Tough Choices

By Tracy Maple

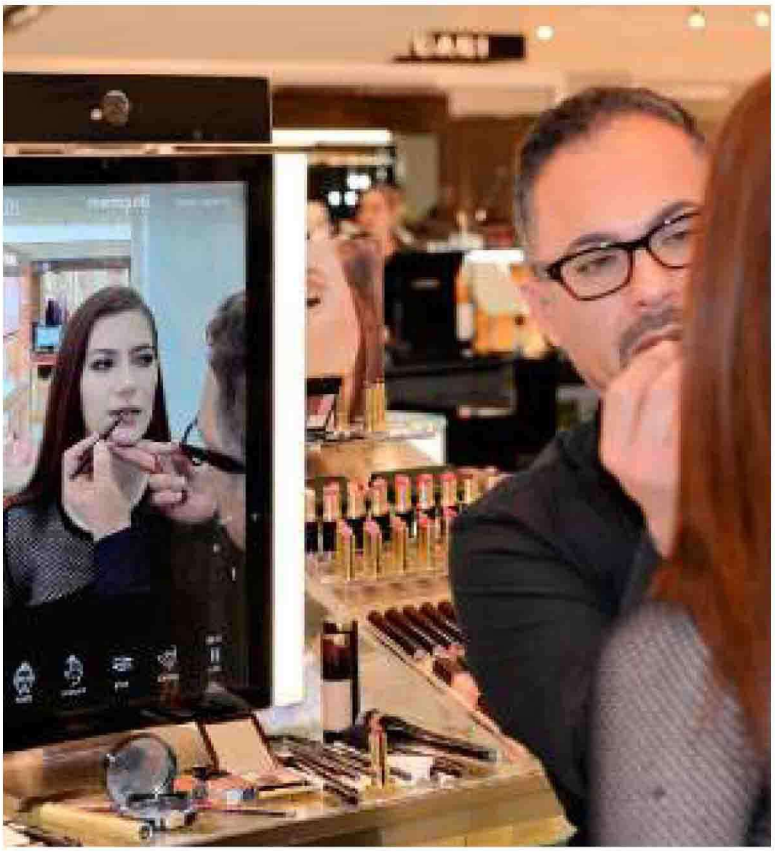
Bells and whistles abound when it comes e-commerce technology, but retailers have to make practical and tough decisions about which tools really work.

Scott Emmons, director of the Neiman Marcus Innovation Lab, receives dozens of cold calls a day from vendors pitching technologies. Only about 10% of the tools are interesting or intriguing, while the other 90% either don't fit or the retailer isn't ready for them. It's the nature of Emmons' job to research and pursue new technologies that can enhance how the luxury department store chain does business.

But just because a retail technology is available or possible is by no means a reason to pursue it, he says, even though he's had room to "shoot from the hip a little and try things for the sake of trying" in the 13 years he's been with Neiman Marcus. Much of that experimentation has involved in-store technology, but with e-commerce accounting for 30% of the retailer's sales, it's increasingly important to test online tools that

can help the retailer gain a more complete understanding of its customers and their behaviors across channels, he says.

The Memory Mirror is one such tool meant to wow customers and gain a better understanding of their preferences. Deployed at more than 20 of the 42 full-line Neiman Marcus stores, the interactive, internet-connected mirror lets shoppers compare outfits or makeup looks side by side that they've already tried on and captured in a 360-degree view with the mirror's camera and software, and the video can be saved and shared online. Emmons declines to say how much Neiman Marcus has spent developing the technology, but the justification for continuing to build new versions of the mirror in the past three years has been that it offers a "unique and useful experience that helps the customer on her shopping journey," he says.



Neiman Marcus has installed its Memory Mirror technology at some of its cosmetics counters.

A high-tech mirror isn't for every retailer, and neither are many of the other technologies currently generating retail industry buzz such as virtual reality, augmented reality and chatbots. Some technologies are aimed at grabbing customers' attention as online retailers jockey for eyeballs, higher sales and conversions, and increased customer loyalty, while others help bolster retailers' behind-the-scenes, back-end operations. Regardless of the tool, retail leaders operate on a budget, which means they have to evaluate and determine if an investment in such tools is worth it. They have to ask such questions as: What problem will the technology solve? What kind of return on investment is it expected to generate? How will it set us apart from the competition? And retail technology specialists emphasize the folly of pursuing a shiny, new technology if the fundamentals—a good mobile site, fast load times, easy site search and navigation—are lacking.

"You have to walk before you run," says Ajay Kapur, CEO of Moovweb, the mobile commerce technology provider to 39 retailers in the Internet Retailer 2017 Top 1000. "One question you have to ask: Is our core e-commerce experience fast and usable? The average retailer can't say yes to that, especially on mobile."

Online retailers should think about Amazon.com Inc., with which most of them compete, and strive to match—or beat--the online giant's experience, such as its fast load time and simple checkout process, he says. An e-retailer should ask, "Do I have an Amazon-like experience in terms of e-commerce?" Kapur says.

Google Inc.'s Accelerated Mobile Pages technology is one way retailers can speed and smooth the mobile shopping process, he says. AMP is a free open-source coding framework that allows businesses, including retailers, to build lightweight mobile pages that quickly load on smartphones.

Online marketplace eBay Inc. has been using AMP, which is geared toward publishers, for a little more than a year, making it one of the first retail businesses to use the technology. AMP on eBay helps consumers who come to eBay's mobile site from a Google search or Twitter, so when a consumer clicks on an AMP eBay link, the webpage should open in two seconds or less. Mobile traffic accounted for 49.6% of eBay's traffic for the three-month period of April-June, according to data from web analytics company SimilarWeb Ltd. AMP coding is just one component of eBay's ongoing technology, and it declined to say whether its use has resulted in more sales or page views. "As one of the world's largest marketplaces, eBay continues to transform its platform to create a cutting-edge shopping experience. eBay invests in all types of technology and complements it with our homegrown tools and expertise and engineers," an eBay spokesman says.

Kapur says an e-retailer's technology investments should focus on ensuring it offers an excellent customer experience. Only then should it reach for more cutting-edge tools. "If you're offering an average experience and investing in something that's unproven, those are not the right priorities," he says.

Increasingly, that means ensuring that mobile shoppers have a seamless shopping experience, says Stephan Schambach, who founded e-commerce

technology provider Demandware and now runs mobile shopping platform NewStore Inc. After all, 51% of consumers made an online purchase on their smartphone, according to a recent Pew Research Center survey.

"As e-commerce evolves, there is a ridiculous amount of hype around the various technologies available to brands, and few are worth the investment. New technology bursting onto the scene garners media interest but offers very few actual examples of its prowess in action," Schambach says. "To successfully lead retailers into an environment in which mobile has flipped the shopping cart, [chief technology officers] need more than technology skills. They need to lead on three critical fronts: innovation, experimentation and strategy."

At U.K.-based online grocery retailer Ocado Group PLC, technology decisions involve a balance between short-term and long-term goals. "Being part of the dynamic market of online retail means we have to keep casting our sights further into the future while also continuing to remain focused on the day-to-day innovations that keep our business running efficiently," says Paul Clarke, chief technology officer.

Ocado.com customers interact with all kinds of technology that they don't fully realize they're using because it's built into the platform, Clarke says. In October, Ocado began using a machine-learning platform built in-house to more efficiently manage its emails and Google's TensorFlow, an open source software library for building machine learning frameworks. With machine learning, the system can learn over time when it is exposed to new data and modifies its initial programming without humans making the tweaks. As emails arrive at Ocado's contact center, the new system determines if they are positive or negative and then assigns a strength of the positive or negative sentiment of the email. The system also tags each message with a description of its content, such as a canceled order, a request for website help or a delivery complaint. It then prioritizes each email based on how quickly it should be read and answered. "We've seen several benefits, including the ability to respond to urgent emails four times faster. It costs about 100 pounds per month [about $129] to run the email system in the cloud but it has already provided a cost saving of about 100,000 pounds in staffing costs," Clarke says.

Measuring results is part science and art. "We find the most important markers for any successful technology are feedback, adoption and impact on sales," he says. "However as a disruptor, we often have to take leaps of faith when it comes to new features and solutions that customers might never ask for, or might not even realize they would use, until they are delivered. There are time you can be data driven and there are times when you have to follow your instincts in terms of driving experimentation," Clarke says. Ocado's Smart Platform robot hive, which is part of the retailer's warehouse automation system that picks and packs online grocery orders is an example of that experimentation, he says. It involves a densely packed mobile network that allows Ocado to control 1,000 robots from a single base station and communicate with them 10 times a second in an area about the size of an Olympic swimming pool.

"We find that our customers are particularly interested in any technology that can help them shop faster,

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with lower friction, better service and greater delight. For example, we were early adopters of the watchOS ecosystem and developed the first Apple Watch app for online grocery shopping," Clarke says. Ocado won't reveal statistics about its Apple Watch app but says more than 55% of orders come from mobile devices.

Technology that works for one retailer may make little sense for another. For example, virtual and augmented reality tools make sense for an online furniture seller looking to help a consumer get a better sense of how a product would fit his space but may not work for a sporting goods retailer.

"With AR and VR, you can visualize how furniture will look in my room," says Anderee Berengian, CEO of Cie Digital Labs, which helps retailers and brands develop digital strategies and develops tech startups of its own. "I don't know looking online, or even in a store, if I need a 7-foot or 9-foot sofa, or how that sofa would look with my end table. Augmented reality allows us to see that and ensures that I make the right purchase. It means fewer returns for a retailer and it creates greater engagement with brands, which means more loyalty."

Home furnishings e-retailer Wayfair Inc., for example, has been actively working on augmented reality and 3-D modeling since 2015, rolling out an augmented reality Android app in mid-2016. As of May 2017, when it reported its fiscal first quarter results, Wayfair had more than 25,000 SKUs modeled in 3-D, which is a small fraction of its more than 8 million products. These models of Wayfair products—a dining set or lamps, for example—can be deployed using 3-D modeling software SketchUp, which architects, engineers, designers and construction professionals use to show clients design renderings in 3-D to give a more realistic view of a room than a photo or drawing. 3-D models also can be used in augmented and virtual reality platforms, such as those that allow a shopper to visualize what a sofa would look like in her living room. However, a virtual reality app called IdeaSpace is, for now, only available to consumers via Google's Daydream VR headset. Wayfair executives in May said more smartphones will incorporate 3-D sensing technology within the next year and a half, and that will give more consumers the ability to use Wayfair's augmented reality apps.

While the 3-D models are essential to Wayfair's virtual reality and augmented reality experiences, the models also benefit the retailer's website images because they offer a less expensive way to produce lifestyle images on its sites, co-founder Steven Conine said on a recent earnings call. That's because the retailer's library of 3-D product models can be used to digitally render a 2-D image that features multiple products, which is less expensive than using photo studios with the real products. While e-commerce revenue is surging at Wayfair—it jumped 32.1% in the fiscal first quarter—the e-retailer has yet to post a profit and has not detailed how much it has spent on 3-D and augmented reality technology.

Some technologies take time to work. For instance, Neiman Marcus's first Memory Mirror, which was installed in early 2015, didn't get the green light on its first proposal, Emmons says. "It took a good 12 months of work to build a use case and the hardware to convince the business side to try it. We have three different flavors of the mirror today—it's a robust fleet of mirrors that offer a digital experience and gives

us information about our customer." As the technology improves, so does the ability to measure everything from how often shoppers use the mirror to whether it increases dwell time in stores as shoppers virtually "try on" more clothes. "I am always thinking about how to leverage what we're great at in stores and deliver that experience online: How to convert a high-touch, strong relationship business and deliver that to an online customer," he says.

Customer service is another area where retailers have to weigh the cost and benefits of new technologies, and where chatbots increasingly come into play. "Artificial intelligence and chatbots have the potential to help my team of live agents that service online customers," Emmons says. Bots, which are computer programs designed to interact and converse with humans online, can find and share product information much faster than a human and would allow Neiman Marcus customer service employees to concentrate "on more difficult or out-of-the-ordinary needs for customers," he says. "We're just dipping our toe in. We've had our first pilot program and are considering how we can do this in a bigger way." He declines to reveal the results of the pilot program.

Schambach believes chatbot technology is worth evaluating. Already retailers such as Sephora have tested chatbots on the messaging app Kik that enable consumers to discuss trends, view product information and reviews, receive recommendations, and even purchase on product pages within the app.

Despite their promise, chatbots often fail to deliver business value—such as generating more sales leads, and improving customer service efficiency—or customer value—such as saving customers' time, and improving customer experience —says Xiaofeng Wang, a Forrester Research Inc. senior analyst. That often reflects a retailer's unclear purpose for the bot and poor planning.

While many merchants around the world already use chatbots, or plan to do so this year, many retailers make mistakes like not clearly defining their purpose, setting goals that are too ambitious for their existing capabilities and launching them before they are ready, she says. "Today's successful chatbots are driven more by keywords than by machine learning. They can deliver quick-hit information such as the latest promotions and provide shortcuts to content such as tutorials. Most chatbots' cognitive capabilities are still far too limited to deliver context- or intent-based personalization or advise customers about complex products," Wang writes in a recent report.

Bots are still in their early stages, but are growing increasingly common. Last year, 5% of companies surveyed in Forrester's 2016 Global Mobile Executive Online Survey said they used chatbots regularly, 20% were piloting them and 32% were planning to use or test them in 2017. The survey, conducted in the fourth quarter of 2016, was of 139 business-to-consumer mobile executives from around the world, and about 15 (11%) were retail and e-commerce executives, Forrester says. "Chatbots offer plenty of analytics for a brand to assess, including engagement levels, conversation length, sentiment, response rates, chatbot mentions, and click-through rates," the authors write.

Auto parts retailer Pep Boys hasn't tested chatbots with its customers but says it's considering them and evaluating how the technology could influence staffing,

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says Chris Vitale, vice president of digital operations and e-commerce. Recently he had to call a phone number to activate a credit card. "A person answered and I was like, 'Are you serious? Can I get a prompter?' And we're seeing that trend: Customers say they want white-glove service or they don't want to talk to a human at all," he says.

But Pep Boys doesn't base its technology decisions on an executive's personal experience. There is a protocol. Executives ask about the result a technology aims to drive such as increase revenue, boost conversions or page speed, or improve customer satisfaction, Vitale says. And they want proof of concept on as many things as is practical. An attempt to launch a new selling tool on its site—Vitale declines to detail how it was supposed to work—had received capital funding but was scrapped after issues arose during implementation.

A retailer that tosses technology onto a website or into a store without thorough, regular testing as well as training for employees, risks annoying and alienating customers when the technology doesn't work. Michael Klein, director of industry strategy for the Adobe Marketing Cloud, notes a visit to a high-end bed and bath store in New York City. The store had a 5-foot touchscreen monitor with a menu option, text and arrows as if a user could scroll and interact with the screen, ostensibly to see product demos and settings in which products were used. "None of it worked," he says. "When I asked a store associates, they weren't aware it wasn't working and they eventually copped to the idea that this screen was controlled by corporate in California, and they had no control over the experience."

On the other end of the spectrum, a visit to the San Francisco store of women's apparel retailer Reformation offered an experience that blended form and functionality. The store was sparse with 40-inch video screens installed among traditional racks of clothing. "Store associates were there at the entrance to help educate shoppers about what to do," Klein says. "The store had one of every item, in extra small, on display. You could touch and feel the garment on the rack, but you use the monitor to build a dressing room. The screens sent the intelligence to the back of house to tell you what's in inventory—there's no going through hangers and hangers to find your size." An associate places the customer's choices in a dressing room, and customers can interact with an associate from there. "It was very clean and inviting and an almost 50-50 division of product and technology," Klein says.

At Ocado, which not only sells groceries online but aims to sell its e-commerce platform technology to other grocery e-retailers, the company has three strands of innovation. "The majority of our time and resources go into 'business as usual' innovation and elements of this are woven into everything we do in all three strands," Clarke says. "Then we have our R&D teams who work on high-end technologies such as robotics and machine learning. And finally we have our advanced research teams grouped under the 10x department that looks for game-changing opportunities working on the '10 times over 10%' principle," he says.

The key to technology investments is not to get distracted by the shiny new objects that plenty of companies want to sell to retailers. There are many solutions in search of a problem, but figuring out the issues that need to be solved and focusing on technology that shores up the fundamentals of e-commerce is the most important step. ●

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