Solving for satisfaction:
Data management and retail success

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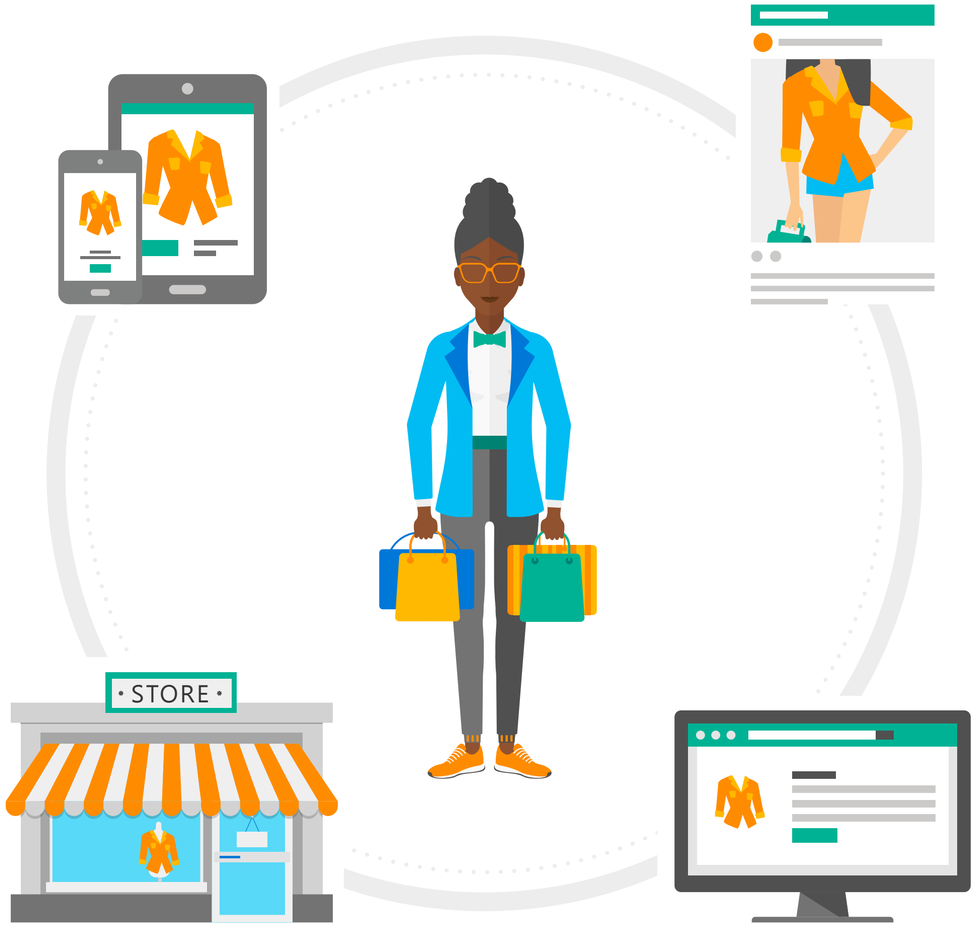
Introduction

In addition to the tremendous success of Internet and catalog retailing, brick-and-mortar sales are still a growing market. The balance between online and brick-and-mortar businesses is different for each company. In-store visits are just one of many touch points in the purchasing process and the recent rise of Internet-based sales shows that personal contact is not always required for a highly satisfactory customer experience.

A significant amount of shopping research takes place outside stores, so when a potential buyer takes the time to go into a physical location, it is important that the experience is pleasurable and highly satisfactory. Whether the contact or brand encounter takes place online or offline, customers expect merchants to fulfill the brand promise as part of the trust-building process.

Sharing information helps develop a reciprocal understanding between retailer and shopper. Many retailers already collect and utilize a significant body of knowledge about customers and prospects, with more data coming in all the time. With new cloud-based data collection, storage, and processing technologies, merchants are successfully applying insights from advanced analytics to better serve the customer throughout the purchasing process.



Connectivity is changing the retail landscape

The popularity of online stores, mobile phones, and other cloud-based networks has created numerous new ways to interact with customers. Providing a consistent experience with real value for every shopper across multiple visits and channels is a continual challenge, but it's made easier with a deep understanding of customer wants, needs, and preferences. With efficient use of retail-relevant data, merchants can put together a 360-degree view of each customer and analyze the market individually and in aggregate as needed.

Retailers are now in contact with shoppers in numerous ways, however, this increased access comes with the responsibility to handle the customer consistently across different communication channels. Customers expect the retailer to know what's going on in their lives. Shoppers perform a range of activities, from the practice of showrooming, or going to a physical store to touch and feel a product and then buying it online, to its opposite, webrooming, when the customer performs online or mobile phone research before making the purchase in a brick-and-mortar outlet. Whatever method is chosen, people want shopping to be fun, personal, and rewarding.

Accessing and storing big data

Data is now easily uploaded, stored, and accessible from more sources and channels than ever before. It is possible to efficiently combine and cross-reference proprietary data with public information and other data sets that are free or available for purchase. By practicing the art and science of modern data management, companies offering goods and services through any retail channel can now construct a more comprehensive omnichannel profile of their customers. This in turn improves customer satisfaction as the merchant learns more about customer habits and desires, with the added opportunity to uncover patterns and predictors of future customer actions.

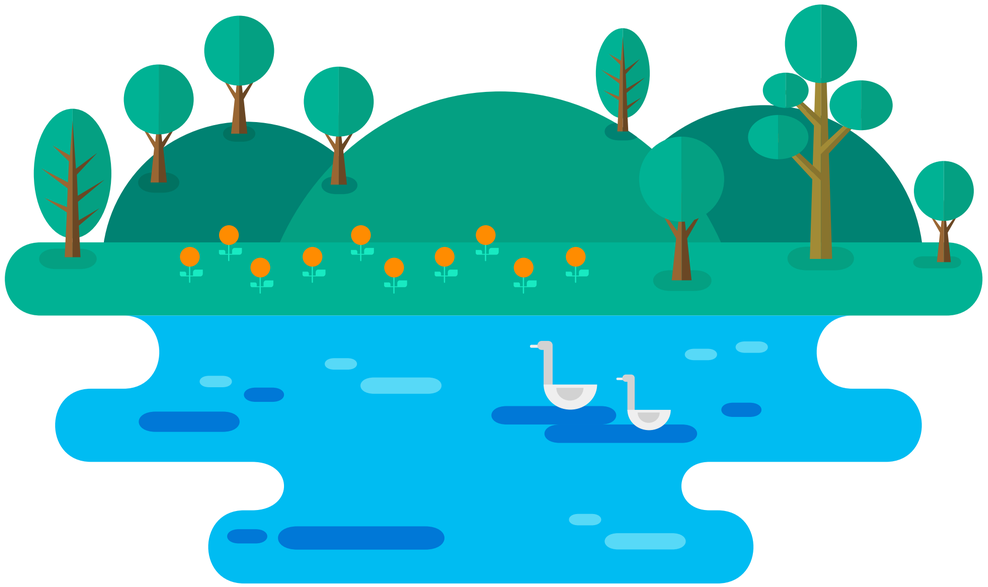
The Internet of Things (IoT) brings in masses of information about the locations, weights, sizes, movements, and other qualities of people and objects. The data, which is collected from electronic and magnetic sensor chips found on tags and products, can be anything from real-time biological information collected by a fitness app or device to the coordinates marking the geographic progress of a consignment of shoes through a retail supply chain and distribution channels.

Why develop a data lake?

Companies are finding that big data analysis helps them to better anticipate the actions and needs of various market segments, impacting decisions about supply, merchandising, and operations. Patterns in the data can illustrate numerous ways to align fulfillment and delivery methods and timing, workforce planning, promotions, real-time fraud and loss prevention, store design, shelf layout, and other key aspects of operations, marketing, and sales. By organizing a unique data lake and sharing non-personally identifiable information (PII) within the industry, retailers are making faster data-centric decisions for better results.

Simply being able to store proprietary data in cloud-based or hybrid systems is valuable to many retailers. Large-scale data retention solutions can improve the level of data security, provide built-in regulatory compliance and increase the validation and standardization of the data. Off-loading historic data sets from expensive physical appliances to a cloud-based storage service often results in a net cost savings and a more sustainable future-proof system.

The key retail business benefit from big data analysis is the ability to use both historic and real-time data to create a more accurate picture of customers that enables merchants to inform, incent, and empower people during each shopping experience. This can take the form of targeted offers and promotions, new co-marketing strategies, loyalty program management, price testing and optimization, demand forecasting, and supply chain modeling.



Who is winning with big data?

Sharing information helps develop a reciprocal understanding between retailer and shopper. With new cloud-based data collection, storage, and processing technologies, stores can increasingly apply insights from automated calculations to better serve the customer throughout the purchasing process.

While some merchants are struggling to differentiate themselves in the volume of offerings, others have used big data to personalize the customer experience and increase satisfaction. Merchants such as zulily, Blackball, Pier 1 Imports, Luminar, and Ziosk are among those successfully using cloud-based big data solutions for these purposes.

zulily (online retailer) "Our new platform empowers us to use data all over the business. It's allowing us to make sure that we're tailoring customer experiences appropriately. It is allowing us to accelerate decision-making processes from weeks, days, and hours to minutes, seconds, and milliseconds." —Luke Friang, CIO **Read the customer story**

Blackball (tea and dessert shop chain) "Our people are not IT professionals, so a highly complex system just doesn't work out for us."—Andrew Cheong, Senior Manager **Read the customer story**

Pier 1 Imports (general retailer) "We are continually getting better at identifying what our customer wants."—Sharon Leite, EVP Sales and Customer Experience **Read the customer story**

Luminar (retail software) "The biggest compliment from the front end is that everything is seamless. We have a true big data environment. I need it to work flawlessly for our customers, and it does."—Oscar Padilla, Vice President of Strategy **Read the customer story**

Ziosk (restaurant guest services) "We are using Azure to make our UX smarter and truer to its purpose: enhancing the guest experience."—Kevin Mowry, Chief Software Architect **Read the customer story**

The future of data management

Adoption of cloud-based data storage is projected to be rapid across the industry due to an often immediate lower cost of data management. As merchants increasingly enjoy the benefits of big data analysis, more collaborative efforts have emerged. Once a company begins to cross-reference and validate its proprietary data with the mass of available information, managers and line staff alike can gain access to a stable, simplified, and even automated source of information. Retailers are beginning to trust in the long-term benefits of this data lake because it enables new scenarios that produce results.

Deeply understanding the entire purchasing cycle helps retailers to provide better customer service and to deliver highly satisfying shopping experiences at a much faster pace and lower operational cost.

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Hortonworks and Microsoft can help retailers optimize their insights from data

Hortonworks and Microsoft have come together to transform data within your organization into intelligent action. Over the past decade, we've learned that the characteristics of data used to drive decisions have fundamentally changed. It is no longer sufficient to only use the relational data captured from your line of business (LOB) applications or data from your enterprise resource planning and customer relationship management; nonrelational data needs to be captured from social feeds, click streams, RFID, weather feeds, and devices, which can unlock profound insights to the business. It is no longer just about storing your data-at-rest in a permanent store; data-in-motion needs to be captured—particularly as smart devices are wired up in Internet of Things (IoT) scenarios. Finally, it's not just about data that lives on-premises in your own data center; the cloud needs to be incorporated—because it provides virtually limitless scale while lowering the costs of your IT operations.

Hortonworks and Microsoft do all of this together through our joint cloud offerings. Microsoft Azure HDInsight, built on the Hortonworks Data Platform, is the premier offering for customers pursuing big data and analytics use cases in the cloud. Microsoft Azure HDInsight also offers a seamless extension of Hortonworks Data Platform from a customer's data center to the cloud, as Hortonworks' premier Connected Data Platforms cloud solution.

On-premises, Microsoft provides SQL Server, the world's most widely deployed relational database management system in the world, while Hortonworks provides Hortonworks Data Platform and Data Flow, one of the world's most widely deployed Hadoop distributions. In the cloud, Microsoft offers IoT Suite and Cortana Intelligence Suite, which showcases Azure HDInsight. And to unify the solutions, Microsoft offers PolyBase on-premises and in the cloud, which allows you to federate and distribute your queries across relational and nonrelational sources.

Microsoft and Hortonworks have been pioneering data solutions jointly for our customers for over four years. Together, we help organizations realize the advantages of doing analytics on all of your data to drive intelligent action.

Learn more about Azure HDInsight at **www.hortonworks.com/HDInsight** or email **HDI@hortonworks.com** to schedule a consultation.

Resources

Microsoft Azure HDInsight product page

"What is Hadoop in the cloud? An introduction to Hadoop components in HDInsight for big data analysis"

HDInsight documentation

Microsoft Azure Marketplace for purchasable data

Gartner Data and Analytics

"A Very Short History of Big Data," Forbes, May 9, 2013

"What is big data: An introduction to the big data landscape," O'Reilly, Jan. 11, 2012