Winning the New Digital Consumer with Hyper-Relevance

In Retail, Insight Is Currency and Context Is King

Joseph Bradley

James Macaulay

Kathy O'Connell

Kevin Delaney

Anabelle Pinto

Joel Barbier

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Key Insights

- As the Internet of Everything (IoE) drives **exponential change** — and opportunity — customers and retailers face a complex maze of shopping journeys.

- Mobility and apps now represent a disruption similar in scope to what we saw with e-commerce in the late 1990s and early 2000s. In the second quarter of 2014, total discretionary retail spending rose 3 percent; e-commerce rose 10 percent; and mobile commerce rose 47 percent.[1]

- This sweeping digital transformation has dramatically **changed the shopping behaviors** of consumers. As a result, retailers need to forget everything they thought they knew about today's consumer, including traditional customer segmentation — digital shopping behaviors now transcend traditional demographic parameters of age and income. For example, more than half of U.S. and U.K. shoppers use retailer-specific apps at least once per week.

- Retailers have looked to address these digital demands by creating more channels (omnichannel). However, this has resulted in growing operational complexity for retailers and has not consistently achieved what consumers really desire: efficiency, savings, and engagement.

- A Cisco study revealed that today's consumers demand new kinds of digital experiences, both in-store and out. Above all, these shoppers seek a **hyper-relevant experience — more so than a hyper-personalized one**. Thirty-nine percent of respondents identified greater efficiency in the shopping process (e.g., ensuring items are in stock, speeding checkout times) as the area retailers most need to improve. By contrast, only 13 percent chose a more personalized shopping experience.

- Retailers that build agile business processes to turn these insights into value **can capture a profit improvement of 15.6 percent**, according to Cisco Consulting Services.

Disruption and Opportunity in the Internet of Everything Era

In only a few short years, technology and changing consumer shopping behaviors have upended the retail landscape. The digital consumer has come of age and expects a rich palette of retail options, channels, and experiences that provide ever-increasing value and convenience.[2] Disruption, meanwhile, is arising from new competitors enabled by fast-changing technology, threatening established incumbents as never before.[3]

The source of much of this disruption is the Internet of Everything (IoE). IoE is the networked connection of people, process, data, and things, and Cisco projects these connections to surge from 13 billion today to 50 billion by the end of the decade. With a total Value at Stake of $19 trillion from 2013 to 2022, the Internet of Everything represents a profound market transition. Cisco defines Value at Stake as the potential bottom-line value that can be created, or that will migrate among companies and industries based on their ability to harness IoE over the next decade.[4]

IoE is altering the competitive dynamics in nearly all industries — particularly retail, which accounts for $1.5 trillion of the total private sector Value at Stake. Furthermore, our economic analysis estimates that for a $20 billion retailer, the total gross annual value opportunity associated with IoE is $312 million, representing a $219 million net margin increase and a 15.6 percent improvement in profitability.[5]

Quite simply, retailers are not transforming fast enough. Out of the total IoE Value at Stake for the retail industry — $179.6 billion — a dismaying 55 percent of that value went unrealized in 2013.[6] However, in another recent Cisco study, retailers indicated that they were planning to make major investments in the Internet of Things (IoT), which is a chief enabler of the Internet of Everything.

In today's world, insight is currency and context is king. To offer true value, retailers will need a window into the shopping behaviors of their individual customers, along with a greater ability to take action at the appropriate time, place, and situation in which the shopping journeys occur. Such *hyper-relevance* implies delivering value — whether greater efficiency, savings, or engagement — to the consumer in real time throughout the shopping lifecycle. This requires an analytics-driven approach that incorporates data from sensors, beacons, smartphones, and other sources to apply intelligence to the context of the consumer (i.e., where he or she is, what he or she is looking to accomplish in that moment) and dynamically providing the experience that best suits that context.

To better understand these competitive dynamics, in late 2014 Cisco undertook a comprehensive study consisting of original research, economic analysis, and interviews with retail industry leaders. The first wave of primary research findings includes 1240 consumer responses from the United States and the United Kingdom.

IoE Retail Value at Stake

Retail is the industry with the greatest unrealized potential from IoE. In 2013, Cisco analysis showed that retailers realized only 45 percent of the IoE Value at Stake for the industry. Retail has a major opportunity through digitization and in adopting IoE-enabled solutions.

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"We may just be crossing over to the other side of the chessboard, where it starts to get really, really exponential. So if a retailer is out there thinking that at some point this is going to slow down ... they're wrong."

Doug Stephens
Founder, Retail Prophet

The global survey of 6000 respondents across 10 countries will be released in the first half of 2015.

Exponential Change Creates a Maze of Shopping Journeys

New connections are creating unprecedented opportunities to innovate, as well as challenges. Expanding from 13 billion connections among people, process, data, and things today to 50 billion in 2020 will drive exponential change and complexity. But what does exponential change mean to a retailer?

To illustrate the nature of the change impacting the industry, it is instructive to examine how the shopping journey (product research, purchasing the product, receiving the product, and obtaining support) has evolved from the pre-Amazon.com era through omnichannel e-commerce and on to the IoE era. Shopper interactions once added up to a total of three linear shopping-journey options: in-store, through a catalog, or prompted by print or broadcast-media advertising. The advent of e-commerce expanded this number to approximately 40. Now, IoE promises more than 800 unique variations of possible shopping journeys. As technology innovations (such as wearables and augmented reality) increase and consumers' digital lifestyles evolve, these shopping journeys will multiply further. [Figure 1]

This complexity is not only unprecedented, it is increasingly unmanageable for retailers using standard management approaches and technology strategies.

Figure 1
The variety of journeys available to shoppers is growing exponentially.
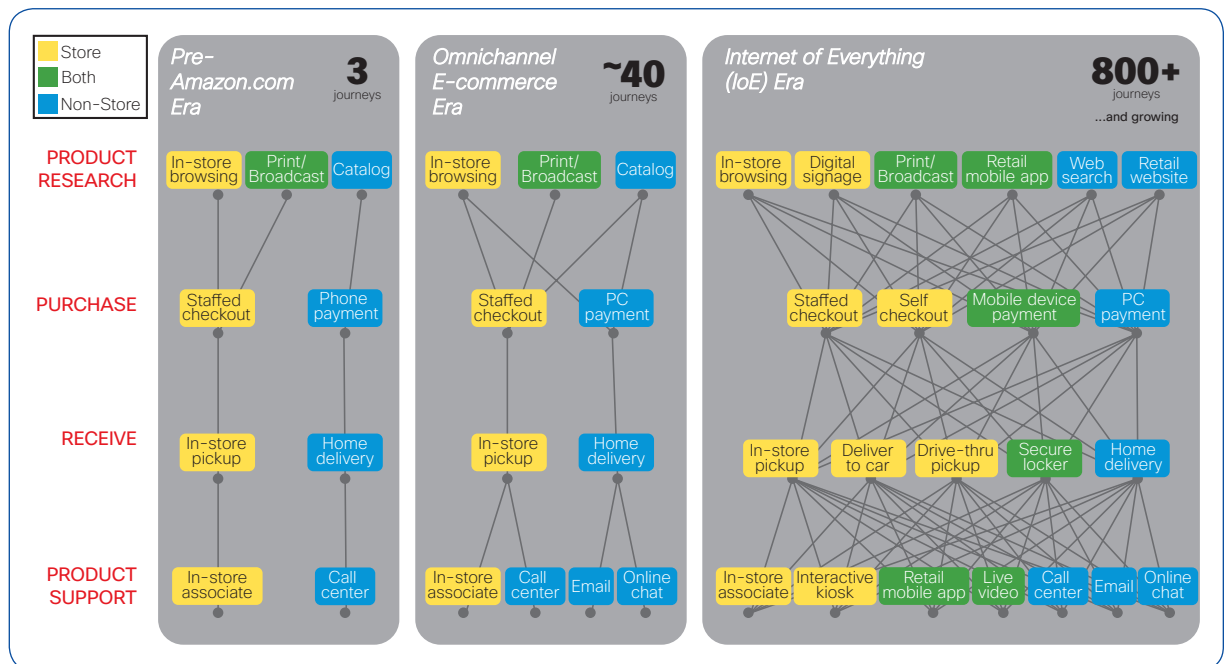
Source:
Cisco Consulting
Services, 2015

As Digital Shopping Behaviors Go Mainstream, Retailers Must Transform

Nearly all consumers have been engaged in e-commerce for more than a decade, and a growing majority of American and British consumers now make smartphones an important part of their daily lives. Tablets are commonplace, and mobile apps are ubiquitous for mainstream users, not just early adopters. Today's digital consumers are more in control of their consumption than ever before, settling into technology-enabled behaviors such as deal seeking, so-called "showrooming" (examining a product in a store, then purchasing it online from another outlet), and social shopping.

Mobility and apps now represent a disruption similar in scope to what we saw with e-commerce in the late 1990s and early 2000s, which brought about a tidal wave of industry change. With the number of channels and options growing exponentially, today's retailers face a wave of even larger complexity.

To gauge the extent of app penetration, consider that in 2012, 1.2 billion people were using mobile apps; by 2017, that number is expected to reach 4.4 billion.[7] Our survey respondents reveal how these numbers are playing out in the retail space:
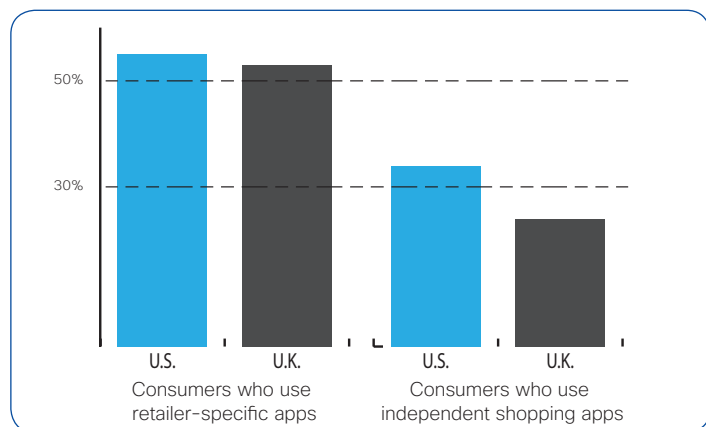
- Earlier editions of Cisco's retail research identified a group of consumers we referred to as "Über Digitals" – people who use smartphones or tablets while shopping in the store, and employ these devices to access the Internet at least daily. In 2012, 11 percent of U.S. consumers could be considered Über Digitals. From 2012 to 2014, this group grew from 11 to 29 percent of U.S. consumers, and from 7 percent to 23 percent of U.K. shoppers. Combining mobile technology with the in-store experience is no longer just for early adopters – it is mainstream. Therefore, the very concept of Über Digitals is falling away as smart devices pervade everyday life, across shopper segments.

- About one-third of U.S. shoppers and one-fourth of U.K. shoppers use independent shopping apps on a smartphone or tablet at least once per week.

- More than half of respondents in both geographies use retailer-specific apps at least once per week. [Figure 2]

Consumers are now able to construct individualized shopping journeys — including product research, purchase, delivery, and product support — and they know how to use technology to optimize each step along the way. For an individual consumer, any technology "innovations" that do not directly support this objective are at best extraneous and at worst an annoyance. Enabling customers to achieve their shopping journey in a way that maximizes value to them, such as through greater convenience or the collection of loyalty points, is key to winning in the IoE era.

Smartphones Power New Retail Interactions

For more insights, please visit
http://cs.co/retailSmartphone

Figure 2
Consumer use of retail apps is strong and growing stronger.

	Consumers who use retailer-specific apps	Consumers who use independent shopping apps

Source: Cisco Consulting Services, 2015

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Hyper-Relevance Defined

Hyper-relevance is a new paradigm that enables consumers to receive what they want, when and how they want it. Hyper-relevance is made possible by new IoE-enabled solutions and innovative business models that deliver value – efficiency, savings, or engagement – in real time throughout the shopping lifecycle. It requires an analytics-driven approach that applies intelligence to the context of the consumer (where he or she is, what he or she is looking to accomplish), thereby allowing retailers to dynamically provide the most suitable experience.

Consumers Want Hyper-Relevance

Cisco tested 19 IoE-enabled shopping experiences, spanning all four stages of the shopping journey and addressing many maturing digital enablers, including video, mobility, and analytics. Consumers made clear they are very interested in using these applications to get more value. Beyond the overall level of interest in IoE, however, what is most telling is how broad-based this interest is. In other words, consumers are interested in virtually all of these experiences. This reinforces the complexity challenge facing retailers. Where will they place their innovation bets? What happens when next-generation innovations such as wearable computing devices, augmented reality, and the connected home reach the tipping point and add many new shopping journeys?

Figure 3 illustrates the interest level of our respondents for the 19 individual concept tests, along with the financial opportunity from each of three value proposition categories: **efficiency**, **savings**, and **engagement**. Our economic analysis revealed that roughly two-thirds of the total potential opportunity (or $208 million for an illustrative retailer with $20 billion in annual revenue) comes from those applications that deliver greater efficiency for consumers.

Disruptive innovators (e.g., Groupon, LivingSocial, Gilt) have successfully targeted consumer savings, which has served to exacerbate margin compression for retailers in

Figure 3
While savings still receive the highest levels of interest, retailers that address efficiency will capture the greatest Value at Stake.

	IoE Retail Concepts	Willingness To Use*	$312M Gross Benefits
EFFICIENCY Less hassle, faster time to purchase, ease of solving problems	Checkout optimization In-store guidance [digital signage] In-store guidance [augmented reality] Scan-and-pay [smartphone] Drive-thru pickup Same-day delivery Smart cart / automatic replenishment Mobile payments Secure locker	77% 67% 63% 60% 57% 53% 50% 49% 49%	**$208M** 67% of Value at Stake
SAVINGS Discounts, promotions	General in-store offers [digital signage] Special offers [augmented reality] Targeted offers [digital signage] Targeted offers [smartphones] Scan QR codes	78% 73% 67% 54% 52%	**$59M** 19% of Value at Stake
ENGAGEMENT Learning about what's new, entertainment, exploring accessories	Reviews [augmented reality] In-store advertising Product recommender [augmented reality] "Top Ten" rankings and displays In-store entertainment	57% 54% 48% 45% 38%	**$45M** 14% of Value at Stake

Source: Cisco Consulting Services, 2015   *Percentage responding "somewhat" or "very likely" to use

some categories. Some retailers, by contrast, are investing heavily in solutions to engage consumers, bring them into the store, and attempt to cross-sell and up-sell to them (indeed, this is the underlying strategy of today's discount wars).

Consumers have always been preoccupied with savings. So it is no surprise that savings remain the area of most interest to our survey respondents. Efficiency, however, is a close second. When asked about the areas where they would like to see improvements, 39 percent of our respondents identified the process of selecting and purchasing goods (for example, having the products they want in stock and an efficient checkout process), showing a need for greater ease and efficiency. By contrast, only 13 percent sought improvements that would create a more personalized shopping experience. [Figure 4]

Consumers made it clear that experiences must be efficient, contextual (that is, reflecting a shopper's individual situation, real-time environment, history, and so forth),
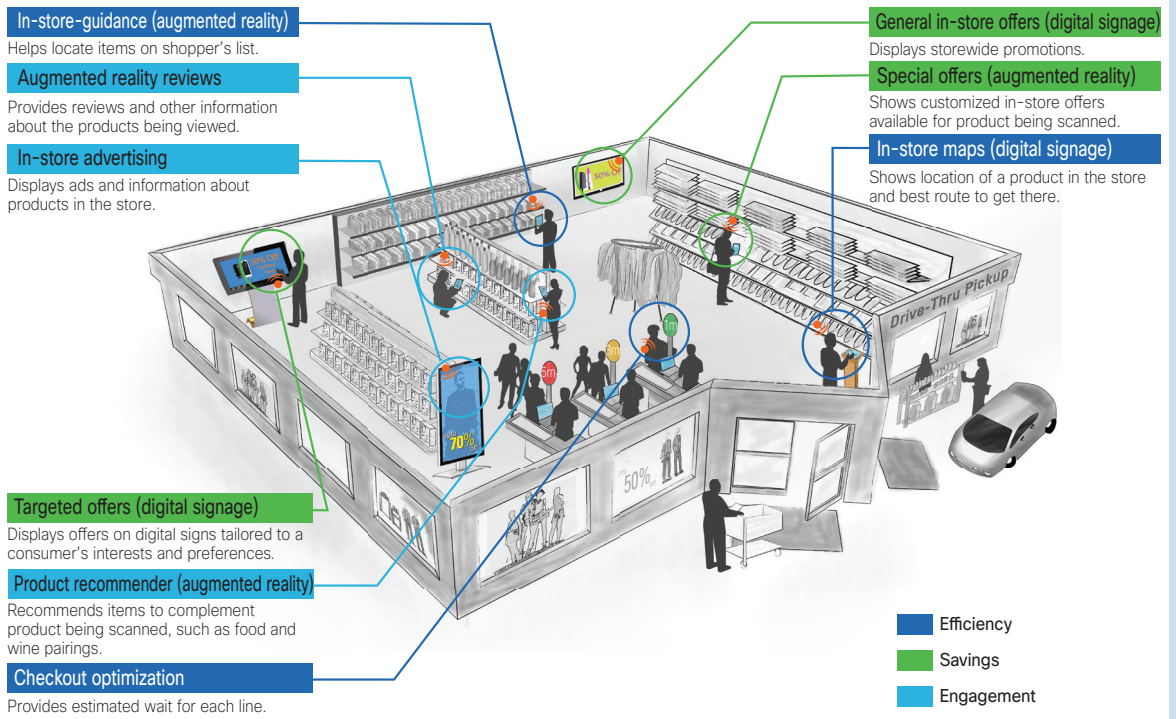
Figure 4

Consumers believe that retailers need to improve the shopping experience.

Q — In which of the following areas do you believe retailers could make the most improvement?

Process of selecting and purchasing goods / Quality of interactions provided by store associates / Physical environment (store layout, displays) / Level of personalization

Source: Cisco Consulting Services, 2015

Cisco Consulting Services surveyed consumers about their thoughts on 19 IoE-enabled retail solutions, including those shown here.

(See Figure 3 on p. 6 for a complete list of concepts that were explored.)

In-store-guidance (augmented reality)
Helps locate items on shopper's list.

Augmented reality reviews
Provides reviews and other information about the products being viewed.

In-store advertising
Displays ads and information about products in the store.

General in-store offers (digital signage)
Displays storewide promotions.

Special offers (augmented reality)
Shows customized in-store offers available for product being scanned.

In-store maps (digital signage)
Shows location of a product in the store and best route to get there.

Targeted offers (digital signage)
Displays offers on digital signs tailored to a consumer's interests and preferences.

Product recommender (augmented reality)
Recommends items to complement product being scanned, such as food and wine pairings.

Checkout optimization
Provides estimated wait for each line.

Efficiency
Savings
Engagement

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> "We see the urgency increasing in being able to contextualize and personalize that interaction, to keep the consumer coming back into the store instead of spending all their time online shopping."

Leslie Hand
Vice President, IDC Retail Insights

Hyper-Relevance Through Consumer Context

For more insights, please visit
http://cs.co/retailContextual

relevant to real-time needs, and easy in which to participate. In the retail environment, such situational awareness is essential to creating a better customer experience. Retailers must increase the value to the consumer throughout the shopping journey, demonstrably providing a combination of efficiency, savings, and engagement. This new paradigm is called "hyper-relevance."

But doesn't personalization equate to relevance? Not exactly. A real-time personalized message, for example, might address a shopper by name, suggest some popular new products related to a favorite hobby, or even note an upcoming birthday. Yet none of that is relevant if the shopper is at that moment comparing products to fix a pressing plumbing problem at home. It may be the same customer, but in effect, it is a very different *shopper*.

Hyper-relevance reflects the context of the shopping journey at a particular time and place, informed by circumstance. In short, personalization is when the retailer knows who you are; hyper-relevance arises when a retailer intuits and enables you to accomplish what you want to do at that moment — whether that is maximizing loyalty points, or getting through a checkout line quickly, or obtaining help from a store associate.

It is important to note that personalization, done right, is not at odds with hyper-relevant outcomes. On the contrary, personalization — recognition of the customer individually, greeting him or her by name, making suggestions about what he or she might like — can be a big factor in deepening engagements. However, it is the deeper context of hyper-relevance that creates the distinction from personalization.

Whereas personalization tends to be overt, retailers' efforts to create hyper-relevance may be virtually imperceptible to the consumer. Nonetheless they may result in a more satisfying experience that delivers the desired levels of efficiency, savings, or engagement. Hyper-relevant experiences, unlike personalization, may even be anonymous. They can rely, for example, on information about the location, position, or web-browsing history of a smartphone connected over a retailer's Wi-Fi network, or via a Bluetooth beacon — without using any data about the individual holding the device. In fact, many consumers in our study registered a preference for anonymous experiences. That is, those that deliver efficiency, savings, and engagement, along with reassurances that they can retain their anonymity in the store (if they so choose). Such options were found to be important factors in consumers' willingness to share information with retailers.

Hyper-relevance relates to the environment in which a shopper is operating at a specific time. Imagine a scenario in which a shopper is hurrying through a store. Sensors in the store can determine that one particular shopping cart is traveling 20 percent faster than the average. Through the application of analytics, the retailer could even know that the shopper is a mother who usually buys diapers and baby formula. Yet in the real-time context of that moment, a coupon for diapers may not be relevant

— and may even feel intrusive. In this context, it is best if automatic processes simply help the shopper find the fastest way through the store. Thus, automated processes respond to the context that is relevant to that shopper at that specific time. Indeed, such a scenario illustrates people, process, data, and things connected in new ways to drive hyper-relevant experiences.

These areas of interest highlight some of the findings shown in Figure 3 (page 6):

- **Efficiency:** Seventy-seven percent favored checkout optimization; in-store guidance through digital signage resonated with 67 percent; and 63 percent looked to in-store guidance through augmented reality.

- **Savings:** Two-thirds of respondents said they would be more likely to participate in the retailer's offers in exchange for a 10 percent savings on their next purchase. Seventy-three percent of respondents favored receiving special offers via augmented-reality experiences on their smartphones.

- **Engagement:** Fifty-seven percent of respondents were interested in receiving product reviews via augmented reality, while 48 percent were interested in receiving product recommendations through the same mechanism. By contrast, only 38 percent responded to the prospect of in-store entertainment, which is not related to their individual context or shopping journey.

Overall, the survey showed particular interest in new delivery models, augmented reality, mobile solutions, and digital signage, and these concepts should be considered for any future retail strategy. The high interest in augmented reality solutions shows that this forward-looking concept is entering the mainstream. This supports Cisco's view of AR as a leading candidate for being a major disrupter in coming years.

What Should the Retailer of the Future Do?

Segmentation Must Become Real-Time and Contextual

We are entering a period that has been referred to as "post-demographic consumerism"[8] in which consumption patterns are no longer defined by traditional demographic segments such as age, gender, location, income, family status, and the like. This presents a significant challenge to retailers already grappling with growing complexity in their operations. While it is commonplace to attach certain technology-related shopping behaviors and expectations to, for example, luxury buyers, this demographic looks less and less like it did 10 years ago, with younger, more connected buyers increasingly driving global growth.[9]

As for younger consumers, Cisco's research reveals that Gen Y is also far from monolithic.[10] On one hand, Gen Y continues to accelerate the shift to online channels (faster than any other group): 34 percent make more than half of all purchases online as they seek convenience and greater access to information; yet, 54 percent would shop only in stores for the next month if they had to make a choice.

IoE Enables Hyper-Relevant Outcomes

Efficiency

Same-day / same-hour delivery (Google Express, Amazon Prime Now)

"Sharing economy" delivery models (Instacart, Postmates, Miss Nev)

Drive-thru product pickup (Curbside, Tesco Click & Collect)

Delivery to the trunk of the customer's car (Cardrops)

Reducing out-of-stocks (Shelfie)

Estimating queue times (Waitbot)

Smartphone checkout (QThru, Tesco)

Smart lockers (Walmart, Amazon Locker, Google Express)

Connected home / intelligent replenishment (Amazon Dash, hiku)

Mobile payments (Spring, Apple Watch)

Savings

Rebates, reward points, deal notifications, couponing (Ibotta, Shopular, SnipSnap, Gilt)

Engagement

Interactive store (The Dandy Lab)

Dynamic video displays triggered by sensors (Burberry, Glass Shop Wall)

Embedded/disposable beacons, in mannequins or pasted onto products (Iconeme, Estimote)

Product recommender (shopkick, Next Glass, Stitch Fix)

Augmented reality-assisted product finder (LikeThat Decor, Snap Fashion)

"What's happening now is that the media is no longer pushing me to a place to buy the product, it's actually becoming the place I can buy the product. It's becoming the portal for commerce. And I would argue that the store in many respects could be the most powerful form of media that a brand actually has at its disposal."

Doug Stephens
Founder, Retail Prophet

Consumers are increasingly fragmented, and segments are ephemeral. The sheer number of journeys is growing exponentially, and the change is occurring faster than ever before. For an individual consumer, however, the journeys are also dynamic. Consumers are constantly shifting to other journeys as new innovations emerge, and faster than retailers can respond. Compounding this, the velocity of innovation is increasing as IoE dissolves traditional barriers (for example, through the low cost of app creation, the Kickstarter-style funding model, and so forth).

Since every retailer is unique, and there is enormous variation across categories, it will be important for each to define its own segments, and then be prepared for the rapid evolution of new "microsegments." Analytics empowers the retailer to respond dynamically to constantly changing customer behavior.

To Offer Hyper-Relevance, Retailers Must Win Consumers' Trust

A recent article published by the Wharton School of Business examined how customer segments are rapidly changing according to evolving digital behavior: "It used to be assumed that people exhibited predictable behaviors in their public and private lives based on their socio-demographics, allowing firms to use classic segmentation for targeted interactions. Those models are no longer sufficient. Almost all demographics have access to mobile, social, and wearables. What distinguishes different digital user segments is their savvy in knowing how to use these tools and their comfort levels with the data they are willing to share in various scenarios."[11]

As this quote suggests, the trust consumers extend to brand marketers and retailers will be of immense importance. Earlier Cisco research on retail consumers identified a "trust cliff" in which consumers were reluctant to share certain types of information. This year's survey affirms the continued presence of the trust cliff [Figure 5], with similar numbers. A critical mass of consumers has little or no reservation sharing "basic" information about themselves, their past purchasing behavior, or their interests and hobbies. Beneath this is the trust cliff — the areas where consumers are not convinced they can trust a brand or retailer with their information. This includes factors such as the consumer's location, purchases from other retailers, and so forth.

According to our survey, however, a quarter of consumers are open to sharing this information. Another, bigger question, of course, is how to convince the remaining majority of consumers to do the same. This is the battle for the middle of the trust cliff. Many consumers also make clear there are "no-go" areas, such as personal financial information and information about family.

Figure 5
Retailers should focus on the middle of the "trust cliff."

YES	51%	Basic information (name, age, etc.)
	49%	Purchase history, loyalty program info
	41%	Likes/dislikes, interests, hobbies
MAYBE	28%	Information from connected products I am using
	25%	Purchase history from other retailers
	23%	My location
NO	16%	None of the above
	12%	Web history, social media activity
	11%	My reviews online
	9%	Family information
	8%	Personal financial information

Win the battle for trust here

Q In order to get a more personalized shopping experience, what information are you willing to share with retailers?

Source: Cisco Consulting Services, 2015

When asked which benefits they most want in return for providing personal data to allow tracking of their in-store behaviors, consumers cited promotions and offers (57 percent), faster checkout times (39 percent), and guaranteed availability of favorite products (31 percent). While 16 percent would not be willing to share any personal information, 74 percent said they would be somewhat or much more accepting of retailers tracking in-store behavior if it were "anonymized" so it could not be linked to the individual.

These preferences reflect a call for convenience and value in the shopping journey, and a large emphasis on customer experience (framed instead as "hyper-relevance"), not hyper-personalization, which can be perceived as intrusive.

Retail competitive dynamics in the next five years will be governed by who wins permission from consumers to leverage "middle of the trust cliff" types of data. This data will be the lifeblood of the IoE-enabled solutions — such as proximity marketing, targeted promotions, and in-store analytics — that will ultimately deliver hyper-relevance to consumers.

Customer Insight Is the New Currency

Online retailers gain key insights from the rich data created by the "clickstream" as consumers browse, research, and purchase products online that generate data on their likes, dislikes, and interests. Online retailers then use this data to gain a better understanding of each shopper's journey. Retailers can now, in effect, bring this clickstream into the physical world and gain real-time insight into constantly evolving microsegments within their customer base. The use of web analytics in retail is now commonplace, but in-store analytics remains a relatively unexploited opportunity.[12] While in-store analytics promise significant payoffs in terms of operational excellence (e.g., staff optimization, planogram compliance, loss prevention), solutions that analyze customer density and dwell time, line abandonment rates, or visitor path-tracking provide a deeper understanding of customer behaviors and preferences in the store and lay the foundation for true hyper-relevance.

One key to capturing unrealized value is "going to the edge." Much of the IoE Value at Stake for retail will be generated by innovations that depend on real-time analysis of data that is captured at the "edge" of the business — from sensors, RFID tags, IP cameras, access points, beacons, mobile devices, and even weight and motion sensors and ambient condition sensors for moisture and weather.[13] The challenge is to turn this mountain of data into relevant insights that can trigger real-time decisions and action that will be of value to the store and the customer. With a traditional data warehouse model, it might take days or weeks to transmit all the data back to a central repository, sort out what is relevant, and extract insights that improve operations or customer interactions. Analytics are too often constrained by a nightly batch-processing model for store data. By that time, of course, the customer has left the store and the opportunity to add value is gone.

> "...I don't think personalization is important unless it's contextual ... The only way that I think personalization is ever going to have an impact is if it is relevant to the consumer, is contextual, and makes sense in that moment."

Michael Olmstead
Director, Plug and Play Retail
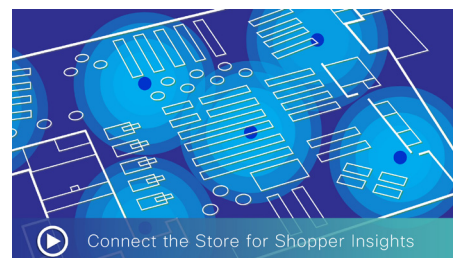
Connect the Store for Shopper Insights

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IoE Retail Value at Stake

Smart store operational analytics increase employee productivity through workforce management and operational alerts, and also improve in-store customer engagement by deploying sales associates where most needed. For a $20 billion retailer, this represents a reduction in operating expenses of $132 million, or 2.7 percent.

By analyzing data at the edge of the network, where it is generated, retailers can sort information in real time to capture fleeting opportunities and create insights to make contextual offers, reduce frustration at checkout, ensure items are in stock, or otherwise improve customers' experience while optimizing store operations. This is the relevance consumers truly value, according to our study.

Many of the IoE-enabled concepts we tested are powered by data and analytics — particularly real-time data from the edge of the network. These are some of the financial opportunities for a typical retailer with $20 billion in annual revenue:

- **Checkout optimization:** Data from parking lot and store cameras, shopping cart sensors, and traffic pattern analysis can help predict checkout wait times, and automatically open or close registers when needed. According to Cisco Consulting Services economic analysis, the potential margin impact is $11 million, enabled by a $3 million revenue uplift (based on revenue gain of $38 million) and an $8 million OpEx reduction.
- **Targeted offers:** These rely upon data from previous purchases and location within the store to deliver relevant and contextual offers at the right time and place, via digital signage or smartphone. Revenue uplift is $357 million, yielding $25 million in margin contribution.
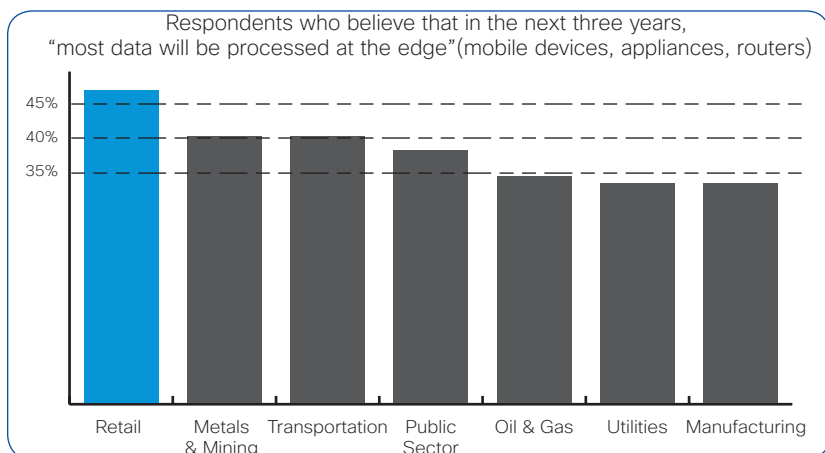
Analytics enhances not only the customer experience, but also operational efficiency and employee productivity. For example, video analytics can help monitor stock on store shelves and send real-time alerts to restock when necessary. This improves employees' efficiency, and avoids lost revenue and lost customers due to stock depletion, contributing $70 million in revenue for a $20 billion retailer.

For their part, retailers appear to understand the potential financial reward of edge analytics. In a Cisco Consulting Services study, nearly 50 percent of surveyed retailers felt that most of their Internet of Things (IoT)[14] data would be processed at the edge within the next three years. [Figure 6]

Another 88 percent of retailers believe that during the next five years, IoT will "somewhat" or "significantly" increase the amount of data that needs to be transmitted by their network. Retailers thus foresee significant growth in the amount of data they will be able to capture from the store and shoppers using IoT solutions. This data will play a foundational role in the ability of retailers to provide hyper-relevant shopping experiences using analytics.

Figure 6
Retailers lead other industries in recognizing the onset of edge computing.

Respondents who believe that in the next three years, "most data will be processed at the edge" (mobile devices, appliances, routers)

Source: Cisco Consulting Services, 2015

Architect Dynamic Experiences

For retailers, the journey to hyper-relevance is evolutionary. Retailers have made great strides with their investments in omnichannel capabilities, and they are beginning to make important investments in Internet of Things capabilities as well.

Given the complexity they confront, retailers now need to respond dynamically. Manual processes will not be able to keep up with complexity and change. Retailers will need new strategies to meet the rising customer demand for IoE-enabled solutions that this survey has illuminated.

In short, a retailer cannot design a linear process when the available options are exponential. Once the "dark assets" (e.g., shelves, shopping carts, displays) of an organization are connected, the processes can become dynamic and automated — and capable of managing exponential change.

In the Cisco Consulting Services Internet of Things (IoT) study, retailers said they believed it was possible to fully automate up to 50 percent of their existing manual operational processes.

However, many retailers don't have a clear view of their business processes, often because those processes are embedded in business applications such as enterprise resource planning (ERP) systems. As a result, they lack visibility into what is happening in their environment at any given moment.

The key is to identify those dark assets that would most benefit from connectivity. Once IoE and analytics solutions enter the store, the retailer has an opportunity to instrument a dynamic process. By tying together those once-dark assets, a precise picture will emerge of what the customer is doing, and how each individual shopping journey is progressing.

We already examined a scenario in which a shopper was moving quickly through a store. Another shopper might be switching checkout lines, indicating frustration, or perhaps researching a competitor's price on a mobile device in-store, highlighting a potential lost sale due to showrooming. In each case, the contextually aware retailer can set dynamic processes in motion — automatically — and deploy resources accordingly at pivotal moments (of decision, of consumer emotion) along the shopping journey. That may be through a store associate engaging the customer or by way of an automatic prompt for a lower price. The overall goal is to seamlessly integrate people, process, data, and things — to the benefit of the retailer and the shopper.

We have identified three key IoE attributes that retailers must possess to deliver hyper-relevance and to build a dynamic infrastructure and processes:

1. **Hyper-aware:** By implementing and automating IoT technologies such as sensors, beacons, and RFID tags, retailers can capture value from the intelligence and

IoE Retail Value at Stake

By employing an agile IT infrastructure model, retail firms can further save 7.5 percent on IT costs.

"There is a huge opportunity to leverage the Internet of Everything to improve the amount of knowledge we have about the consumer and tie together what they do online, with what they do on a mobile device, with what they do in-store to better contextualize and personalize our interactions with them."

Leslie Hand
Vice President, IDC Retail Insights

"The only way you can predict inventory is if you predict demand. And the only way to predict demand is to predict the right purchase behavior .... It's all going to come back to predictive analytics."

Michael Olmstead
Director, Plug and Play Retail

IoE Retail Value at Stake

Edge analytics drives savings. By processing data from security and video analytics cameras locally — at the edge — rather than at a centralized data center, a retail store can reduce network traffic. According to analysis by Cisco Consulting Services, for a retail store with $20 million in annual sales and 100 cameras, edge computing/analytics can deliver net savings of $33,800 annually — and a 1.7 percent annual EBIT increase.

automation that is now available to them. This is the way to gain true visibility into what the customer is experiencing in the store.

2. **Predictive:** By overlaying intelligence and analytics on top of these technologies, retailers can gain real-time anticipatory insight into what is happening, and what to expect. If the parking lot is filling up but the store is nearly empty, staff can be redeployed before a bottleneck occurs.

3. **Agile:** Agile infrastructures and organizational models are critical to the kinds of dynamic experiences that we discussed.[15] When business processes can change dynamically, human, technology, and product resources can be brought to bear in real time with tremendous efficiency.

These capabilities will go a long way to answering a critical question: How does the customer experience your store? Many retailers probably can't answer that question with any real authority. Increasingly, they will need to know. The way to do so is by implementing dynamic processes in the retail organization. This will drive critical differentiation as retailers are empowered to offer the kinds of hyper-relevant experiences that customers now demand.

Build New Business Models

In order to architect dynamic experiences, retailers will need to revolutionize their business models. In fact, every company must be a technology company. If retailers are to meet the demands of the new digital consumer, they will need to innovate faster and better.

Recent history provides many examples of market leaders who suffered the dire consequences of failing to foresee the shift to digital business models. The overall stakes are high and speed is essential — in 2014, an alarming number of retailers closed underperforming stores, filed for bankruptcy, or simply went out of business.[16] Examples abound of retailers that recognize technology is changing their business fundamentally but invest in experiences that do not pay off.[17]

While many organizations have digital business transformation initiatives planned or underway, Gartner predicts that only 30 percent of these efforts will be successful.[18] A piecemeal or siloed approach to this transformation will not be effective — it requires a change in culture and often workforce skill sets. Therefore, the CEO must support the transformation to becoming a digitized organization and embrace the Internet of Everything. IoE-optimized organizations have the ability to efficiently allocate and reallocate resources, dynamically move insights to the point of greatest impact, securely break through physical and virtual boundaries, and move across markets. With the right business models in place, a robust ecosystem, and the right executive-level support, retail organizations can innovate to create hyper-relevant customer experiences.

Winning the New Digital Consumer with Hyper-Relevance
In Retail, Insight Is Currency and Context Is King

We have explored the surging number of potential shopping journeys and the kinds of experiences that consumers expect. Given this complexity, most retailers will not be able to transform alone. Cultivating an ecosystem of partners to help support and guide their transformation journey will be critical, especially as disruption and change continue to accelerate in the IoE era.

Those retailers that have made significant investments toward hyper-relevance — with their existing e-commerce and omnichannel strategies — will be in the best position to move forward on this transformation journey. However, complexity will only increase, and retailers must ensure that they have the right partner ecosystem in place in order to accelerate and further evolve their business models.

Conclusion

By architecting the dynamic infrastructure and process changes outlined above, retailers can begin to transform their business models and their customer experiences. The resulting innovation at speed and scale will be the key that sets them apart from their competition, and ultimately enables them to win in a challenging new environment.

To get their strategy right, retailers must understand evolving customer behaviors and heed the "guardrails" in terms of what consumers — of all ages and levels of technology adoption — want and do not want.

Here are five keys to success for retailers to consider:

1. **Focus on innovations that deliver hyper-relevance for consumers.** The new digital consumer has created a new "hyper-relevance" quotient — based on convenience and value — that requires a revolutionary change in business models. Many e-business investments of the early 2000s did not deliver on the promise of putting the customer at the center. As noted, today's digital consumers are sophisticated and extremely comfortable using technology to shop. They can easily recognize the true sources of value that give them the hyper-relevant outcomes they desire — whether greater speed, lower prices, more choice, or increased convenience — and are adept at using technology to achieve these.

2. **Forget everything you thought you knew about the digital consumer.** Traditional customer segments fail to comprehend emerging digital behaviors and can actually stand in the way of successful innovation. To enable the customer outcomes that will determine the winners of the IoE era, retailers have to know their customers as never before and, critically, possess the requisite business agility to adapt.[19] That goes far beyond simple age- and income-based demographics. Fortunately, IoE and analytics provide the platform to truly understand the customer.

3. **Go to the edge to gain an edge.** Analytics is a key competitive frontier in the IoE era, enabling retailers to provide experiences, offers, and interactions that

> "In the near term, retailers need to try piloting and implementing the capabilities of the Internet of Things and Internet of Everything to learn how they add value to the consumer experience."
>
> **Leslie Hand**
> Vice President, IDC Retail Insights

IoE Retail Value at Stake

Shopper efficiency contributes almost 67 percent of the gross annual Value at Stake of $312 million (an annual opportunity of $208 million).

Retail firms can also derive significant value from consumer financial savings ($59 million) and shopper engagement ($45 million).

IoE Retail Value at Stake

IoE-enabled solutions can drive EBIT gains of about 15.6 percent for a typical retailer with annual revenue of $20 billion and an EBIT margin of 7 percent. This represents a gross annual opportunity of $312 million. Assuming annual IoE technology and implementation costs of $93 million, the net annual EBIT opportunity is $219 million.

are contextual, relevant, and timely. To succeed in this area, retailers need a technology strategy that captures data at the "edge" of the network — from mobile devices, sensors, video cameras, and the like — and analyzes it locally, in real time, to respond to fast-moving opportunities. Analytics is a cornerstone for realizing gains in operational efficiency, as it drives employee productivity, efficiency, and cost savings.

4. **Build a dynamic infrastructure and create agile processes that allow you to deliver hyper-relevant experiences.** Hyper-relevance begins with hyper-awareness, through the deployment of pervasive sensors at critical spots in the shopping journey and in the store environment itself. This dynamic infrastructure enables retailers to capture data about where their assets are, and within the context of what their customers are doing at any given time. When retailers gain the ability to predict and address the needs of their customers, they will become more agile and innovate hyper-relevant experiences at a higher speed.

5. **Develop new business models that drive innovation and enable hyper-relevance.** Retail organizations often fail to realize their full return on investment for digital projects. That is because they are implemented in a piecemeal fashion rather than addressed from the top down as a business transformation effort.

As our survey results indicate, these steps can bring retailers into the IoE era as they gain an opportunity to drive innovation, rather than fall behind. Retailers must offer their customers the right engagements, the right technologies, and the right experiences (informed by context and offering hyper-relevance). By cultivating the ecosystem and creating the foundation that will make these offerings a reality, retailers will thrive and win.

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