P Prism

Video and the Internet of Things

Solving the Brick-and-Mortar Challenge

Overview

Last year, U.S. retail sales topped $3.19 trillion.[1] Even with the rapid expansion of online and other new sales channels, 92% of those sales were captured by brick-and-mortar retailers, and over 90% of shoppers still say they prefer to shop in-store.[2] So by no means is traditional retail on its way out — but when just a decade ago physical stores accounted for 97% of all retail sales, it's clear that they now face much more of a challenge from retail market competitors.

To keep brick-and-mortar stores competitive and increasingly profitable, retailers need a new way to match the adaptive, data-driven flexibility of their e-commerce counterparts and competitors, and the Internet of Things has generated just the opportunity. IoT has encouraged a new technical mindset for connected stores as well as a renewed enthusiasm for extracting, aggregating, and synthesizing all types of data from the sensors that are readily available in-store — and with it, brick-and-mortar businesses can achieve the data-driven competitive edge they need.

This white paper explores the advantages that new IoT and big data strategies deliver to brick-and-mortar retailers. Specifically, by taking a look at a widely used but often under-utilized set of devices — the video cameras already present on most sales floors — and reinventing them as insight-rich IoT sensors for retail, stores can adapt and optimize like their e-commerce counterparts. Rethinking cameras as powerful big-data tools delivers the visual data retailers need to increase sales, understand the customer experience, and reduce the cost of doing business.

The Brick-and-Mortar Challenge

E-commerce's advantage lies in its data. From clicks to eye-tracking, online businesses can understand exactly how shoppers experience their "space." Brick-and-mortar retailers, on the other hand, are woefully under-informed — less than 25% of retailers even track basic store traffic.[3] When it comes to audits and quantifying the success of their visual merchandising strategies, traditional retailers currently rely on outdated checklists administered by a costly field team, with data sparsely sampled and collected in simple spreadsheets that offer no real-time results and no visual verification.[4, 10]

On a daily basis, most retailers are limited by the following:

— **Very little visibility** into remote sites

— **No understanding** of how customers experience the store space

— **Limited bandwidth and networks** that fail to meet the information demand

— **High cost and low returns** of secret shopper programs, in-person audits, and site visits

The result is a significant lack of actionable in-store data, which costs retailers time, customer retention, and sales.

Increasing retailers' access to data can be a game changer — not just for addressing weaknesses that arise from lack of information, like compliance, but also for raising the underlying bar for performance. When merchandising design and presentation are perfected, whether through impeccable visual display or optimal placement based on traffic trends, retailers can craft an experience that 32% of customers say they use while in-store to "get inspiration" for shopping.[5] Perfecting the visual display of merchandise and the in-store experience can also be instrumental in retaining existing customers and increasing sales conversion by up to 25%.[6]

Perfecting your visual displays can increase conversion

25%

And having the data to make smart decisions about how they run their stores absolutely helps brick-and-mortar retailers compete against e-commerce. When physical stores implement IoT big data solutions to meet their hallmark challenges, they see productivity rates and sales a minimum of 5-6% higher than their peers not using IoT insights.[7]

So the need is there, and the potential is there — but what exactly are the IoT big data solutions that convert video into smart, bandwidth-optimized visual insights? And how can they meet brick-and-mortar retailers' fundamental challenges?

Our Solution

In order to make every brick-and-mortar store as adaptive as its online counterpart, two things are needed in real-time: visual access and actionable data on what's happening inside the space. Perhaps more surprisingly, there's one answer for both of these requirements — video.

Video cameras have generally been costly, siloed tools for reducing shrink that eat up bandwidth when remotely accessed, and rarely produce a valuable clip in the thousands of hours of footage they collect. But in part through Prism, security cameras are being reimagined as IoT devices that harness the visual and analytical data trapped within video.

"The ongoing request for store access by merchandising, store design, marketing and other store operations groups is often misunderstood as a request for video," says Bob Cutting, COO and Co-Founder at Prism. "The real ask is for insights...and a readily available way to visually browse and understand what's happening in my stores."

Visual Insights

Smart video summaries of activity and key events — coupled with contextual traffic pattern data — enable retailers to finally get the answers that their visual merchandising, marketing, and store operations teams need. When those summaries and insights are extracted across hundreds or thousands of cameras without monopolizing bandwidth, retail teams can access those key answers for a national or global set of connected stores. Additionally, these visual insights provide the baseline framework for cameras essential to making them higher-value, visual IoT data sensors. It's the combination of real-time, insight-rich visual summaries and a robust IoT platform that makes these sensors incredibly worthwhile to retailers competing with e-commerce insights.

"Just as Prism looks to reimagine video, it's also time to reimagine the camera."

Bob Cutting
COO and Co-Founder
Prism

As Bob Cutting of Prism put it, "Just as Prism looks to reimagine video, it's also time to reimagine the camera. By improving the camera's ability to output a more diverse set of valuable data streams, we can really transform these devices into connected sensors that better serve the information-driven needs of the end-user."

There is no better retail use case than visual merchandising in regard to immediate, impactful benefits from this type of solution. Accessing richer insights from video are just part of a true IoT offering for visual merchandising end users, but the real key is accessibility — which starts with understanding what needs to be accessed and how it can be consumed. The insights retailers are seeking include:

— Is the new product launch properly executed?

— Is the new Spring display properly and fully merchandised?

— Are my stores compliant with the display and signage requirements per planogram?

— How did moving the product affect the traffic flow pattern?

Not only do these questions demand answers, but they also have to be answered across hundreds of stores. And while the solutions for these problems are very visual, the traditional approach (video) may not be the most conducive for quickly browsing and digesting this information.

Instead of leading with full video, it can be transformed into low-bandwidth and event-oriented visual summaries. IoT video technology introduces the ability to swipe through minutes and hours of full-resolution highlight snapshots or interact with advanced computer-vision-driven flipbooks and visual montages of key events and objects of interest. By generating a continuous, always-accessible stream of valuable images and rich visual summaries, IoT video technology delivers a much more robust and streamlined method for end-users to see what's going on and answer the daily merchandising questions that arise. Plus, if more information is needed, the user still has the full ability to fetch video. The result is a more engaging user experience, with richer insights and a significantly decreased use of bandwidth thanks to more selective video requests.

In visual merchandising, as designs and prototypes move from development to global deployments, retailers often question the investment they're making. No matter how extensively those store floor rollouts are planned, they lack hard ROI data without real-time in-store data. When visual merchandising use cases are expanded to more formal store audits, an effective remote visual access tool can also reduce costs by millions of dollars and create an audit program that can be executed more frequently and deliver more consistent results through a centralized team of remote auditors. Even more so, it can help retailers quickly identify when issues actually occurred and when they were resolved.

With real-time visual access, retailers can answer any visual merchandising questions, from A/B testing displays' impacts on walk-by capture rates to verifying promotion rollouts or sales-floor cleanliness. The remote component ensures these visual tools cost a fraction of the price of an on-site visit, and the ROI is powerful. Using only video IoT tools for visual access and retail insights has generated anywhere from a 1-2% year-over-year sales increase, to a 30% department-specific bump in store conversion in a single quarter.

The Role of Analytics

The remote access and smart software that surfaces events of interest in video footage are key for delivering the retail insights and visual data retailers need. In addition, those same analytics are key for generating visual models of traffic data. To bring the full store environment online, retailers must have access to customer pattern data — and that missing piece is what analytics provide. Like tracking eyes on a webpage, customer movements throughout the store tell a story about how they experience the products and layout. Video IoT tools can capture these patterns, privacy-protect the customers themselves, and deliver the insights to retailers in real time.
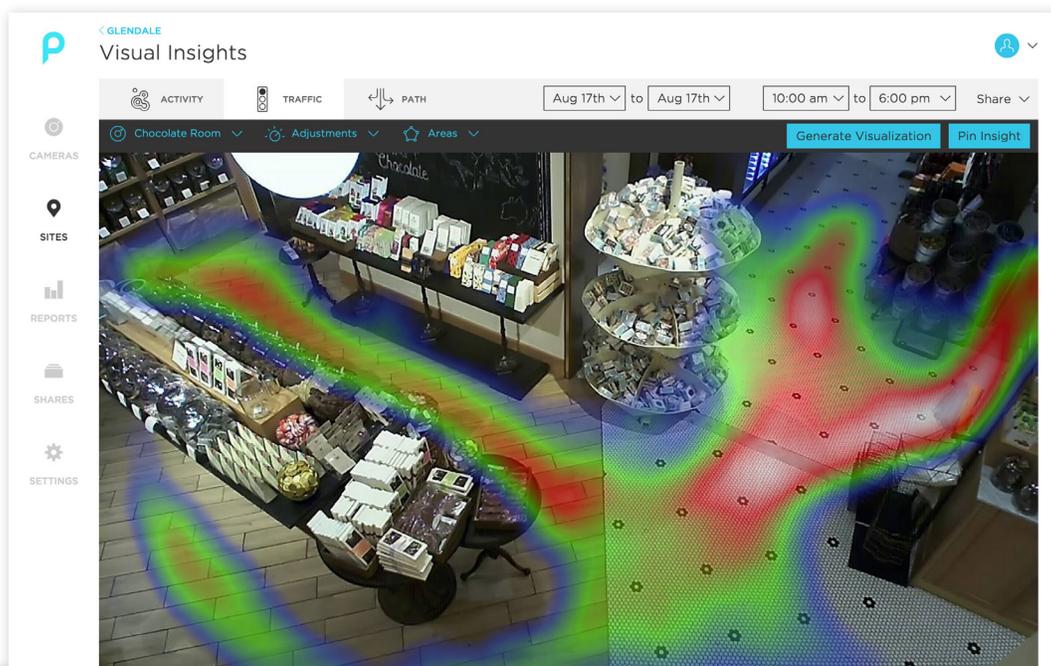
Prism Traffic Heatmap

With insights like heatmaps and pathmaps, dwell, and occupancy reports, retailers can engage with visual summaries of how customers move throughout their store, where they linger, what displays they spend the most time with, what products and store corners lack attention, and how merchandising changes affect traffic flow. When delivered alongside video-enabled customer counting data, retailers can truly quantify entry and display sales conversion for any and all of their stores. And when retailers use IoT video for both visual insights and visual access to optimize particular departments, they see sales increases of up to 35% in those departments.

The result is an unprecedented ability to analyze your space and visually immerse yourself in any store. Switching from the traffic summaries of the web interface to remote visual access to event tapestries on their mobile phones, retailers can build their contextual understanding of every space — and all of it's available directly from IoT-connected video sensors.

Conclusion

"The combination of full-resolution imagery and real-time, low-bandwidth visual access really highlights our IoT capabilities and how this technology can be transformative for brick-and-mortar businesses. Looking toward a connected future — there are already 736 million IoT devices out there, and our latest camera models are just the tip of the iceberg — this is reinventing how we interact with video and optimize physical spaces."

Bob Cutting
COO and Co-Founder
Prism

Brick-and-mortar businesses know they need to understand store effectiveness more like their e-commerce competitors in order to optimize their space and improve their sales. But while retailers spend over $4 trillion annually on merchandising, and upwards of $108 million annually on programs like mystery shopping,[8, 9] by the time any merchandising or ROI reports get to the business development team, they're outdated, lack visual context, and are largely inactionable.

It's clear that traditional retailers need to bring big data to the store environment in order to better compete with e-commerce's data-driven decisions. Luckily, this need is being met with an emerging movement in technology. Video cameras have been reinvented as IoT-enabled visual sensors to meet the end-user needs for big data and real-time answers at low bandwidth, and we're just beginning to see the full range of possibilities they present. Between A/B testing tools and visual summaries, remote visual access, and streaming low-bandwidth video and event summaries on any phone or web browser, retailers can understand how customers interact with their stores as if they were online. And when every one of these insights is available directly on a new generation of IoT video sensors, "tomorrow" is here today for brick-and-mortar stores.

Now it's just up to businesses to take the leap and start using the new technology at their disposal to meet the challenges of a changing market and ensure their future success — and IoT video sensors are a good place to start.

Sources:

1   "Annual Retail Industry Sales in the United States 2000-2014." *Statista*. Web. 14 Jan. 2016.

2   "US E-Commerce Sales as Percent of Retail Sales: 7.40% for Q3 2015." *YCharts*. Web. 17 Dec. 2015.

3   Lunka, Ryan. "Retail Data: 100 Stats About Retail, ECommerce & Digital Marketing." *Multichannel Insights Blog*. NChannel, 9 July 2015. Web. 17 Dec. 2015.

4   Bertolino, Keri. "New National Study Finds In-Store Merchandising Is a Broken, Outdated Process at Most Retail Chains." *Press Release*. Reuters, 16 July 2013. Web. 17 Dec. 2015.

5   "Digital Impact on In-Store Shopping: Research Debunks Common Myths." *Think with Google*. Google, 1 Oct. 2014. Web. 17 Dec. 2015.

6   Puzzo, Daniela. "10 Important Customer Experience Statistics for 2016." *Customer Service Blog*. Fonolo, 1 Oct. 2015. Web. 17 Dec. 2015.

7   Gordon, Jonathan, Jesko Perrey, and Dennis Spillecke. "Big Data, Analytics and the Future of Marketing and Sales." *Forbes CMO Network*. Forbes Magazine, 22 July 2013. Web. 17 Dec. 2015.

8   Dorbian, Iris. "Quri Inks $17 Mln Series C." *The PE HUB Network*. Buyouts Insider / Argosy Group LLC, 14 Oct. 2015. Web. 17 Dec. 2015.

9   Burns, Catherine. "Mystery Shoppers: Do Companies Benefit?" *BBC News*. BBC, 15 Apr. 2011. Web. 17 Dec. 2015.

10 "How Much Do Retail Audits Cost?" *Retail Audit And Store Execution Software | Compliantia*. 28 Feb. 2011. Web. 17 Dec. 2015.