detailed merchandise information. Clothing retailers are actually at the forefront of pioneering the omnichannel buying experience and see a lot of potential in coordinating the product information that's available to consumers online with real-time, in-store browsing.

 Our EFR32FG22 SoCs, which are based on the Wireless Gecko Series 2 platform, embed anti-tamper features with energy efficiency to help developers of electronic shelving and pricing automation products get to market quickly. For more information about how electronic shelf labels are improving business for retail stores, check out this case study based on the work Rainus is doing with our 2.4 GHz SoCs.

Strengthening Security Where People Shop: On Their Edge Devices

Protecting business and consumer data in a connected retail environment is a necessity. The rise of online shopping through IoT edge devices like smart phones, voice assistants, watches and even connected appliances has caught the attention of hackers, who have increased the scope and complexity of attacks on IoT devices as they proliferate. Retailers must ensure their customers' data remains private and secure, because once trust is broken it is very difficult to rebuild. And with hackers increasingly probing for hardware and software vulnerabilities in our wireless devices, new IoT-specific hardware and software security solutions are a must.

In addition to mounting security threats, government regulators are taking steps on behalf of consumers to protect data and privacy. Retailers will need to be in compliance with these regulations. The US and EU have already begun implementing policies designed to protect consumer privacy and security, with more regulation expected in the future.

Silicon Labs anticipated a changing regulatory landscape along with bad actors increasing the scope and complexity of hacking efforts on edge devices. That's why we invented our recently launched Secure Vault technology. Secure Vault is a state-of-the-art, award winning suite of hardware and software security solutions created specifically to protect IoT devices. Also featuring our Wireless Gecko Series 2 platform, Secure Vault combines best-in-class security software features with physically unclonable function (PUF) hardware technology to greatly reduce the risk of IoT security breaches and protect in-store and online transactions.

New, Pleasantly Surprising In-Store Experiences

In order to attract more shoppers to physical stores, retailers are making a renewed effort to create compelling in-store experiences. One of the new and surprising ways retailers are creating better in-store experiences for shoppers and staff alike are through a very unlikely source: loss prevention tags.

According to the National Association for Shoplifting Prevention, shoplifting accounts for nearly $50 billion in retail crime every year in the US, and almost $100 billion globally. While loss prevention tags continue to be necessary, technology is teaching this old dog a number of new tricks. Old school anti-tamper tags tend to malfunction frequently. Most of us have had the experience of paying for an item, yet the tired, old loss prevention tag still sets an alarm go off as we attempt leave the store. Yes, it's annoying. But there's hope on the horizon by way of a new generation of tags.

Innovations in size, weight, and power consumption now make it convenient, durable, and cost effective for manufacturers to combine quite a bit of functionality into small, yet feature-rich loss prevention tags. These new tags bring excellent connectivity and data management to a form factor that can double as an asset tracker and more. An exciting example of this comes from Zliide, which has created state-of-the-art loss prevention tags that not only keep merchandise secure and help store staff focus on service, but also deliver value-add for shoppers. The Zliide Security Tag enables self-checkout, digital promotions and receipts, and can transmit audiovisual product information to shoppers' phone screens. The data collection these new wireless tags are capable of also give retailers valuable insights into their customers, providing store-by-store insights that can be used to better tailor specific store locations to their local customers preferences.

Interoperability: Smart Retail Technology Must Work Together Seamlessly

Finally, in order for retailers and consumers alike to realize the benefits of smart retail technology, those technologies must be able to work with one another, and do so seamlessly. The retailers who get this right – those who adopt a comprehensive omnichannel tech stack and experience – are the retailers who will win.

As retailers begin to deploy more smart retail asset tracking, ESLs, edge security, and loss prevention solutions, the key to success will be ensuring that all of these smart retail technologies work together in harmony. Several retailers have already demonstrated that this can be done effectively. Examples include Amazon's cashier-less GO convenience stores, Walmart's Intelligent Retail Lab and Walmart+ efforts, and 7-Eleven's cashier-less store pilot. These retailers are ones to watch, and other retailers who effectively deploy omnichannel approaches featuring seamless smart retail technology implementations will achieve the greatest success in the years ahead.

For more information on these and other smart retail trends, check out our eBook, "What's New in Smart Retail," where we look into some of the innovations being offered by the leading names in retail technology.

Interested in learning more about how Silicon Labs' retail solutions can help your business?

Contact us today.

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