

retail  
TouchPoints®

# 2017 Technology Preview

**Exclusive Predictions  
From 15 Retail Executives**



# Retail Executives Share Technology Predictions For 2017

For the fifth year, *Retail TouchPoints* has asked leading retail experts to share their insights on what to expect from new technologies and trends in the coming year. We have collected input from 15 executives who have shared fascinating, and sometimes surprising, predictions.

Each executive was asked to answer the following question:

**Which technology trend will impact the retail industry most significantly in 2017 (and why)?**

For the 2017 report, we have split the predictions into 6 different categories. Columns are listed alphabetically by company name within each category.

Let us know if you agree with these executives. Happy Reading!



*Debbie Hauss*

Debbie Hauss  
Editor-in-Chief



# Retail TouchPoints

## 2017 Technology Preview

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## Big Data/Analytics

# Gary Sankary

Retail Industry Manager, Esri



## LOCATION WILL DRIVE CUSTOMER ENGAGEMENT

There are three key retail trends that will not only continue, but intensify in 2017:

- 1) Retailers will seek out **sustainable opportunities to grow incremental sales**. Although many retailers have slowed their store growth in the last several years, they're still facing pressure to grow sales. This means finding a way to do more and get more out of the doors they already have.
- 2) Connected consumers will demand **even more personalized offers and experiences**. With growing consumer transparencies around price, availability and quality, engaging customers and earning their loyalty will become more difficult.
- 3) **Data, particularly big data, is exploding**. As the IoT (Internet of Things) matures, the amount and types of data available for retailers will grow exponentially.

It's pretty clear that retailers will have to work even harder to engage their customers and build relevancy in 2017. They'll focus on driving customer loyalty, growing market share and better understanding their customers, stores and enterprise.

The key to actually doing all of this? Data.

Retailers already have a tremendous amount of data available to them, and it's coming from a myriad of sources: point of sale, mobile channels, consumer devices, inventory tracking and in-store sensors. Every transaction

in retail leaves a trail of individual data points from different silos that hold the promise of greater insights.

The problem is that data by itself is rarely useful. What retailers really need are insights, and the ability to generate them quickly, from their data. One surprisingly powerful way to do this is by viewing data through the lens of location. Maps make visual data mining accessible to anyone, even those with little data or technical experience. They enable people to instantly spot and explore patterns and relationships in their data.

GIS adds precision to retail execution. Every sale, every unit of inventory, every employee, competitor, and customer all have some relationship to a specific, real-world location. Now imagine what we could do if we tapped into that data through those locations? This is exactly the reason that I believe 2017 will bring an increased awareness of the importance of the science of where.

Location provides a common thread that can bring together data from disparate sources with the common attribute of where. It provides answers about why things happen where they do. It answers questions about where to put a new store and how to merchandise an existing one. Location alone is uniquely suited to give retailers a real-time understanding about what factors will affect a store, a supply chain, the competition, the transportation networks they use, and the demographics of their target markets. Even better, as you start to correlate data with location, you can predict

**"It's pretty clear that retailers will have to work even harder to engage their customers and build relevancy in 2017."**

- Gary Sankary, Esri

outcomes and find new opportunities across your entire enterprise.

Patterns in large datasets, like in-store traffic from lighting beacons, unlock new data-driven insights about which locations and displays in stores truly drive traffic. They can even settle decades-old debates about whether it's better to place frequency items like milk at the back of the store or in the front. If retailers are truly interested in providing personalized experiences (online and in-store), they must know where their customers are coming from and who's likely to shop them, to ensure the assortment matches the demands of the neighborhood. Location holds the key to those answers.

In the battle for mindshare and wallet share, I have no doubt that providing customers with more personalized offers and merchandising stores with localized assortments will be key strategies.

Customers are demanding it. The competition is doing it. The science of where will enable it.



# Big Data /Analytics

## Jeff Smith



Founder and EVP, Corporate Strategy and Development,  
Revionics

### DATA SCIENCE WILL DRIVE RETAIL COMPETITION IN 2017

I think we'll see a huge impact from the application of data science to help retailers compete more effectively in an omnichannel world. It's a given that the variety and quantity of data available to retailers continues to explode. Increasingly retailers have access to affordable, highly scalable machine learning and artificial intelligence capabilities to unlock business-critical insights from their data.

Retailers in all sectors must step up to the reality that their customers can shop 24/7 across all channels. Amazon's continued expansion into fashion is just one example of the need for an entire retail sector to adopt omnichannel strategies to effectively compete.

The cross-channel view extends to the supply chain as buyers fully expect to buy anywhere, fulfill anywhere and return anywhere. Similarly, pricing solutions need advanced science that factors in inventory constraints and various fulfillment and return models, including buy online/ship to store and return-anywhere options.

High-frequency, science-based automated pricing that is highly responsive to fast-changing market

conditions and customer behaviors — what some term “dynamic pricing” — is a perfect example of a now-mainstream requirement of science for data-driven retailers.

Retailers will need to embrace technologies that enable more responsive price changes, from real-time competitive monitoring and price recommendation algorithms to electronic shelf labels. Consumers don't differentiate between channels and are less and less tolerant of retailers that lack a coordinated cross-channel price strategy. Even in late-adopter sectors like grocery, online grocery is growing rapidly, necessitating a consumer-centric view of the shopper journey — independent of channel.

Finally, the proliferation of new formats and the aggressive entry of discounters like Lidl is a further wake-up call to embrace cross-channel science-based pricing capabilities so that retailers, in grocery and beyond, know exactly when, where and on what items they need to respond with aggressive pricing — and which items shoppers are less price sensitive on, allowing for margin and profit recovery.

**“Retailers in all sectors must step up to the reality that their customers can shop 24/7 across all channels.”**

**- Jeff Smith, Revionics**



## Big Data / Analytics

# Tom Bianculli

Chief Technology Officer, Zebra Technologies



### DATA SCIENCE WILL DRIVE RETAIL COMPETITION IN 2017

Consumers are increasingly checking off their holiday shopping lists from home rather than braving the crowds and chaos. In fact, this year's Black Friday saw the biggest jump in desktop sales for any single day compared with last year, increasing 19% according to comScore.

However, a recent study from [PricewaterhouseCoopers](#) challenges the continued growth of e-Commerce. The study shows the Gen Z group — the demographic of roughly 2- to 19-year-olds directly following Millennials — is more apt to visit physical stores than previous generations. This is a significant development given Gen Z is now the largest age demographic in the country. There's a clear opportunity for retailers to capitalize on this new preference by making brick-and-mortar shopping just as easy and satisfying as browsing and completing transactions online.

Currently, brick-and-mortar stores are under tremendous sales pressure owing to the growing popularity and adoption of e-Commerce, and — more recently — the click-and-collect retail business model, making it a necessary move to shift their business online. Retailers worldwide lose a staggering \$1.75 trillion annually due to the cost of overstocks, out-of-stocks and needless returns, according to retail analyst firm IHL Group.

Through real-time sensing of what is happening in a store environment and combining that with data analytics and mobility, we'll see the intelligent brick-and-mortar store come online. Empowered by new insights and greater business intelligence, retailers will deliver frictionless customer service, elevating the physical shopping experience. Armed with greater asset visibility, the following scenarios can become reality:

- A sales associate at a crowded clothing store can pinpoint the exact location of a misplaced pair of jeans to ensure the customer goes home with the pair with the perfect fit;
- A display manager can make sure the store's best-selling items are always on display during peak periods — increasing store sales by up to 20%;
- A serious buyer in the market for a new TV is quickly greeted by the best suited sales associate, increasing the likelihood of a sale and satisfied customer; and
- A customer who buys online for in-store pick-up can drive to the store with near 100% certainty that they won't go home empty-handed due to inventory inaccuracy.

**"While e-Commerce may continue to grow as the shopping platform-of-choice for the next few years, Gen Z-ers are getting closer and closer to becoming decision makers."**

**- Tom Bianculli,  
Zebra Technologies**

With improved real-time visibility, retailers can take unprecedented control of their inventory — enabling lower-cost, more efficient store operations that decrease stocking costs and markdowns, increase sales and minimize labor costs.

While e-Commerce may continue to grow as the shopping platform-of-choice for the next few years, Gen Z-ers are getting closer and closer to becoming decision makers. Now is the time for retailers to upgrade and streamline their in-store customer experience through greater asset visibility and business intelligence.





# Cloud/IT Infrastructure

## Greg Griffiths

VP of Product Marketing, EarthLink



### THE AGE OF SD-WAN BEGINS: SUDDENLY, THE WAN IS COOL AGAIN

At the recent [Gartner Data Center show](#), I came to one conclusion: **The WAN is cool again.** I'm borrowing that phrase from a conversation with an attendee at our session on SD-WAN. During that, and many more in our booth, I realized the key driver generating interest in SD-WAN is the incredible technology itself. SD-WAN isn't just another shiny new technology that ends up overpromising and under-delivering. Rather, it's a must have for retailers seeking to improve their in-store digital experience/improve agility by moving apps to the cloud. It also delivers everything needed to feed anyone's inner techno geek!

While others in networking might cringe at this suggestion, the truth is, the WAN has been uncool for years because the underlying technology has grown stagnant. To be frank, the user experience was poor from a reliability/performance standpoint, and steadily getting worse as IT looked increasingly to the cloud. It was also cumbersome to install and expensive. You might even say it became boring. No wonder many IT professionals avoid WANs as an area of discipline!

#### A Perfect Storm/Network Bottleneck Years In The Making

To understand why the WAN is cool again, we have to understand why it was developed. First, retailers of every size (especially small box) are already bandwidth constrained. Meanwhile, bandwidth demand doubles every 18 months as they look to deliver seamless customer

experiences — online, mobile, in-store — incorporating applications like centralized order management.

Second, the move to cloud-based, best-in-breed apps is exponentially increasing the need for high performance networks. And yet, the vast majority of CIOs can't provide service level objectives to internal customers at the application level. They can't "dial-in" performance of critical apps, and most lack visibility into application performance. That's a perfect storm when you consider the hard work and resources spent transforming IT into a strategic business driver.

In short, we have a roadmap for where we want to go, but traditional network designs keep us from getting there in a cost-effective manner.

#### The Right Technology At The Right Time And Place

Enter access-agnostic, cloud-optimized SD-WAN. Less expensive plus better performance is always good — in fact, it's the foundation this industry is built on — but just as important is the cool factor. Here again, SD-WAN delivers. The technology is application aware, delivering visibility and real-time control to dial-in desired performance levels for critical apps. It also uses packet-based dynamic path selection (this even sounds cool!), allowing multiple circuits to work together, providing performance on par with MPLS with better uptime. In fact, if you use multiple, diverse connections, you

**"As anyone in IT knows, 'cool' plus business value is the best combination you can have. And it's going to be a winning one for retailers in 2017."**

**- Greg Griffiths, EarthLink**

can achieve 100% uptime. That may sound boastful, but with SD-WAN, it can actually be true. Ask any network manager and they'll say that's pretty darn cool, too.

All of which explains why when you demo SD-WAN, and people see the visibility and control it offers, and how easy it is to provision new locations, then you unplug the primary connection without disrupting a VoIP or video session, you hear people say things like, "that's way cool!"

For a guy like me who's been around networks for a few years, I have to say — it feels good to hear that. If you haven't seen it yet, I'll wager you'll say the same kind of thing. You might even find your team clamoring to manage the WAN again. As anyone in IT knows, "cool" plus business value is the best combination you can have. And it's going to be a winning one for retailers in 2017.



## Customer Experience

# Christopher Krywulak

President & CEO, iQmetrix



## 2017: THE YEAR OF THE STORE

The next big thing in retail technology is beacons, virtual reality, cashier-less self-checkout, mobile payments, mobile everything, RFID, robots, chat bots... I can confidently say there isn't one retail technology trend that is going to clearly stand out in 2017 as the must-have solution. Don't get me wrong, there's a lot of really cool innovation happening in retail tech right now that I'm really excited about, but the in-store experience is fundamentally broken. There isn't a one-size-fits-all solution that'll fix that. 2017 won't be about one technology trend — it'll be about the retailers who figure out the right mix of online-like experiences that provide what today's customers are looking for.

### What Problem Are You Trying To Solve?

There's a major shift happening in retail right now. The in-store experience has lagged behind a lot of the innovation. There's been a big focus on e-Commerce and mobile that has left physical stores in rough shape. Consumer behavior and expectations have changed drastically and stores simply haven't kept up. 2017 needs to be the year of the store. Now, before rushing to implement any new technology, you have to start with a very clear understanding of the problem you're trying to solve for your customers. Attracting shoppers in-store has become increasingly difficult. Implementing trendy technology might get you some attention in the beginning but in order for it to be sustainable, it has to connect to the

larger picture. It has to make sense, be seamless, and connect with the overall brand story you're trying to tell.

### What Does The Blended Store Look Like To Your Customer?

We often hear about blending online and in-store, but how do you actually do that? What online experiences do customers want in-store? Let's break it down. What drives consumers to shop online? Many would point to convenience, selection and a wealth of information. What brings shoppers in-store? Quite often it's immediate gratification (granted, only if you have what they're looking for in stock), the ability to touch and feel, and the assistance and knowledge of sales associates. On top of that, shoppers today crave experiences, which means retailers have to consider more than just the purchase as a reason for people to come into your store. Shoppers want to connect with brands that are integrated into their lifestyle and allow them to share a social experience. Blending in-store and online should be about bringing all these qualities together. So again, focus on finding solutions that address these areas. If you can't trace it back to improving one of the above pain points, don't do it.

### How Do You Keep Innovating?

Retail is constantly evolving with the ever-changing consumer. You'll need to be improving your in-store experience continuously, which means you have to be ready for what's next. Make sure

**"Consumer behavior and expectations have changed drastically and stores simply haven't kept up. 2017 needs to be the year of the store."**

- Christopher Krywulak,  
iQmetrix

to choose solutions that are built on a platform and utilize open APIs. Simply put, this means your solutions can "talk" to each other and can plug in to your existing tools, as well as whatever you may want to add in the future. It's also important to choose your partners wisely. Align yourself with like-minded companies that have a proven track record for innovation and thinking ahead.

So while my advice may seem more daunting than pointing to a single new trend, taking steps toward improving your in-store experience in 2017 is definitely doable. Look at the big picture of what you want to achieve and break that down into tests. Evaluate new technologies through pilots or rollouts, collect the data, analyze it, and either adjust or move on to the next test. You don't have to fix everything at once. Keep it simple. As Mark Twain said, the secret of getting ahead is getting started.





# Customer Experience

# Tushar Patel

CMO, Kibo



## UNIFY SILOED TECHNOLOGY TO DELIVER SEAMLESS AND RELEVANT CONSUMER EXPERIENCES

Providing a seamless and relevant shopping experience to consumers is no longer an option for retailers. In the coming years, successful omnichannel programs will belong to agile sellers that have a 360-degree view of their customers. With a constantly evolving space, retailers need to be nimble and experimental in their commerce approach and in control of their omnichannel initiatives. Consumers' demands and expectations will only continue to grow. With speed and ease, retailers need to change their site, add new fulfillment channels, reinvent the in-store experience, add pop ups and more. When sellers can adapt their offering based on consumer behavior with the click of a button, they will outpace the competition every time.

Retailers are faced with trying to provide this seamless experience while managing merchandising, promotions, site design, fulfillment and store operations that are often in siloed, legacy technology. A unified omnichannel experience will come by unifying commerce technology. By knowing a consumer's behavior at all touch points through the buying cycle, retailers can provide a relevant experience, giving consumers the products they want with their preferred fulfillment option.

There are a number of key trends retailers need to consider to get the most return from their omnichannel technology in 2017:

### Cloud-Based For Ultimate Agility

Flexible cloud architecture provides retailers continuous innovation, low

total cost of ownership and real-time scalability. Retailers can future-proof their technology stack with a constantly evolving platform so they always have the most advanced functionality in omnichannel technology. New solutions can go in quickly yet grow to last for years to come.

### Going Beyond Personalization

One solution to increase engagement and conversion is by individualizing a shopper's experience. Individualization takes personalization to a deeper level. Simple product recommendations targeted to large market segments are no longer enough. Individualization utilizes advancements in big data and real-time technologies to enable massive storage and computation of consumer data. It's now possible to collect, store and use data about individual browsing and purchase history, trends, and intent across touch points — digital and in-store. Using data at an individual level gives retailers the ability to better understand and react to each consumer, based on their behavior and preferences. Retailers leveraging next-generation personalization technology have seen conversion rate improvements ranging from 200% to 600% and average order value (AOV) improvements ranging from 6% to 46%.

### Enterprise-Wide Inventory For Successful Omnichannel Fulfillment

The backbone of a successful omnichannel consumer experience is a global view of inventory across all retail locations. This single source of

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- Tushar Patel, Kibo

real-time inventory data serves all omnichannel consumer touchpoints: e-Commerce, retail stores and customer call centers. When retailers can access all inventory available-to-promise, they will increase sales conversion rates based on flexible fulfillment options and decrease order abandonment rates from out-of-stock conditions.

With enterprise-wide inventory visibility, retailers can more easily deploy sophisticated omnichannel fulfillment models with a distributed order management system, quickly getting products into the hands of their customers. Easily group and prioritize your fulfillment locations to meet your unique business needs, ultimately helping to reduce product markdowns, improve operational efficiencies, and delight consumers with a seamless fulfillment experience.



## Customer Experience

# Nick Pompa

ShopperTrak General Manager, ShopperTrak



### TAILOR IN-STORE OPERATIONS TO IMPROVE CUSTOMER EXPERIENCES

Successful retailers are constantly adapting their in-store practices to address changing consumer behavior. Looking ahead to 2017, brick-and-mortar retailers — from large-scale department stores to smaller boutiques — will need to use shopper behavior technologies, including traffic counting, to better understand their consumers and appropriately shape their operations.

Due to the increased level of competition today's retailers face — across online and in-store — retail traffic and consumer behavior technologies offer valuable insights that enable brand differentiation. Essentially, retailers can tailor in-store operations to better meet consumer expectations and provide an enhanced experience. Examples of this include:

- Leveraging retail traffic counts to more adequately staff stores during peak hours and ensure an optimal STAR (shopper-to-associate ratio), which, in turn, increases sales and conversion rates;
- Utilizing shopper behavior insights to recognize the flow of shoppers throughout the physical store, adjusting the layout and displays to enhance in-store offerings and increase conversion as well as ATS (average transaction size); and
- Aligning associate tasks according to traffic counts in order to better meet customer demands and avoid leaving shoppers unattended, due to associates spending labor hours stocking or folding as opposed to working directly with customers.

A critical factor to consider when determining how to tailor in-store operations in a specific store is how a retailer is determining the parameters for success or failure. That is, when retail leaders set a traffic or conversion goal for a single store, how are they arriving at that set goal? And is the goal one to which they can reasonably hold the store accountable?

2017 is the time to take data analyses to the next level. If they're not already doing so, forward-thinking retailers will look beyond single-store performance and appropriately consider each store in the context of a grander ecosystem of stores. This entails segmenting stores into "like" groups that all have similar performance expectations. These "like" groups, or peer groups, should be informed by individual store attributes that affect overall performance: for example, socioeconomic demographics of area, geography, seasonality, etc.

Proper peer grouping techniques, when combined with efforts to optimize various facets of the physical stores via traffic and shopper behavior insights, allow retailers to create tailored best practices and sales goals for individual stores using a data-backed approach. Ultimately, this enables retailers to better delight shoppers, grow their bottom line and positively distinguish themselves from a variety of competing brands.

**"Due to the increased level of competition today's retailers face — across online and in-store — retail traffic and consumer behavior technologies offer valuable insights that enable brand differentiation."**

**- Nick Pompa, ShopperTrak**

As the retail landscape shows no signs of slowing down, retailers that implement thoughtful technology solutions rooted in the physical store will see long-term success and prevent themselves from being another victim of competition.



## Customer Experience

# Robin Copland

VP of Retail for the Americas, ThoughtWorks



### ADVERTISE LESS, INNOVATE MORE: CLEVER DOESN'T CUT IT

Customers are increasingly “opting out” of the advertising world. They skip, ad block and pay premiums for ad-free entertainment. The rise of ad blocker solutions and paid ad-free media platforms — from Spotify to Netflix — is testimony to consumers’ desire to opt out. Once a surefire way to get customers amped up and informed about your brand, traditional advertising is becoming less essential to brand building as customers lean on search, social and reviews to find things they want and make key buying decisions.

It’s no longer enough to be witty, hilarious or touching for 60 seconds and then deliver a ho-hum product or retail experience. Winning brands in 2017 will take the creativity and customer insights once invested in advertising and reallocate it to creating better, more convenient products and an agile organization that can test, launch and scale quickly.

#### Customers Have The Upper Hand

According to a 2016 study by [MasterCard](#), 80% of shoppers say “technology makes me smarter” because they’re able to easily compare products, prices and reviews. Technology has leveled the playing field — brands can no longer compete on ad budget alone, making it easier for unknown brands to totally disrupt a category. For example, think of Dollar Shave Club’s challenge to Gillette and the Honest Company’s upending of the home and lifestyle product category. Both companies turned to advertising as they matured and raised funds, but

initial success was due to convenience and desirability of the product. The fast-moving challenger brand will become even more prominent in 2017.

#### Advertising Rules Of The Past No Longer Apply

In his talk [‘Death of the Industrial Advertising Complex’](#), Scott Galloway of L2 points out that nowhere is the declining influence of ads more apparent than the mega-spend auto and beauty industries. Four of the top five auto industry advertisers lost share in 2016, bested by younger, more innovative counterparts. In beauty, savvy shoppers have moved beyond adverts that rely on special effects, opting instead for real people posting honest reviews and tutorials. This has led some brands, like Cover Girl, to replace models with beauty bloggers in their ads.

[Domino’s Australia](#) is another good case to illustrate the creative reallocation of advertising efforts. The company decided to move some of their budget away from traditional ads to create Pizza Mogul — a loyalty platform that allows customers to create their own pizza, promote it across social networks or by any other creative means, and earn a piece of the profit for every pizza sold. In 11 months, the platform had 63,000 users, 130,000 pizza creations and more than 10,000 pieces of user-generated content.

#### Now What? Do This Instead

What do high-performing brands spend on instead of traditional ads? The answer is real product innovation

**“Technology has leveled the playing field — brands can no longer compete on ad budget alone, making it easier for unknown brands to totally disrupt a category.”**

**- Robin Copland, ThoughtWorks**

and better distribution. While the top auto companies continue to crank out ads on winding roads, Tesla has been focused on building driverless cars. In beauty, while traditional brands shot glossy ads of impossibly wavy hair, challenger brands built more desirable products, with higher-quality ingredients and Instagram-worthy packaging. High-performing brands also spend extensively on new platforms for product discovery, making it easy to find and buy with investments in influencers and search.

So, what’s your plan for 2017? Let’s advertise less, innovate more. Let’s organize teams, budgets and culture to build lasting loyalty via better products and experiences, not glossier 60-second spots. And finally, let’s give the shopper something to do; give them something to share; and give them a better way to get it.





## Digital Innovation

# Laurence Haziot

Global Managing Director and General Manager  
for the Consumer Industries, IBM



## COGNITIVE CHATBOTS: THE NEW GOLD STANDARD IN CUSTOMER SERVICE FOR RETAILERS

In 2017, cognitive chatbots will set the new golden standard in high quality customer service for retailers.

More than one in three Americans is willing to make a purchase from a chatbot, like those on Slack or Facebook Messenger, and spends an average of \$55.80 per purchase, according to a recent report from [Publicis Groupe's DigitasLBi and Harris Poll](#). The research also found nearly half of Millennials have received recommendations from a chatbot or would be willing to in the future

A chatbot is not always an app, but a new kind of software that enables consumers to ask a machine questions via text or messaging on a smartphone. They use natural language to answer simple questions, make online purchases and provide quick customer service responses.

By integrating artificial intelligence into these chatbots, such as [IBM Watson](#), they can enhance customer service by helping retailers identify customer intent behind inquiries and learn consumer preferences based on multiple interactions, enabling the chatbots to make more relevant, personalized recommendations in the future. Since chatbots mimic the way humans communicate, shoppers' interactions with these digital services feel more natural, and are an effective way to provide personalized responses to consumer's requests — automatically and at scale.

Delivering personalized interactions

is especially important during the holidays as retailers strive to maintain a consistently enjoyable shopping experience in busy stores or shopping centers. For example, a cognitive chatbot can replace the confusing mall directory by taking customers directly to the stores they want to visit. They can also answer common and simple questions such as, "Where is the women's changing room?" This tool frees up in-store associates' time to focus on more personal interactions with top customers.

Mall of America recently tapped IBM Watson via Satisfi Labs to create a trip planner for consumers to navigate the nation's largest shopping center's 5.6 million square feet of retail stores, theme parks, and attractions. The "mobile concierge" uses the Watson Conversational API and AlchemyLanguage services in a holiday-themed chatbot — fittingly named "E.L.F.," short for Experience List Formulator — to help guests plan a personalized visit based on whatever they're looking for.

E.L.F. guides guests through a series of questions related to how much time they have to spend and what types of activities they're looking for, which is crucial in such a huge space. The chatbot, available on Facebook Messenger and via mobile browser, then offers a selection of retailers, rides and other activities during the allotted time period.

Along with E.L.F., Satisfi embedded Watson to create a [similar bot](#) for

**"In the New Year ahead and beyond, cognitive chatbots will become a hallmark in the industry and further raise the bar on what's needed to deliver a superior customer experience."**

- Laurence Haziot, IBM

Fashion Island in Newport Beach, Calif. The bot, named "At Your Service," takes an SMS or text message approach to answer consumers' questions about where to eat, where a brand's store is located or where to find a specific item of clothing. For example, a guest could ask to locate a velvet dress to wear for their holiday parties, where the Neiman Marcus is, or where they can grab a grilled cheese, all by texting (949) 734-7364 and receiving a relevant response on their phone.

Retailers ranging from Nordstrom to Uber and [1-800-Flowers](#) recognize how smartphone users want fewer apps doing more of the work, and are turning to cognitive chatbots as a way to make that a reality and create a more enjoyable shopping experience.

In the New Year ahead and beyond, cognitive chatbots will become a hallmark in the industry and further raise the bar on what's needed to deliver a superior customer experience.



# Digital Innovation

# Jeff Warren

Vice President, Oracle



## 4 IMPERATIVES TO BRIDGE THE DIGITAL GAP

In 2016, we saw a Millennial style of shopping that demanded a convergence of the online, mobile and in-store experience during peak trading. Triumphant retailers balanced this new service paradigm with the respect to court the Boomer and Gen X populations when, where and how they shopped. Delivering a unified, compelling experience across digital and physical channels, and everything in between, has been the overwhelming focus for most retailers in recent years. In order for retailers to adapt to this disruption without hesitation, there are imperatives to align.

### The Road To Cloud

There is a period of transition over the next 10+ years where retailers will migrate from on-premise to the cloud. We fully anticipate that on-premise and cloud applications will coexist. Oracle will continue making investments in our on-premise solutions, knowing that our customers will migrate to the cloud at their own pace, as their business dictates. We will support retailers of all segments and sizes through this journey with investments that will enable them with self-determined migration approaches. As technology providers continue to deliver on-premise solutions, they must also work with retailers in a logical, measured approach as they migrate to the Cloud.

### Work The Way You Live

This is not about mobile everything but about mobile everywhere. It's about accessibility and interaction in a way that is comfortable and relevant. All of our Oracle Retail solutions extend

a consistent look and feel, making them easier and familiar for users, and to make it easier for training and deployment to appeal to a tech-savvy workforce to drive productivity. Whether it's tablets or smartphones, Oracle is allowing retailers to work the way they live, and use mobile devices to better participate in empowered commerce-retailing.

### Bridging The Gap

Technology has become the platform unifying retailers and consumers. Retailers must invest in technology to bridge the gap between personas and functions to ensure that associates and consumers are looking at the same information and speaking the same language. Success is every bit as much about the attributes of a core merchandising system as it is about creating an engaging mobile app. Gaining this all-important single view of inventory, customer and order is the foundation on which all other elements of operations need to be built. Oracle Retail enables a more unified experience, across channels, solutions, roles and geographies, through real-time access to centralized solutions, where each component performs well-defined, critical functions for the enterprise and where all touch points have access to these common components to ensure consistency in information.

### Modern Retailing

Modern retailing is all about transforming the User Experience. It's about infusing science into persona-based retailing, where we help our clients make retailing more intuitive,

**"This is not about mobile everything but about mobile everywhere. It's about accessibility and interaction in a way that is comfortable and relevant."**

**- Jeff Warren, Oracle**

and where we use technology to better execute strategic goals. And not just through a prettier UI but by bringing together relevant information from across key solutions so that the analyst, associate, demand planner or any user has relevant, easy to action information served up to them through an intuitive user interface across the preferred device — be that laptop, tablet or mobile device.

In order to achieve this all technology initiatives must revolve around engaging and understanding the consumer, personalizing and supporting the needs of an individual consumer versus an age group or gender profile. The success of such an initiative is rooted in a simplified IT structure that empowers retailers to focus on retail, be more mobile and adapt to the changing retail landscape.

With machine learning, IoT, predictive analytics and advanced mobile capabilities, retailers that have the vision to invest in cloud-based strategy will have an opportunity to widen their operational and financial advantages over their competitors.



## Digital Innovation

# Greg Van den Heuvel

COO, Software Solutions, Pitney Bowes



### WHY ALEXA COULD BECOME 2017'S MOST TRUSTED ADVISOR

Remember when Apple launched Siri five years ago? Siri was a major technology breakthrough — one of the first examples of Artificial Intelligence (AI) in the consumer product world — and people couldn't get enough of the idea that they could talk to a robot and get an answer within seconds.

Since Siri's launch, AI has taken root, and businesses have been toying with the idea of how they can capitalize on AI's conversational user interfaces. Just last year Facebook launched Messenger for Business, which allows businesses to host real-time conversations with customers through the social site's online chatbot feature. This year, it's all about Amazon Echo and Google Home, which are powered by voice-activated chatbots that respond to an owner's voice to answer questions, play music, stream shows and offer local traffic updates — all in real time.

This modern-day human-machine interaction has been well received by consumers because chatbots make life easier, almost like having a personal assistant who can call for an Uber, turn off the lights when you go to bed, or help recite recipe ingredients while you whip up a weeknight dinner for the family. It's [estimated](#) that roughly 1.5 million homes currently have Amazon Echo installed in their homes to interact with every day.

While the days of Westworld may be in the distant future, human interactions with robots have become the norm.

AI machines providing conversational UIs imitate a human-like experience that is delivered through channels consumers already prefer to engage in, such as mobile applications.

[According to Forrester](#) in fact, 78% of consumers today spend time daily in instant messaging applications for an average of 21 minutes. Through these conversations, applications are able to collect information about an individual that uncovers preferences and behaviors that could be valuable to businesses.

Business technologies today strive to merge customer data from both the physical and digital worlds to create a seamless and comprehensive view of an individual. The better the data, the more informed and personalized the conversation. Amazon and Google have found a way to capture consumer data and drive relevant conversations through a consumer product, and businesses have a real opportunity to address their needs through this new communication channel.

Verticals such as retail, telecommunications and health care provide interesting use cases that are all viable applications for serving this emerging consumer base. For instance, through a partnership with Amazon or Google, a retail company could alert a consumer that the dress they've been searching for high and low is back in stock, and reorder it for the consumer. A telecommunications company may be able to update a customer, in real time, as to their current monthly data

**"Consumers today want to see, to touch, to feel value in doing business with someone."**

**- Greg Van den Heuvel,  
Pitney Bowes**

usage, and explain why they have additional charges in this month's statement. Or if you're a health care provider you can walk a customer through eligible policies they should consider for this year's elections based on their past medical history.

Consumers today want to see, to touch, to feel value in doing business with someone. For years, businesses have struggled with communicating their value proposition to consumers, but Amazon Echo and Google Home are making it possible to have this conversation through a consumer's preferred channel of communication. In the coming years, conversational UIs will prove to be so much more than sales associates. They'll soon become trusted advisors across verticals.





## Digital Innovation

# Patrick Giusti

Chief Revenue Officer, Point Inside



## AUGMENTED REALITY: MELDING THE DIGITAL AND PHYSICAL RETAIL EXPERIENCE

Augmented reality made a splash this year when Pokémon GO took the world by storm. A craze that had people of all ages, from all over the world fixated on their mobile device and on the hunt for Pikachu. Pokémon GO was the number one top-trending Google search term for 2016 as reported by Google. The game became a phenomenon, and as a result pushed augmented reality into the spotlight.

Retailers and brands have started to capitalize on this technology, enhancing the shopper's in-store experience by blending the digital and the physical worlds. We have seen augmented reality implementations in retail through Sephora and their "Visual Artist," which styles shoppers' makeup without them applying it, and IKEA's Catalogue App, which gives shoppers a virtual preview of furniture in their homes. What commonality do we see in all of these? Physical retailers relying on technology to engage with their shoppers, offering them a more relevant in-store shopping experience. This was a key takeaway from 2016 and something that brick-and-mortars must continue to build on for years to come.

Augmented reality is the next cutting edge in-store technology that retailers will not be shying away from in 2017. Today's shopper already expects a digitally enhanced in-store experience. By using the

shopper's own mobile device, AR will change the way people shop. Shoppers will soon have the ability to open the retailer's mobile app, point their smartphone toward a specific product in-store and immediately see an overlay of product-specific details and promotions.

While retailers are looking to implement an augmented reality strategy this next year, they cannot overlook the foundational element to ensure it is effective and successful. First, they must create a digital representation of each store layout and understand where every product is in each store. [Point Inside's](#) StoreMode™ combines the physical location of products in-store with enterprise data and mobile shopper usage into a single, scalable platform. The resulting digital representation of the physical store allows retailers to know where all their products are in each store, at all times.

Year-end analyst predictions say retailers will be fully engaged and invested in augmented reality come 2020. While that is a few years off, retailers should not wait until augmented reality is forced upon them. Those that take action in 2017 will have a definitive advantage over the rest as they are providing their shoppers a more personalized, meaningful and technology-driven in-store shopping experience.

**"Augmented reality is the next cutting edge in-store technology that retailers will not be shying away from in 2017."**

**- Patrick Giusti, Point Inside**



Digital Innovation

# Shelley Bransten

SVP of Retail Industry Solutions, Salesforce



## ARTIFICIAL INTELLIGENCE SET TO MAKE ITS RUNWAY DEBUT IN 2017

Today's smartest retailers understand that their successes revolve around their ability to create personalized shopping experiences for customers. However, given that shoppers are more informed, empowered and connected than ever, this is no easy task. Enter artificial intelligence (AI), the latest trend in technology — and a potential game-changer in retail. Once the stuff of sci-fi movies and dystopian fiction, AI has now become an invaluable tool to help retailers provide more tailored purchase experiences to shoppers in-store and online, supercharge store associates and enable retail marketers to engage with shoppers at the right time with relevant content.

From Echo to product recommendations to suggested tags on Facebook photos, consumers are now accustomed to AI-like technologies in their daily routines. And shoppers want this same level of sophistication and personalization from their retailers. In fact, according to Salesforce's ["2016 Connected Shoppers Report,"](#) more than three out of four shoppers (79%) like it when they receive complementary product offers or promotions from a retailer based on their purchasing histories, but just 64% believe that retailers are getting better at tailoring their product selections and offers to match their preferences. With new advances in AI, retailers now have the ability to automatically "learn" favored shopping and purchase patterns of consumers,

predict their behaviors based on these patterns, and then recommend the best and most relevant products or offers on any device.

But how does this apply to the store? While digital commerce is on the rise, shoppers still enjoy the instant gratification offered by the brick-and-mortar channel. They can touch and feel merchandise and leave the store with their purchase in hand. This makes it more crucial for retailers to empower store associates with new ways to service and delight shoppers to increase customer satisfaction. Unfortunately, many retailers continue to fall short, causing shoppers to distrust associates and their limited knowledge of inventory, offers and personal preferences. In fact, just 12% of shoppers always or often ask a store associate for his or her opinion on a product before purchasing it, and less than one third who do so trust that the store associate is telling the truth (30%).<sup>1</sup> AI technology has the ability to close this gap, supercharging associates by feeding them with real-time inventory information, best prices, product catalogs and recommendations on their tablets or mobile devices, so consumers receive personalized advice based on their unique profiles and histories.

Of course, once a purchase is made, retailers must be thoughtful in communications with shoppers if they want to increase customer satisfaction and retention. Retail marketers

**"With AI, retail marketers will gain the ability to augment their current analytics strategies with predictive insights on the optimal timing, channel, content and audience for any marketing message."**

**- Shelley Bransten,  
Salesforce**

have become increasingly reliant on insights from analytics to determine the right audience, channel, content and timing for their engagements with shoppers. However, because customers' preferences are changing every second (and on every channel), retail marketers need insights from both historical and real-time data to understand what shoppers might do next. With AI, retail marketers will gain the ability to augment their current analytics strategies with predictive insights on the optimal timing, channel, content and audience for any marketing message.

So, while 2016 was the year of "omnichannel" in retail, get ready for AI to make its runway debut in 2017!



## Inventory Management

# Brent Brown

VP & General Manager, Inventory Intelligence  
& IOT, Tyco Retail Solutions



### RFID-ENABLED INVENTORY VISIBILITY AND UNIFIED COMMERCE

If the 2016 holiday season taught the retail industry anything, it's that now is the time of the evolving shopper. As e-Commerce continues to garner a greater share of retail transactions and mobile commerce explodes, connected consumers are making it clear they want easy, convenient shopping experiences available to serve their needs anytime, anywhere. As a result, real-time inventory visibility is becoming table stakes to support this evolution and unified commerce shopper expectations.

Enterprise-wide connectivity into available online and in-store inventory is needed by shoppers and sales associates alike. The shopper's integrated journey begins with mobile or online browsing to find desired products. The shopper then assesses the retailer's real-time inventory across channels and expects to find flexibility in the fulfillment options, including in-store pickup or ship-to-home. In the store, sales associates require access to product detail and real-time on-hand availability through endless aisle capabilities to best service customers. In addition, easy access to current on-hand item location is critical to meeting the growing trend toward store order fulfillment. Connecting people, products and places through smart devices and real-time data is vital in the new retail landscape.

In today's always-on, always-open world of connected consumers, Radio Frequency Identification (RFID) is the only reliable Internet of Things (IoT) technology that enables real-time accurate inventory. For that reason,

we foresee that the inventory visibility garnered by IoT capabilities, and enabled by RFID technology, will be a major driver for retailers looking for more accurate insight to support their strategic initiatives.

For retailers, implementing a unified commerce strategy begins with merging e-Commerce and store inventory data to enable same-day and in-store fulfillment. With the reliable and precise inventory accuracy RFID technology provides, retailers can confidently make their enterprise-wide store inventory, down to the last unit, available for purchase and promise items to customers online, on time and through their chosen fulfillment channel — whether it's buy online/pick up in-store (BOPIS) or ship-from-store.

To create this essential inventory foundation, retailers must establish item-level accuracy through regular RFID-enabled cycle counting and inventory management. This practice will help eliminate the distortion that inevitably happens over time and help maintain a 95%+ accurate inventory base for online and in-store order fulfillment. This item-level inventory accuracy helps cut down on expensive mitigation strategies, such as excessive safety stock or costly shipments from alternate locations. Having real-time inventory data and IoT device connectivity also helps retailers expand their fulfillment options across merchandise categories and shorten fulfillment cycles.

Bricks and clicks are converging and the store has become the hub of

**"To create this essential inventory foundation, retailers must establish item-level accuracy through regular RFID-enabled cycle counting and inventory management."**

**- Brent Brown,  
Tyco Retail Solutions**

retail activity and transformation. Retailers are finding they must adopt new standards and technologies or risk losing sales and customers. The increase in connected devices and data combined with improved, less expensive technology platforms and the acceptance of common standards will increase the adoption of IoT technologies, such as RFID, across the industry. Finding new ways to use store data from connected devices and products to drive sales, improve operations and deliver a differentiated brand experience will be essential for retail leaders. Unified commerce as omnichannel retail is no longer just a trend; it will be retail as we know it. Success in 2017 will come to retailers who are able to connect, collect and act on data to bring better insights into their unified commerce experience, using IoT with RFID as one of the key enabling technologies.





## Payment/POS/Security

# Noel Goggin

CEO and Culture Leader, Aptos



## NEXT-GEN POINT OF SALE KEY TO SINGULAR COMMERCE APPROACH FOR OMNICHANNEL RETAILING

Some 73% of retailers plan to have a unified commerce platform implemented by the end of 2019, according to the [Boston Retail Partners' 2016 Digital Commerce Survey](#).

While most retailers are aware of the benefits of a unified commerce platform — what we at Aptos refer to as a Singular Commerce platform — there remain both cultural and technical barriers to its adoption. To date, digital commerce operations have been isolated from brick-and-mortar store operations — separate systems and divisions with separate inventories, order management, fulfillment, customer data, pricing and promotions. Only fairly recently have retailers taken steps to break down silos and have these two groups work in lock-step together with a shared view of orders, customers, inventory and pricing and promotions. This trend will continue in 2017 as retailers realize omnichannel retailing is de facto retailing, and they reshape their operations and organizations to be successful for the long haul.

In the store environment, POS is king. Not only does it function as a secure transaction processor but it is also the hub for all the customer, inventory and order information needed to enable rich interactions that support omnichannel everything.

In recent years, retailers have been challenged by new POS requirements such as EMV and tokenization, consuming extensive amounts of resources. But as the industry puts this in the rear view, they can finally look ahead to retool their POS systems to handle 'what's next.'

### What's Next For POS In The Singular Commerce Era?

As retailers execute on what is quickly becoming "table stakes" — inventory lookup, order routing and EMV/tokenization — expect to see a focus on changing the engagement model with the customer.

Today retailers engage at a transactional level, but moving forward POS — via its ability to surface customer and order management data — will help fuel the execution of seamless customer experiences on the sales floor that are more personalized, efficient and value added.

The Holy Grail of Singular Commerce is to have a single modern platform that harmonizes business processes and data across all points of interaction with customers, so retailers can deliver a seamless brand experience consistent with their objectives. This means all relevant data — from transaction history to personal customer information to product pricing and inventory availability — is accessible in real time and can be acted upon by a single set of consistent business logic to support personalized and efficient customer interactions.

This requires real-time inventory access and order orchestration, which also provide the foundation for Endless Aisle or Clienteling capabilities. Via Enterprise Order Management and Product Information Management, retail associates in stores are now armed with as much information as digitally empowered customers. This enables associates to not only recommend

**"In recent years, retailers have been challenged by new POS requirements such as EMV and tokenization, consuming extensive amounts of resources."**

- Noel Goggin, Aptos

products to the customer but to know in advance which items are available in the store, and seamlessly complete the transaction from a mobile device, without ever leaving the customer's side. And if the product is not available in the store, they can check to see if it is available elsewhere across the retail enterprise and add it to the customer's shopping cart.

This new next-gen POS looks and sounds very different from its former humdrum and humble role. And retailers today are showing us just how different it will look going forward. If you want a sneak peek of "coming attractions," look at what [True Religion](#) is doing. Associates armed (literally) with an Apple Watch are automatically alerted when loyalty program members enter the store, and presented with vital information including the customer's name and purchase history, proclivities and preferences. Associates can showcase items that are most relevant to each customer, execute the transaction, and fulfill from store stock or distribution center for home delivery.

# For More Information



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