Adidas NEO shoppable store windows feature life-size products on interactive mannequins, creating an irresistible digital draw for shoppers, passersby and the curious.

THE FUTURE OF RETAIL

BY SUSAN DICKENSON

There will be more changes in how consumers shop and pay in the next three to five years than there were in the last 20." This statement, made by eBay CEO John Donahoe to The Financial Times last October offers perhaps the best summary of what lies ahead for retail. New technologies are changing buying behaviors which, in turn, are calling for even more technology, and there are some new buzzwords for it all. Multichannel retailing has evolved into omni-channel retailing, the customer experience must be delivered seamlessly across all those channels, and "big data" analytics is how it's to be done.

The omni-channel shopper is more connected, and she wants to be able to access any or all of her channels (mobile Internet devices, computers, bricks-and-mortar, television, catalog) at any time.

The omni-channel retailer will offer merchandise, promotions and a brand message that are consistent across all those channels, using data such as the

shopper's purchasing history, product preferences and personal information, to make that delivery as individualized and personally relevant as possible.

In its 2013 Trend Report, marketing research consultancy JWTIntelligence describes the changing retail landscape

> "ONLINE GAINS WILL NECESSITATE FEWER AND SMALLER (BRICK-AND-MORTAR) STORES THAT WILL NEED "EXCELLENT PEOPLE WHO ARE WELL PAID AND CAN ANSWER QUESTIONS."
> — WALTER J. SALMON

as a momentous shift toward a digital age that is forcing brick-and-mortar stores to examine new buying channels and technologies for a different kind of consumer. "At the end of the day all these things are replacing what existed a century ago when formal retail began

to take shape," JWT's Ron Magliocco said. "You'd walk into a shop, the shop owner or shop keeper would come out from behind the counter, he knew your name, he knew what you bought, showed you new things you might be interested in. You felt special, loved and welcome there. That went away with chainifying of the world and now the big chains are trying to replicate that using electronic, digital capability."

For brick-and-mortar stores, Walter J. Salmon, Harvard Business School professor of retailing emeritus, says the continuing growth of online retail will translate to big changes in formats, pricing structures and staffing in the years ahead. Gifts & Decorative Accessories Editorial Director Warren Shoulberg, reporting on Salmon's address to the February monthly gathering of the Retail Marketing Society, said Salmon expects online sales of durable goods to represent as much as 30% to 40% of all volume within a decade.

These online gains will necessitate fewer and smaller (brick-and-mortar)

stores that will need "excellent people who are well-paid and can answer questions," Salmon said. He thinks more stores will move away from commission-based compensation and toward higher initial salaries, citing The Container Store as an operation that has already adopted that model. "The average salary of an employee there is $48,000 and they received 260 hours of training. And they have a 10% turnover rate."

Retailers interviewed by Home Accents Today at this year's winter markets said social media, blogs, showrooming, HGTV's design shows and internet search engines have resulted in a much more knowledgeable consumer: "Today's tech-savvy shopper is smarter … has more product and design information at her fingertips." She knows what you're selling, what it should look and feel like, and how much it should be selling for. She expects high quality, bargain pricing and convenience, and if she doesn't get it, she can broadcast her disappointment to her social media community.

On the flip side, however, today's technology and information-gathering provides more opportunities for retailers to know their consumers, capture their attention and seal a deal instantaneously. As shoppers' purchasing and personal data becomes more available and less costly, it will become easier to predict shopping behavior, needs and desires, and to tailor offers and communications. JWTIntelligence calls this "Predictive Personalization," and says it is one way retailers can gain an edge in the complex new retail world. New technologies and more precise data analysis will also provide opportunities for retailers to better manage and allocate inventory, provide individual attention and concierge service, and be within arm's reach at the right moment.

As part of a recent three-part series on the past and future of retail, NPR's Audie Cornish interviewed Gartner
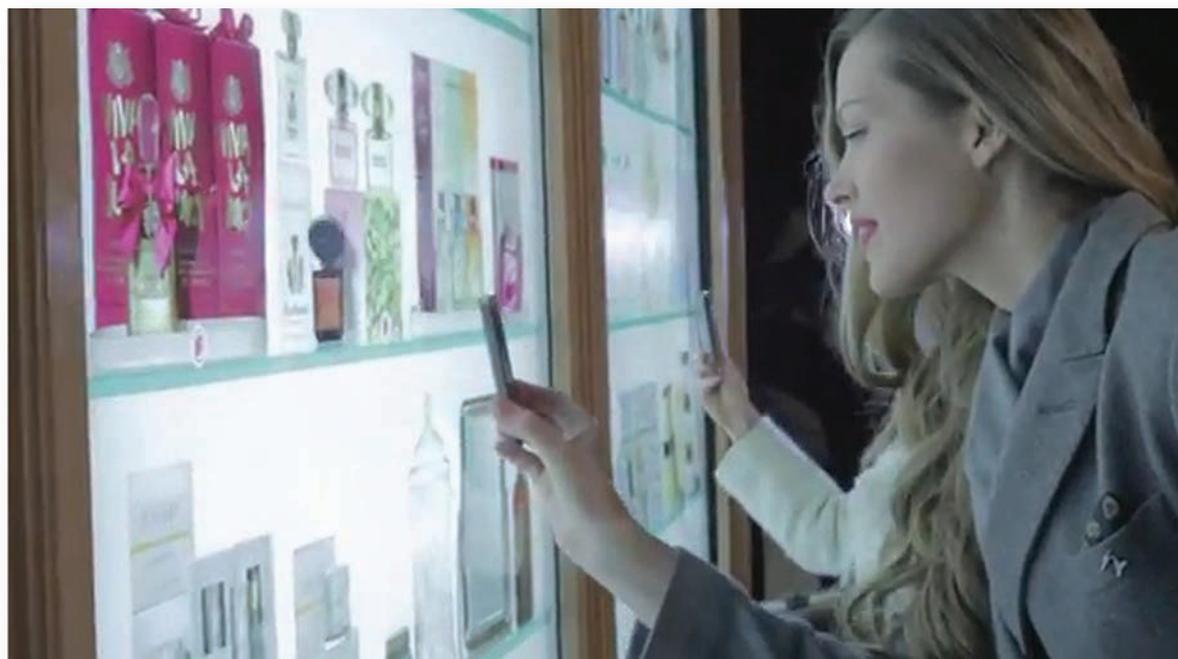
A shoppable wall, set up by Glamour at New York Fashion Week, let consumers shop beauty products from the magazine's advertisers by using a downloadable "Glamour Friends and Fans" app to scan barcodes with their smartphones.

Retail Consultant Bob Hetu. When asked what he's advising retailers to do to "build" the shopping experience, Hetu discussed the personalization concept and the importance of understanding the consumer so the retailer can present products that directly appeal to her, at a price and promotional activ-

> "IN THE PAST, FORECASTING SYSTEMS WERE LARGELY SEEN AS SUPPLY-CHAIN MANAGEMENT TOOLS. NOW SUCH SYSTEMS AND TECHNIQUES HAVE BECOME IMPORTANT TO EXPAND SALES OPPORTUNITIES."
> — ERIK SHERMAN

ity that make sense for her as an individual.

In the midst of a growing online marketplace, the physical store, said Hetu, will remain very important. "The future of it looks like we're going to see where people have registered online; maybe their cell phone number is part of the loyalty program," he told Cornish. "And they may be aware that you have pulled into the parking lot,

or you've entered the door, and they might be able to greet you by name. They may be able to offer you the ability to view certain products that they know, based on your past buying experience, are things you might like to have."

Neiman Marcus's new "NM Service" is an example of this kind of customized servicing. An iPhone app lets store sales staff view a customer's online and in-store purchase history, as well as some of the customer's "favorites." When the customer enters the store, an alert is sent to the sales staff so they can do things such as view the customer's Facebook profile photo for easy recognition, personalize a dressing room, and select a few possibilities for add-on sales.

Retail architect M.J. Munsell of Seattle-based Callison addressed the concept of personalization and customized shopping environments when Cornish asked what shopping in the future will be like. As an example, Munsell mentioned the customizable dressing rooms of Nordstrom, C. Wonder and Burberry, describing them as "… a sound-controlled environment where you can either plug in your iPad or iPhone for your own music, you can
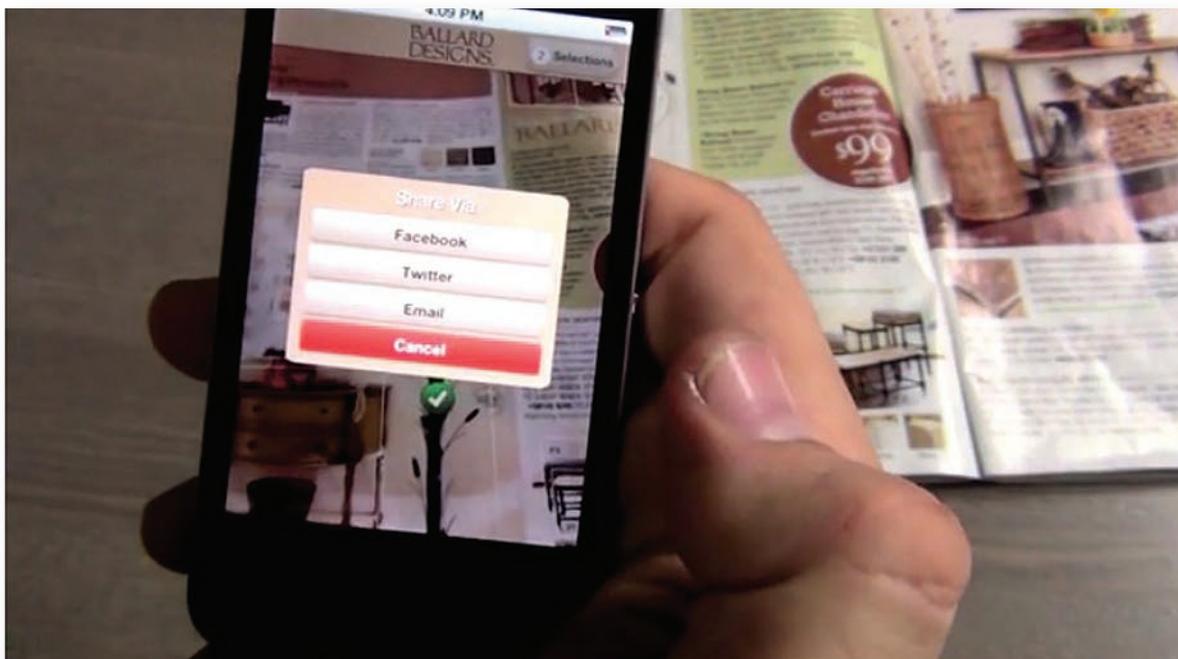
Ballard Designs recently launched Ballard+, an app that combines print direct marketing with mobile commerce by enabling the user to browse and shop the retailer's print catalog using image recognition technology.

adjust the light levels and have your own personal oasis." Imagine, Munsell said, taking that experience to an entire store. "We can digitally, I think, start to influence what that store looks like on a daily and even hourly basis ... It could even be minute by minute, where you could change the entire décor of a store and basically all surfaces would become a digital screen, including the floor. And with that would be the lighting, the feeling. It could go from a fairly traditional environment to, you know, more of a clean, pristine environment. All those things keep us interested in coming back and enjoying the experience."

BIG DATA, BIG POSSIBILITES

JWTIntelligence sums it up as putting brands and retailers in a position to better forecast which product or message to get in front of the consumer at which moment. For some retailers, it's as basic as using Twitter trends to help determine which products to stock where. For others, insights from loyalty programs are enabling the prediction of upcoming life changes or milestones (marriage, pregnancy, getting a new

pet, etc.) — events that cause a different level of spending or a different behavior, and for which purchase offers can be timed and tailored accordingly.

Adopters of geofencing (opt-in mobile programs that push promotions or other messages to shoppers when they're in, or within a virtual perimeter of, a store) are using the data to drive

> ANYTHING CAN BE A RETAIL CHANNEL, AND AN EVER-GROWING OFFERING OF NEW TECHNOLOGIES, GADGETS AND APPLICATIONS ARE MAKING IT HAPPEN.

interest in future purchases. In an October 2012 blog post, Harvey Koeppel of NewVantage Partners, a data strategy consultancy, said the push offers can be tailored to the customer's past purchases. A home furnishings store could offer 30% off a rug that matches a sofa the shopper bought three weeks ago, for example.

Retail consulting firm Retail Systems Research says that some of the best practices in big data analytics applications can be found in retail

forecasting and inventory management. A recent RSR survey of national retailers showed that companies that outperformed industry same-store sales averages tend to use and understand specialized computer software tools to manage specific aspects of merchandising, especially forecasting. Erik Sherman, in an August 2012 story for INC Magazine ("How Hi Tech is Changing Retail"), observed that three-fourths of the retailers surveyed said retail forecasting is "extremely important" to financial success, which he sees as an interesting shift.

"In the past, forecasting systems were largely seen as supply-chain management tools, where the focus was on reducing operational costs," Sherman wrote. "Now such systems and techniques have become important to expand sales opportunities, moving from a strictly bottom-line focus to a top-line one. As RSR says, 'Advances in hardware computing power make SKU-level forecasts not only feasible, but imperative.' Almost equally as important as demand forecasting is customer analytics. This makes a great deal of sense. You can't create a good demand forecast without understanding your customers and what they might want."

RetailNext is considered a leader in the collection and application of real-time shopping data for brick-and-mortar retail. This past January, at the National Retail Federation's Annual Convention and Expo, RetailNext exhibited some of the innovations and capabilities that are rolling out in the company's Q1 2013 release of its in-store analytics platform: multi-camera heat maps that help retailers better understand shopper browsing activities (versus buying behavior), a gender detection system that enables "highly accurate" reporting on the gender makeup of shoppers in any given store, and Wi-Fi-based analytics that measure the behavior of smartphones and tablets

in and around the store's environs.

Furniture Today recently reported about a company, Prism Skylabs of San Francisco, that monitors store traffic and is "in talks" with several furniture retailers. Prism is a cloud service that uses a retailer's existing store video cameras to monitor things like how long customers are waiting in line and where they're spending their time. Prism's reports include store images of "customer dwell time," computer-enhanced photos with colors that indicate the amount of time consumers are spending in a specific area (the more red, the more time spent). Retailers can see what products and displays are — and are not — capturing their customers' attention.

One of the presentations at the NRF's January conference included representatives from Walmart, eBay and GS1 US (formerly the Uniform Code Council) who discussed the need for an industry-wide standard to ensure products are classified in a common way, regardless of whether they are sold online or in stores. Traditional product classification systems were designed for brick-and-mortar applications and do not work well online, as they were based on a product's placement in the store.

For example, a women's pink T-shirt typically can be found in one place in a store — in the women's clothing department, on the T-shirts rack — and there's one path to get there. In a web store, that same single women's pink T-shirt might be found through several browsing paths (searches), in "Women's Clothing, T-shirts," "Designer Boutique," "Gifts for Mother's Day," "Women's Clothing — Think Pink!" and "Women's Clothing, Spring/Summer." Not only that, the query may be searched as a tshirt, teeshirt, t-shirt, pink shirt, etc.

A standard classification that supports how consumers search and discover, and is based on form, function and key product attributes instead of

Google is moving up the release of Google Glass, its augmented reality spectacles, to the 2013 holiday shopping season. The product, expected to sell for about $1,500, is expected to create significant applications for retail.

where it should be displayed on a site, would enable "new technologies such as predictive merchandising and more personalized content delivery." GS1 US is currently working with online retailers and content providers to explore the development of such a prototype. The successful implementation of such a sys-

BY 2017, MORE THAN A QUARTER OF MOBILE USERS IN THE U.S. AND WESTERN EUROPE WILL BE PAYING IN STORE USING NFC (NEAR FIELD COMMUNICATION) AND THAT NFC-ASSISTED PAYMENTS WILL GROW BY SEVEN-FOLD TO MORE THAN $180 BILLION GLOBALLY.

tem, combined with cloud storage and other new tools and technologies would help power the analytics component and inevitably drive down the costs of data processing and storage.

EVERYTHING IS RETAIL

In the omni-channel retail world, it's fair to wonder just how much "omni" we're talking about, and where and in what forms these personalized retail experi-

ences will be delivered. All signs point to anywhere and everywhere. Anything can be a retail channel, says the team at JWTIntelligence, and an ever-growing offering of new technologies, gadgets and applications are making it happen:

Windows. Interactive touch screens and QR codes have made window shopping a reality. Adidas NEO stores have received a lot of press for their exterior store windows, which feature life-size products on interactive mannequins, creating an irresistible digital draw for shoppers, passersby and the curious. Window shoppers are directed to a mobile URL which links their smartphones with the window transactions. The shopper can drag products into a life-size, on-screen shopping bag, edit details and save the bag for later purchase. In Toronto, during the 2012 holiday shopping season, Mattel and Walmart Canada created a virtual pop-up toy store with two walls of three-dimensional toy images and QR codes that consumers could purchase with a scan of their smartphone. In Amsterdam's upscale shopping area, The Nine Streets, Paypal partnered with 30 stores that posted QR codes on their windows. Passersby could purchase anything displayed in the windows by scanning the codes using a special mobile app.
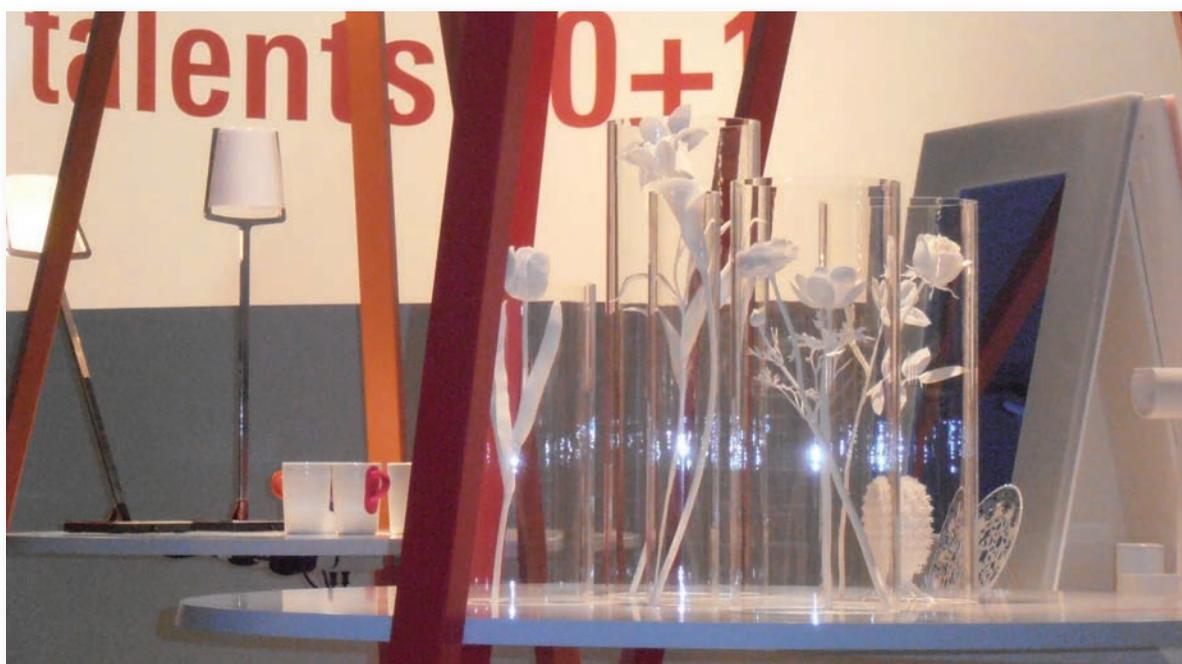
Floral stems, 3D printed in polyamide, exhibited by Studio Minale-Maeda at Tendence 2012, Frankfurt.

Walls. At last year's New York Fashion Week, Glamour magazine set up a shoppable "Apothecary Wall" that let consumers shop beauty products from the magazine's advertisers by using a downloadable "Glamour Friends and Fans" app to scan barcodes with their smartphones.

Home. Store Trek, developed by U.K. firm Keytree using Microsoft Kinect and 3D TV technology, is a 3D "immersive" virtual store, shown on a television screen in the comfort of one's home, in which the shopper walks down virtual aisles, reaches out to purchase (via "intuitive interaction") virtual products on virtual shelves, adds the products to a 3D basket, and pays for and arranges delivery via the retailer's online system. The virtual product selection is personalized, based on the shopper's purchasing history and preferences.

Interactive catalogs. Already an established channel, tablets offer easier browsing with the touch of a finger, and apps like Catalogue by The Find, which aggregates catalogs for simultaneous browsing. Catalogue is the most downloaded catalog app and won a 2012 Appy Award for the best Retail Shopping app.

Ballard Designs recently launched Ballard+, an app that combines print direct marketing with mobile commerce by enabling the user to browse and shop the retailer's print catalog using image recognition technology. The free app, which features "tap-to-buy" shopping, product details and reviews, multiple image viewer and

> "RETAILERS NEED NEW WAYS TO BUILD LOYALTY AND BRAND VALUE; PHYSICAL-STORE RETAILERS WILL NOT WIN IN THE LONG RUN BY FOCUSING ONLY ON PRICE MATCHING."
> — MARC SCHROEDER,

social sharing, works with Ballard's December 2012 early winter issue and is compatible with iPhone and iPad devices. Shoppers hold their iPhone or iPad above the page of the catalog to activate the app and connect to the digital experience. A box encompasses each item on the page, wherein users tap for product information. A touch of the purchase button directs items in the shopping cart to ballarddesigns.com for check-out.

"Our customers not only look to the Ballard catalog for home décor and accessories, but also for design inspiration and ideas," said Ryan McKelvey, president of Ballard Designs. "The Ballard+ app enhances the experience of flipping through the catalog each month by simply integrating a mobile or tablet device. Having the functionality of our online channels directly available with our print catalog creates an ease-of-use that will provide an innovative, digital experience for our customers."

A company called CinePrint has also developed a technology that adds a digital layer to print advertising. The technology was demonstrated in a recent magazine ad for the Lexus 2013 ES sedan. When users place an iPad beneath the ad page, the vehicle turns on to a soundtrack, the headlights illuminate, and the interior is revealed.

Television. Opportunities abound in television retail, or as some are calling it, t-commerce. Television apps like Shazam and Viggle are syncing users with television content and leading them into purchasing opportunities. FOX just announced it has partnered with Shazam, Viggle, ConnecTV and NextGuide to offer a syndicated network that will give viewers access to FOX's social, behind-the-scenes and interactive content while synced to the broadcast of their favorite television shows.

EBay's "WatchWith eBay" app let users buy products related to programming, and PayPal has been working with Comcast Cable and TiVo on television commerce, using remote control. Last summer, Tony Werner, Comcast's executive vice president and chief technology officer, said Comcast and PayPal were "in the very early stages of our discussions."

Delivery Agent, a "shopping-enabled entertainment company," has partnered with more than 350 media brands, television channels and cable

providers to enable viewers to shop with their remotes. Consumers register with the company's TV Wallet service, then sign in to shop. At this year's Consumer Electronics Show, the company announced a partnership with Samsung Electronics to offer Samsung Smart TV owners the ability to shop the shows they are watching.

While watching New Girl, for example, viewers can purchase clothing and accessories that Jess wears during the episode by either clicking the remote while watching the program — viewers will receive unobtrusive messages that this option exists — or by navigating to the application marketplace and accessing the "Shop the Shows" app, which is available 24/7 to Samsung Smart TV users.

"Television shows and entertainment have been setting consumer trends and shopping wish lists for decades," said Mike Fitzsimmons, Delivery Agent CEO. "The industry has always needed a solution to take the friction out of the buying process in order to harness and monetize the consumer demand. What Delivery Agent has developed, in partnership with Samsung, solves the technology, rights and supply chain issues that, to date, have held the t-commerce industry back."

SMARTER SHOPPING IN THE STORE

The brick-and-mortar store is also ripe for some technological enhancements. In-store computer screens, tablets and mobile apps will enlarge a store's product lines and depth and breadth of service. A growing number of retailers are offering click-and-collect purchasing — consumers shop and place their orders online, then pick up their order at the store.

Smart carts. Smart shopping carts are being developed with computers, motion sensing technology and GPS to make shopping lists, recommendations and check-out easier. Stores are experimenting with RFID tags, digital dressing room mirrors, and clothes hangers with tiny screens that display the item's Facebook likes. Imagine if you entered your shopping list on your smartphone, and once you arrived at your store, it provides you a map of where to find each item on your list.

Smart packaging. Smaller chips translate to hidden and embedded technology, especially in packaging. Conductive circuits can be placed directly on packaging for inventory control, security or functionality (think talking pizza boxes). ScentSational is a coating that releases a scent when a package is picked up. Thermochromic inks change color based on temperature. Last year marked the debut of Siren — a non-theft device embedded directly in the package instead of being affixed later at the store — that sets off an alarm if the product is cut, torn or stolen.

Augmented specs. This year will mark the dawn of augmented reality glasses, which could create significant applications for retail. Google is moving up the release of Google Glass, its augmented reality spectacles, to the 2013 holiday shopping season. The product, expected to sell for about $1,500, has a built-in microphone, camera, speaker and screen, so wearers can access information about their surroundings. The glasses can film video and automatically snap photographs at pre-set intervals (every five seconds, for example). JWTIntelligence suggested the following retail application: "When the user is in a store, the glasses would identify products and automatically display info such as nutritional information, consumer ratings or complementary items." Headset maker Vuzix expects to beat Google to market with the release of its "under $500" smart glasses this summer. Microsoft also has a patent for augmented reality glasses.

Mobile wallets. Get used to this term. Instead of paying with cash, check, or credit cards, more and more consumers will use their mobile phones. Juniper Research predicts that by 2017, more than a quarter of mobile users in the U.S. and Western Europe will be paying in store using NFC (near field communication) and that NFC-assisted payments will grow by seven-fold to more than $180 billion globally. Asian markets are ahead in the use of mobile transactions, with an infrastructure for mobile payments installed everywhere from train stations to taxis and vending machines. In Japan, a quarter of mobile users manage their finances and pay for products with their phone, according to TNS/Kantar.

Passbook is an Apple mobile app that functions as a virtual wallet, aggregating a user's loyalty cards, digital passes, vouchers, coupons and membership cards so he doesn't have to carry around the plastic and paper versions of these. Geo-location technology can alert the user when he is near a store or venue that accepts them. But this is not just technology for large chain operations. PassKit is Apple's "easy-to-use" interface for business owners who want to create, distribute and manage coupons, tickets, store loyalty cards and membership cards for Apple Passbook.

Early users weren't too enthusiastic about Passbook's offerings, but as major brands have come on board, the reviews have been more positive. Forbes writer Christopher Versace is one such convert, noting in a November story that a "growing list of companies now offer Passbook-integrated coupons through Coupons.com, other vendors or on their own." Versace also pointed out that Passbook doesn't require the merchant to make a major investment in updated card scanners or POS equipment to work with Passbook, unlike NFC technology, which requires many businesses to upgrade their checkout systems.

So far, home décor and department store brands using Passbook apps and

coupons include: Pottery Barn, Pier 1 Imports, Sears, Walmart, Williams Sonoma, Bed Bath & Beyond, Target, Bon-Ton, Michaels, Shopko, Sears, Yankee Candle, Anthropologie, Bloomingdale's, Burlington Coat Factory, Dillard's, Hobby Lobby, JC Penney, JoAnn Fabrics, Kmart, Kohl's, L.L. Bean, Lowe's, Macy's, Michael's, Neiman Marcus and Nordstrom.

Google Wallet has partnerships with 25 U.S. retailers so far, according to JWTIntelligence. Users input credit or debit card details into the app, then pay in stores by tapping their smartphone to a payment terminal. Verizon collaborated with AT&T and T-Mobile to create Isis Wallet, also a hub for loyalty cards and coupons. Square Wallet links with a user's credit card — the user opens the app and the retailer scans a transaction-specific AR code.

Martine Reardon, Macy's CMO, spoke about the retailer's mobile commerce initiatives at the NRF's January conference. Macy's is testing Google Wallet in five markets, Isis Wallet in two markets, and an Apple Passbook integration is underway.

BYTE BACKLASH

For all the advancements brought on by these new technologies and shopping behaviors, there exist more than a few concerns.

Loss of privacy. One of those concerns is the loss of privacy that this new level of personalization and customization may bring. Surveys by JWTIntelligence revealed that more than half of respondents would feel "creeped out" if the retailer appears to know too much about a customer. However, the results also showed that Millennials, America's largest generation and one with tremendous spending power, are much less likely to feel anxious about having their data tracked.

Gartner's Bob Hetu, in discussing the issue on-air with NPR's Audie Cornish,

advised retailers to be mindful of the "creep factor" and stressed the importance of earning the customers' trust. "One of the things that our research shows is that consumers right now don't have a high trust level with retailers. However, our research also shows that when you start to simply give them the opportunity to get some better pricing and discounts, or better service, consumers tend to get over that privacy issue relatively quickly."

Creative rewards programs with special offers, private sales, members-only discounts and some sort of service or convenience will become an even more important vehicle for earning consumers' trust, loyalty — and personal data.

The JWT report mentions Lowe's loyalty card as an example of a "good stepping stone … earning consumer trust by providing utility." The MyLowe's card, which is different from a Lowe's credit card, stores the customer's online and in-store purchase history, and provides online entry and storage of room dimensions, worksheets, appliance information and warranties. The idea is that matching paint colors, buying replacement parts and purchasing rugs and window treatments are easier if the information is already stored in your MyLowe's account.

Showrooming. Showrooming, the practice of visiting retail stores to try products but then checking a mobile device for the best price online, is only going to get worse. A survey developed and conducted late last year by Aprimo/Teradata and Forrester Research analyst Sucharita Mulpuru found that one in five consumers is now showrooming. Of those, 33% said they used the information to buy elsewhere. At the January NRF conference, Mulpuru said in a presentation on the subject that four in 10 smartphone users search for an item and research prices while they're right in the store.

"Retailers are eager to see data like this because it helps them shape strat-

egies to compete as mobile devices continue to disrupt the status quo," said Marc Schroeder, vice president, Industry Solutions at Aprimo. "The opportunity here is to leverage technology and common sense and shift to a customer-centric value proposition through better service, smarter timing and relevant offers. Retailers need new ways to build loyalty and brand value; physical-store retailers will not win in the long run by focusing only on price matching."

In addition to loyalty programs and brand experiences, there are reports of retailers combating showrooming with price-matching models, more consistent pricing across channels, and branding.

Chad Harris, owner of lifestyle retailer The Garden Gates in Metairie, La., spoke with Home Accents Today earlier this year about the importance of branding, advice he's been sharing with other retailers via seminars and speaking engagements. "My seminar is more about looking at your company and making sure your company brand is directed to the right consumer — that the products you're selling are consistent with what you say you are. Consumers have to buy into the idea that you are one with them — that they believe in you and you believe in them. Once you find that magical equation, they flock to you. You're then competing on quality and your brand, instead of price."

COUNTERTRENDS

The digitization of our culture is also giving rise to several counter trends, according to JWTIntelligence, such as a desire for simpler, technology-free items that "counterbalance the constantly connected world." Look for interest to grow in artisanal products, items that are handcrafted or made with traditional materials and processes, and things that feel more intimate and human.

As more of life goes virtual and online, JWTIntelligence's trend report

states, sensory stimulation becomes more important. A November survey by the company revealed that 57% of American and British adults increasingly crave experiences that stimulate their senses. Nearly eight in 10 of respondents said they value experiences more than they do material items, and two-thirds said they'd rather spend money on an experience than a material item. Shoppers, therefore, "can still be enticed away from their computer screens if retail offers something more than they can get online, including a rewarding sensory experience."

IN THE SHORT TERM

For the immediate future, big box brick-and-mortar retailers appear to be budgeting more of their dollars in mobile. A January 2013 report by RIS News, The Mobile-Driven Store, looks at how retailers are making IT plans for 2013 and beyond. For the study, a collaboration between RIS News and IHL group, 53% of responses came from retailers with more than $1 billion in revenue, and included TJX, Meijer, Sears, Home Depot, BJ's Wholesale, Hannaford Brothers, IKEA, Rite Aid, Macy's and Walgreens.

The report says that 74% of respondents expect to increase their IT spending on big data in the coming year, and close to one-third of retailers are looking to adopt tablets or handhelds in the next 12 months. "Mobility is a big point of focus for such retailers as Home Depot, Lowe's, Nordstrom and others, which have rolled out hundreds of thousands of devices to their stores. The motivation, in part, is to put store associates on a somewhat equal footing with smartphone-wielding customers."

The report also says 80% of specialty retailers plan to increase their mobile budgets in 2013, and iPad is the leading mobile platform under consideration (by 25 percentage points), with iPhone and Android tied for second. Depart-

ment stores plan to increase mobile spending, but decrease overall IT spending in 2013. Retailers planning to use mobile POS in the next three years anticipate a 12.4% decline in the number of traditional POS terminals they will purchase.

Of those surveyed, 66% are planning to open new stores in 2013 and 58% are planning an increase in IT headcount. The average IT budget growth is up 4.8% over 2012.

Online retailers have put site optimization ahead of mobile optimization when it comes to top priorities for 2013. According to the 2013 Shop.org/Forrester Research State Of Retailing Online survey, this year's top priority for 51% of online retailers is site optimization, including checkout optimization, alternative payments, user experience, testing and product detail page enhancements. Forty-three percent of the online retailers surveyed plan to invest in new or improved mobile apps and mobile-optimized sites, analytics, and traffic and conversion growth, and 27% plan to prioritize site redesign, including overhauling "look and feel" and implementing responsive design changes.

THE NEXT BIG THING

Within the past six months, 3D printing, which lets people design and/or order, and print, objects made from plastic, glass, metal, wood filament and other materials, officially made the move from the world of prototyping to mainstream retail.

A MakerBot 3D printing store opened in Manhattan in September, and two stores — Aleph Objects and The 3D Printing Store — opened in Colorado in February. The 3D Printing Store blogged about the crowds that showed up for its Feb. 7 open house — more than 400 people crowded the store, with many making appointments to come back.

Some bloggers and analysts are say-

ing 3D printing could bring about enormous changes in retail, especially as the technology and printing "media" continue to evolve. Consumers will one day be able to visit a 3D printing shop and design or print whatever they desire or need, exactly to their specifications. With some printer models priced at less than $2,000, it's already a somewhat affordable appliance for the home.

According to a growing number of online videos, photos and testimonials, 3D printing technology not only has the potential to turn consumers into designers and manufacturers of their own toys, household objects, gifts, gadgets, lamps, lighting fixtures, art, tableware and decorative accessories, it already has. ■