UNDERSTANDING
ADVANCED ANALYTICS

to Build a Stronger Customer Experience

Microsoft

Contents

Introduction

Today's consumers shop anytime and anywhere and expect their favorite brands to anticipate their needs at every part of their customer journey. Their purchase paths cross channels (online, in-store, and in-app) and erase boundaries between the physical and digital worlds. They also want more self-service options and expect efficient, effortless, and personalized service as they nonstop shop.

At the same time, retailers are collecting an abundance of data that is often buried behind silos or underused, affecting the consumer's shopping experience. Retailers need to find the small data in the big—what's important to the individual customer versus total sales numbers—and then use it to deliver the contextual experiences and to optimize for product availability according to what customers want. And they need to understand how, in today's world, better customer experience is at the intersection of product, marketing, and customer service.

Advanced analytics enables retailers to improve the customer experience and ensure you have the right merchandise, at the right place, at the right time.[1]

Retail executives face mounting pressure to evolve business models that make sense in a global marketplace characterized by disruptive technological innovations and fierce competition for consumer

dollars. New technologies promise better customer shopping experiences, more agile inventory management, and expanded access to diverse data that provides retailers with critical real-time insights into their business. By using advanced analytics, retailers can better personalize the shopping experience, resulting in better customer retention and improved sales performance.

In today's retail landscape of increasing customer expectation, smart use of data can help retailers outperform their competitors. Businesses can reap huge dividends by embracing a data culture; a modern retail store system can improve operational effectiveness and customer engagement, while providing complete visibility into inventory and customer data.

IDC reports that companies that take advantage of their data have the potential to raise an additional $1.6 trillion in revenue over companies that don't. How do retailers do that? By leveraging diverse data sources, embracing new forms of analytics, and empowering more people across organizations to ask questions of the data. Today's advanced analytics brings together all of these activities, enabling decision makers to respond faster to the market and quickly act on those decisions.

In this eBook, we cut through the hype about advanced analytics and present it in a straightforward, actionable way that shows how it leads to value and a competitive advantage for retailers.

1. Retail data and analytics

What if a customer could search for the softest scarf online and then go to the store to feel the scarf's material? Once in the store, she would be directed to the scarf—and offered a promotional discount for it. And next to the scarf would be the perfect purse … and the customer wouldn't even have it on her shopping list.

This isn't just a what-if scenario. Today, retailers are taking advantage of the vast amounts of data that they can access to get a full understanding of the customer journey. And by having a more accurate understanding of the customer's needs, retailers can ensure they have the right merchandise, at the right place, and at the right time, providing a more personalized customer experience.

Providing a superior and very personalized experience for customers that puts them in control and anticipates their needs is critical for retailers. And it's all fueled by advanced analytics that forecast demand, optimize availability, and enable seamless customer experiences.

Business intelligence and analytics disciplines are rapidly evolving, shifting from looking at historical data to understand what happened, and capturing real-time data to understand why it happened, to using predictive analytics to understand what will happen. Retailers embracing advanced analytics create new insights, new business models, and new ways of staying ahead of competition.

Data overload

Retailers are continuously processing a growing amount of available data. And within that data holds infinite insights—yet companies have just begun to understand the possible innovations, discoveries, products, services, and relationships that analytics can provide.

Analysts' consensus estimates enterprise data growth of 50x year over year through 2020, 85% of growth from new types of data with machine generated data increasing.[2]

In the past, data flowed into corporate servers in a structured format from limited sources. Today, a flood of data pours in from many sources and can be structured, semistructured, or unstructured. In addition to handling these different types of data, retailers must manage data that can reside in multiple places, including on-premises, in the cloud, and on mobile devices. And they must be able to access both historical data and real-time data.

The efficient capture and processing of data is the first step in transforming information into business insights. But there are challenges: analytics teams have turned into reporting teams. Data projects are often abandoned in favor of other priorities because research requests don't often produce immediate results.

Retailers' analytics teams may be able to identify unique business opportunities, but lack the ability or process to execute the change. That is because there is a disconnect between how the data is being analyzed and how it is being used.

Transformational **trends**

cloud computing[3]
2011 > 2016 5x Increase

smartphone[7]
There are 2.6 billion smartphone subscriptions globally and it's predicted to increase to 6.1 billion smartphones by 2020

emerging data science talent[6]
Universities filing 300,000 U.S. talent gap

data explosion[4]
$94 billion data opportunity for retail

connected customers[5]
100M   300M   307M   1.55B

In addition, in the age of abundant data, many companies are focusing on how to organize that data and which tools to buy, rather than on pulling valuable insights from analytics. And because many companies are investing in multiple channels, they historically have had siloed data that doesn't enable the ability to see the entire customer journey.

Retailers who continue to do business the way they always have without evolving their business practices may soon find themselves outpaced and outmatched in a ruthlessly competitive marketplace. Organizations need to change the way they think about where they get analytics; it's not just through marketing channels, such as email or social. And it's not even solely from ubiquitous sensors and other mobile devices in an age of the Internet of Things (IoT), such as smartphones, tablets, and wearables. It's from all of these combined— the entire customer journey and experience.

Retailers who understand how to use their vast amounts of data to solve their unique business problem and develop a unified commerce model are able to better deliver customer-based pricing, enhanced product availability, and a seamless shopping experience. Whether consumers are shopping at home, in the store, or while mobile from their smartphone, retailers who understand how to best use their data are better able to provide an improved customer-centric experience and better demand forecasting, in addition to the ability to predict the probable demand for a product or a service on the basis of the past events and prevailing trends in the present.

The evolving advantages of data

Over the next few years, the effects of data overload on retailers will create more change than ever before, and retailers will need advanced analytics capabilities. At the same time, consumers will continue to become even better informed and empowered, so retailers will be required to challenge business assumptions while competing for business in an environment where constructs, such as brand loyalty, will have less impact.

But retailers who are able to take advantage of their sales, inventory, and customer data are also seeing increases in store profitability and overall revenue and a decrease in inventory markdowns turnover that affect overall profit.

According to a recent IDC report, by 2017, retail companies that take advantage of their data can potentially realize an additional $94 billion in revenue over companies that don't. Key opportunity areas include employee productivity ($41 billion), operational improvement ($29 billion), product innovation ($15 billion), and customer-facing experiences ($9 billion).

When asked what role big data or advanced analytics play in their competitiveness, 64% of executives surveyed said that analytical capabilities give them a competitive advantage.[8]

Retailers who don't keep up with innovations in commerce, technology, and business practices will find it increasingly difficult to continue to attract and retain customers. With industry competitors expanding sales by devising new ways to market and bundle merchandise, retailers are also discovering that suppliers are making exclusive deals with competitors who are able to predict inventory needs with greater efficiency and accuracy.

Furthermore, in the digitalized marketplace, multichannel retailer CIOs and business intelligence and analytics leaders must quickly isolate opportunities

locked away in big data, using advanced analytics delivered with active visualization, aimed at the correct person, at the time of decision.

To serve customers best, retailers need to understand—and implement—individualized marketing by providing the customer an experience exactly the way they want it. By understanding consumers as individuals, retailers are more empowered to better serve their needs. With advanced analytics, retailers are better able to look at shopping history and predict customer behavior, and then quickly track and assess different customer offers to take the customer experience to a new level.

Solving the right business problem

It's not enough to capture and analyze the data; it's also important to understand how to use that information to best address a company's unique business problem. For example, how a big box retailer uses data to identify its customers' needs—and solve for that—will be very different than the way a quick service restaurant will use its data to solve its customer pain points.

★macy's

Macy's increased profits through an omni-channel strategy that improved efficiencies in inventory management and increased sales when customers went to stores to pick up their online orders. According to STORES, the National Retail Federation magazine, "Macy's fourth-quarter sales increased to $9.4 billion, up 1.8 percent from the prior year," even though the sales didn't come from their highest-profit departments.

The companies that are asking questions of their data and making the most of every opportunity to innovate and adapt are the companies that are moving forward. And most important, the most successful retailers are examining data in terms of customer experience. For instance, companies that identify advanced segmentation, which better targets individual customers and enhances the customer experience, are better able to develop successful customer loyalty and retention programs and to provide meaningful, personalized consumer interactions.

The next chapter provides a primer on advanced analytics. The following chapters go into detail about how to take advantage of advanced analytics in an omni-channel strategy, to improve customer experience with better data insights, and to leverage advanced analytics tools and models for better demand forecasting.

Key takeaways:

- Gaining insights from data through advanced analytics to increase sales.
- Turning data into actionable results and driving cross-channel insights.
- Using advanced analytics to address a business's unique challenges.

2. Advanced analytics 101

Taking advantage of all the data retailers have access to today is critical to both the bottom line and the customer experience, and involves better understanding customers and then capitalizing on that information. These businesses are attempting to make sense of the data generated through personal, societal, and industrial interactions, such as social media, mobile devices, geolocation, media, digital sensors, point of sale, and automation.

Hindsight to insight to foresight

The use of data to make decisions is not new; the field of business analytics emerged in the 1950s when computers were introduced to process large quantities of information and could identify business trends faster than the human mind. Typically, the data was from internal systems, relatively small and structured, and the focus of early business analytics was to gather historical information and identify trends providing greater business **hindsight**.

Analytics lets retailers look at historical data to gain insight and drive business planning.

In the mid-2000s, as Internet-based and social network companies began to amass and analyze new kinds of information, the term *big data* was coined to recognize the large amount of data that was being generated by internal transaction systems and external sources. However, big data is often difficult to collect, filter, analyze, and interpret to gain business **insight**.

While the data keeps growing exponentially, retailers who are able to access both historical data and real-time data from a variety of sources and analyze it in a meaningful way can transform information into business insight. Today, success is determined not by whether an organization invests in business analytics solutions but how it invests in them.[9]

90%
of big data has been created in the past two years.[10]

40ZB
It is expected that by 2020 the amount of digital information in existence will have grown to 40 zettabytes.[11]

The ongoing explosion of data comes from a variety of sources, including public data (openly available records), purchased data (secondary research done by a third party), and proprietary data. This data is broken down into three categories:

• **Structured data**, or data that resides in a fixed field within a record or file, such as data from a loyalty program. Structured data is organized according to the retailer's preference, so it's easy to drill down and turn insights into action.

• **Unstructured data**, or information that doesn't reside in a traditional row-column database and is disorganized by design. This includes customer reviews or social media posts. This data is more difficult to access and organize in a meaningful way.

• **Semistructured data**, which lies between structured and unstructured, such as in-store monitoring of customer behavior.

Although the use of business analytics has typically looked historically at data, advanced analytics focuses on forecasting future events and behaviors, allowing businesses to conduct what-if analyses to predict the effects of potential changes in business strategies. Most advanced analytics solutions include predictive analytics, data mining, big data analytics, and location intelligence. In the past, developing such complex analyses required teams of experienced statisticians, but today's advanced analytic solutions include data visualization technologies that have made predictive modeling accessible to retailers, giving them, at long last, the power of **foresight**.

Retailers are using advanced analytics to take advantage of the abundance of data to deliver data-enriched offerings to their customers. Advanced analytics helps retailers not only capture the data but better answer business questions and visualize data for further analysis. Advanced analytics combines predictive analytics–what might happen, and prescriptive analytics–what should happen and the best ways to optimize results–to help retailers better understand how to sell more of a product, predict what a customer wants, ensure the right level of inventory and assortment is available, and create a more personalized and seamless experience, no matter where the customer shops. This lets retailers to better manage their inventory to confirm the right product is in the right location, at the right time. This provides better inventory tracking and guarantees the customer gets the product, or the right touch in their customer journey, when they want it.

By connecting real-time data with business decision makers, retailers are able to provide personalized customer experiences and improve demand forecasting.

Using data to solve business questions

In addition to capturing data in a manageable way, it's also important to understand which business questions that data will be used to answer. To get the most insight out of these analytics, retailers need to ask a variety of questions of the data: what products should we develop and sell? How much is the customer willing to pay? Which products should we discount, and when? Which marketing vehicles will allow us to reach the most customers?

One of the key components of advanced analytics is predictive analysis from data that can help companies answer business questions and assists in combining and visualizing data for further analysis. Organizations use predictive analytics to develop a customer lifetime value (CLTV) measure. The CLTV measure can aid in developing digital marketing models to determine which ad to place and where to place it.

While predictive analytics tells you what will likely happen, prescriptive analytics tells you what to do about it. More specifically, prescriptive analytics optimizes decisions and tells companies which actions to take to maximize profitable growth, given their business constraints.

To collect all this data, retailers use two methods:

In-store analytics. This refers to the physical monitoring of customers, which can reveal valuable information. Some of the capabilities used include video-tracking customer movements, using recognition technology to determine gender, and identifying unique visitors across multiple store visits.

Online analytics. This refers to the collection and analysis of online customer information. Commonly used tools monitor social media, mobile device usage, and web searches to assess individual online movement, brand sentiment, and shopping patterns.

In-store analytics helps retailers improve customers' store experience and identify hot products and areas of the store. Online analytics helps track customer satisfaction levels and define personalized services to offer customers. Combining both sets of data is critical to retailers gaining a 360-degree—or holistic—view of their customer.

Put your data to work—today and tomorrow

Data is continuing to explode daily. With the ever-increasing pace of technological innovation and customers who want more personalized shopping experiences across devices, both online and in-store,

retail business executives need the right foundation of data analytics solutions to help them:

• Provide a rich, personalized, seamless shopping experience across multiple channels.
• Tailor customer experiences and recommendations.
• Forecast demand to manage inventory more effectively across multiple retail channels.
• Improve efficiency throughout their organization.
• Maximize profitability of the goods they sell.

Pier 1 imports®

By combining online and in-store transactional and behavioral data to predict customer purchase intent, Pier 1 was able to deliver highly relevant marketing messages and increase upsell opportunities. This resulted in providing customers with consistent and personal messaging across brick and mortar, mobile, and web and targeted product recommendations.

"We are continually getting better at identifying what our customer wants."

– Sharon Leite, Pier 1 Imports EVP of Sales and Customer Experience

Read more about Pier 1

As data has exponentially grown, analytics has also evolved to better understand that data. And while early analytics enabled retailers to mine data for hindsight, today's analytics enable retailers to have foresight to predict what their customers want, improving the customer experience and demand forecasting. The latest advanced analytics solutions give retailers the opportunity to combine existing and new technologies, data sources, and analysis to embrace change and drive innovations. By harnessing all of their data, retailers can create the products and service that customers want— where they want it.

Key takeaways:

• Understanding advanced analytics basics and benefits and how to take advantage of insights across channels.

• Using prescriptive and predictive analytics to gain better insights and improve demand forecasting.

• Asking the right questions of retail data to ensure businesses get the right information from their statistics.
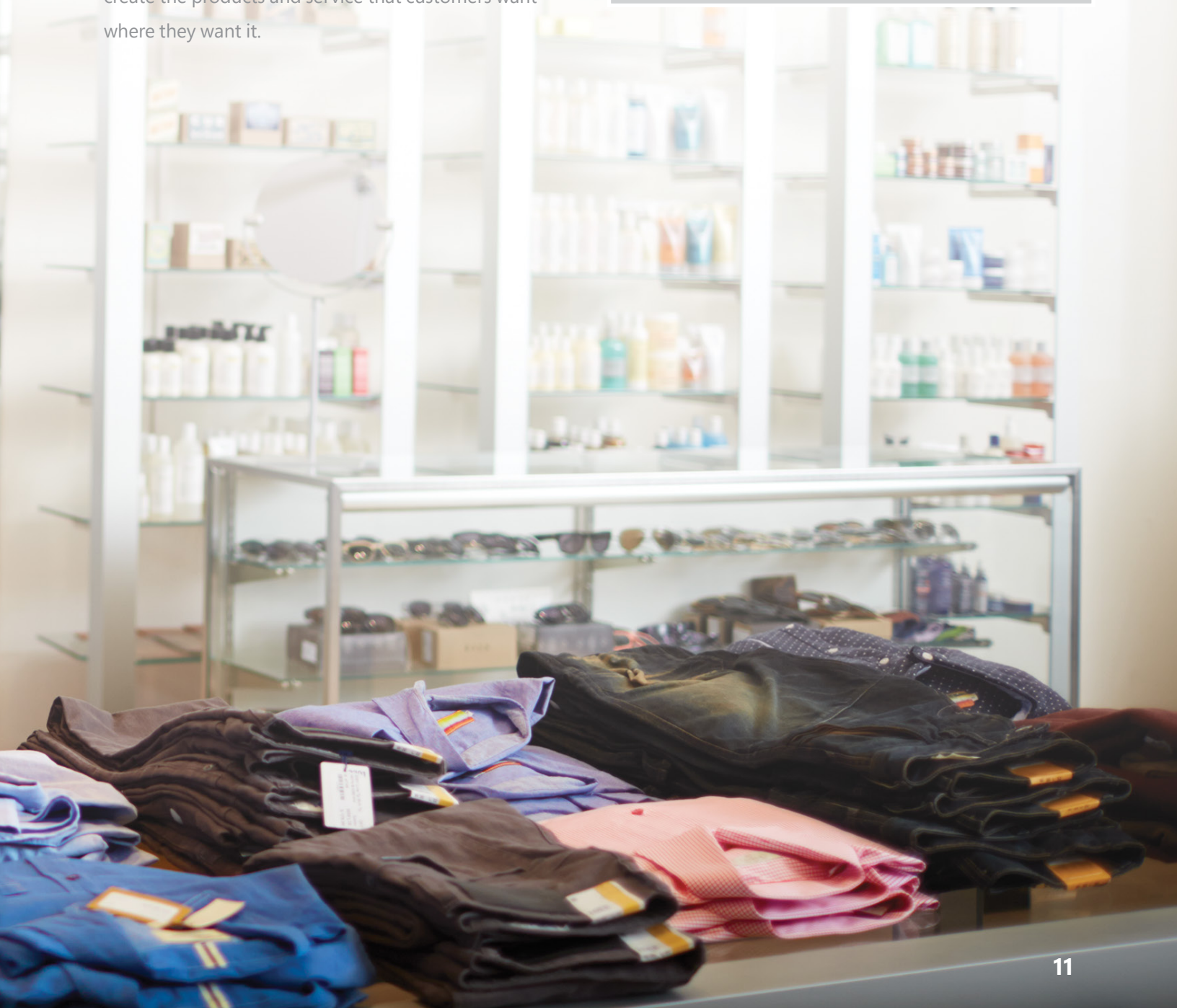
Glossary

Advanced analytics
is a grouping of analytic techniques used to predict future outcomes.

Advanced segmentation
is the ability to isolate and analyze specific groups of data to best find actionable insights.

Big data analytics
is a broad term for data sets so large or complex that traditional data processing applications are inadequate. Challenges include analysis, capture, data curation, search, sharing, storage, transfer, visualization, querying, and information privacy. The term often refers simply to the use of predictive analytics or certain other advanced methods to extract value from data, and seldom to a particular size of data set. Accuracy in big data may lead to more confident decision making, and better decisions can result in greater operational efficiency, cost reduction, and reduced risk.

Data mining
is the computational process of discovering patterns in large data sets (big data), involving methods at the intersection of artificial intelligence, machine learning, statistics, and database systems. The overall goal of the data mining process is to extract information from a data set and transform it into an understandable structure for further use.

Demand forecasting
is predicting future demand for the product. In other words, it refers to the prediction of probable demand for a product or a service on the basis of past events and prevailing trends in the present.

Location intelligence (LI)
is the process of deriving meaningful insight from geospatial data relationships to solve a particular problem.

Predictive analysis
is a variety of statistical techniques from predictive modeling, machine learning, and data mining that analyze current and historical facts to make predictions about the future.

Prescriptive analysis
automatically synthesizes big data, multiple disciplines of mathematical sciences and computational sciences, and business rules to make predictions, and then suggests decision options to take advantage of the predictions.

Unified commerce
is the holistic technology stack that provides one version of the truth for data pertaining to customers, products, pricing, and sourcing, which in turn enables the procurement, sale, and delivery of merchandise, independent of channel.

3. The omni-channel approach

Consumers today expect a seamless, personalized customer experience. When time is critical, they want to be able to pull up the app from their favorite restaurant, order their most frequent selection, transact payment in the background, and have the order ready to go when they get to the restaurant, saving them time by letting them get in and out quickly. And the restaurant can take advantage of their data to make recommendations according to the time of day (whether it's breakfast, lunch, or dinner time) or temperature (if it's hot out, maybe a cold drink is just what the customer wants but didn't think to ask for). Retailers need to develop shopping solutions that meet the needs of their customers—wherever they are physically and in their customer journey.

Consumers use an average of four channels when interacting with a brand or organization.[12]

Although the concept of omni-channel may be overhyped, there's no denying that consumers expect an integrated, silo-free customer experience. However, over the past few years, many retailers have attempted to adopt omni-channel strategies and capabilities without enough up-front analysis to support their initiatives. Often, goals were unclear and retailers were unsure how to accurately measure ROI or define success.

Many retailers stated that they had undertaken particular omni-channel initiatives solely because of a perceived customer expectation rather than because of supporting data.

The result was partially executed capabilities, limited customer insight, and legacy systems ill-suited to implement the new approach.

The evolution of retail silos

Retailers have access to so much and so many varieties of transaction and customer data, it has become a huge task to mine and convert it into logical and useful insights. Data is gathered in multiple siloed channels while consumers shop and make purchasing decisions both in-store and online, research and learn about brands online and via social media, and evaluate and test brands in the store.

It's important to understand that much of the challenge retailers currently face is rooted in their history. When most retailers launched their first channel (traditionally brick and mortar), they established a technology silo that was focused solely on that first channel. In their rush to bring subsequent sales channels on board (including catalog, e-commerce, and mobile), they chose to establish additional silos rather than attempting an integration with the first silo.

Although retailers may have set up business silos, the concept of channels is foreign to consumers because 87 percent of them believe that retailers need to create a seamless customer experience for store, online, and mobile transactions.[13]

This multichannel integration is becoming increasingly critical while online shopping numbers continue to surge, with the latest report from MasterCard PULSE indicating that e-commerce shot up 20 percent year over year this holiday season.[14] What it means for those with physical stores is finding better integration between the offline and online experience.[15] And one of the things driving the greatest surge is mobile technology and ubiquitous access to the Internet.

80% of store shoppers check prices online, with one-third accessing the information on their mobile device while inside the actual store. This percentage proves that consumers are also approaching their experience from multiple angles.[16]

In Macy's latest annual report, the company refers to itself as an "omni-channel retail organization operating stores and websites." It also no longer breaks out its sales by channel. While Macy's shift represents an improvement over a not-so-distant past in which online and offline retail sales channels operated more or less independently of each other, retailers are still challenged to deliver a seamless shopping experience for customers. To do that, they must strive to deliver a unified commerce experience which goes a step beyond omni-channel, putting the customer experience first, breaking down the walls between internal channel silos and leveraging a single commerce platform.

Mobile technology and the advent of unified commerce

Part of this breakdown in channels is a result of the increased usage of mobile technology. This year, there will be over 2.6 billion smartphone subscriptions globally, and the growth is predicted to increase to 6.1 billion smartphones by 2020, which means about 70 percent of the world's population will be using smartphones, a measure of how central these devices are becoming.[17] This creates a greater opportunity to develop a more unified commerce strategy, enabling retailers to get a full view of the customer experience and, in turn, use that data to inform all the channels in real time, to support a seamless customer experience.

Last year, the use of mobile devices before or during in-store shopping trips influenced or helped convert approximately $980 billion in sales, representing 28% of the total.[18]

But the drive of mobile usage isn't just coming from customers. More stores are adopting mobile technology to transact with their customers and manage their inventory. While more retailers adopt hand-held solutions, their salesforce is better able to meet the customers where they want to shop.

And the development of retail mobile apps is being retooled and refined. In the past, retail apps were rarely used because they didn't provide business value. But today's leading retailers are finding ways to take advantage of their customer data by combining it with advanced analytics to develop a seamless solution that uses mobile technology to support and track a customer through their entire customer journey. Companies who can create relevant reasons for their customers to download and use their apps can better track—and optimize—those customers throughout their journey by better understanding where they shop, when they shop, and the different cultural and societal trends that affect their journey to create a seamless personalized experience. In exchange, retailers gain a wealth of data about customer behavior, both online and in the store, and can use it in interesting ways to manage and target inventory.

As retailers move from an omni-channel strategy of supporting multiple channels to unified commerce, each channel can learn from the other, to ensure a consistent customer experience. For example, online entities that rely on strategic warehouses are trying to learn from brick-and-mortar entities that use their stores to better target and warehouse inventory and provide quicker delivery to customers, often getting their products to consumers faster than their online counterparts.

Addressing inventory distortion

A unified commerce strategy that addresses a customer's needs is meaningless if the inventory isn't there. And with today's "always on" shopping experience becoming the new norm for retailers, managing inventory is even more challenging. Retailers lose over $818 billion annually, and this statistic is increasing by nearly $50 billion annually worldwide as emerging economies grow beyond the infrastructure to handle retail growth efficiently. On average, consumers are relatively forgiving when it comes to out-of-stocks when shopping, particularly on promotional items. However, the critical issue for consumers arises when they order something online for pickup at the store, receive a confirmation message, go to the store and find the item is not there. Thirty-three percent of respondents suggested they would never shop at that store again, and forty-one percent said it depended on whether there were alternate stores close by. This underscores the critical importance of cross-channel inventory consistency in retaining customers.[19]

A unified commerce strategy can help improve the management of inventory so that the right location has the right amount of stock and a retailer never has too much or too little stock in its store or warehouse. By having a better understanding of their data, retailers can do a more accurate job in demand forecasting, ensuring the right items are stocked in the right quantities, at the right time and place. Inventory distortion is one of the largest issues for many businesses. Having empty shelves, or having to sell large amounts of inventory for overstock, costs retailers billions of dollars each year.

$238.1B	$175.9B
Due to empty shelves	Bought too many

$120B	$80.5B
Couldn't find help	Items spoiling

$74.1B	$54.5B
Price is wrong on the shelf	Vendors sent wrong items

$68.1B	$38.4B
Staff can't find merch supposed to be in stock	Marketing not synched with inventory

Impact of inventory distortion is huge … and growing.[20]

Advanced analytics used in a omni-channel model helps retailers have a full view of all of their inventory so they know where their products are at all times. A unified commerce strategy also provides the tools LoBDMs need to quickly respond to changes and make forecasts to improve inventory management and increase the bottom line.

With the many new devices and channels now available, omni-channel strategies help to firmly place the customer at the center of all marketing activity by bringing together the right channels to enhance the customer experience. And as consumers do more research in multiple channels—in-store, online, and on their mobile device—advanced analytics helps retailers support a more unified commerce customer experience, so they can offer the right product to a consumer where, when, and how the consumer desires. Retailers who adopt advanced analytics will not only keep up with the rapidly changing marketplace, they'll have a competitive advantage.[21]

Key takeaways:

- Breaking down barriers between channels to improve access to customer data and, in turn, providing a seamless customer experience.
- Improving customer targeting by anticipating future actions based on past learnings.
- The drive for using advanced analytics in a unified commerce model to increase the customer experience and improve demand forecasting.

Customers expect efficient, effortless, and personalized service. The ability to offer on-the-spot, tailored solutions can put customers in control, help anticipate their actions, and provide them with a superior experience. To reduce customer churn and to grow engagement, organizations need to provide seamless, personalized experiences that translate into loyalty, goodwill, and future sales.

To use purchase patterns for a deeper understanding of consumers' behaviors and needs, it's critical to be able to predict sales and preferences at a granular level to provide better offers. Part of this insight comes from analyzing shopping patterns and current trends.

···DataSong®

DataSong leverages data across channels to understand buying behavior and improve campaign targeting with customer-level precision. This resulted in reduced marketing costs and improved results with customer-level attribution. In addition, it improved performance by four times, optimizing its client campaign for a 14 percent increase in revenue.
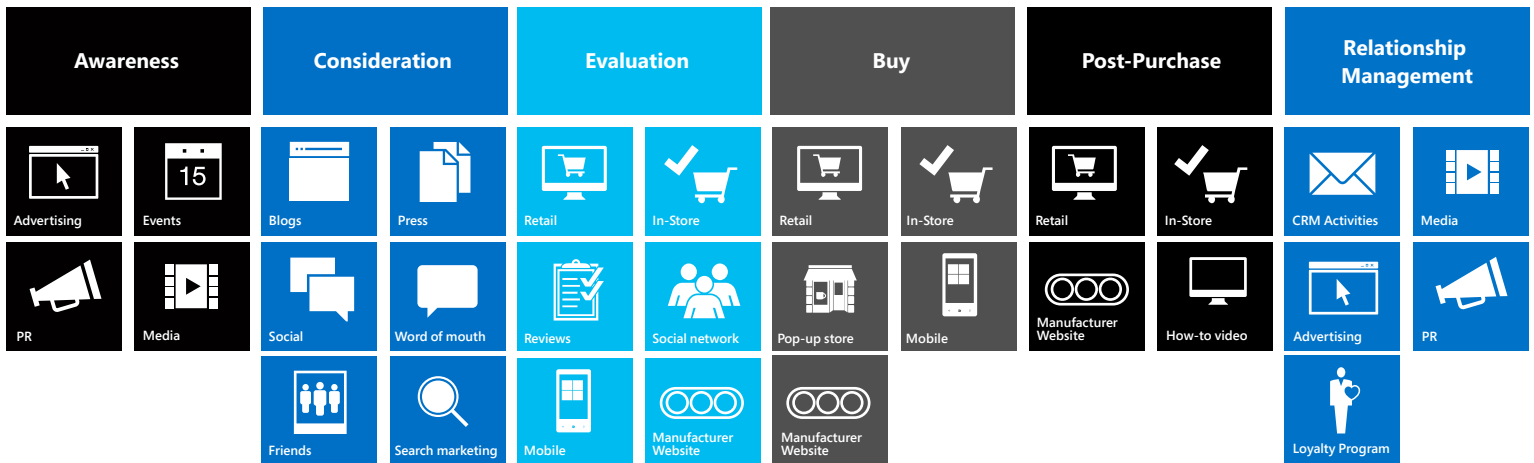
"Once you know what is driving your marketing, you can better direct what treatments you are using for specific people."

– Brandon Mason, Chief Technical Officer

Read more about DataSong

The new customer journey

Today's commerce happens anywhere and anytime. This means customers are making their purchases on their PCs or mobile devices, in traditional brick-and-mortar stores, and from "pop-up" stores and other sources. Today, customers have a range of shopping options: they can shop downtown with friends, online in the middle of the night, or while working out. Cable companies are even placing "Shop Now" buttons within some television shows, letting viewers make an immediate purchase. And nonstop shoppers want to be able to start their customer journey in one channel and purchase in another without any interruption in their customer experience.

Awareness		Consideration		Evaluation		Buy		Post-Purchase		Relationship Management	
Advertising	Events	Blogs	Press	Retail	In-Store	Retail	In-Store	Retail	In-Store	CRM Activities	Media
PR	Media	Social	Word of mouth	Reviews	Social network	Pop-up store	Mobile	Manufacturer Website	How-to video	Advertising	PR
		Friends	Search marketing	Mobile	Manufacturer Website	Manufacturer Website				Loyalty Program	

The new customer shopping journey.

In addition to shopping anywhere and anytime, customers expect personalized promotions and experiences. Retailers are increasing their ability to predict what customers will want according to an analysis of their real-time and historical purchasing data. For example, when customers sign in to JJ Food Service, a large food and beverage provider in the United Kingdom, they get predictive shopping lists for their restaurants or businesses based on both current order information and historical customer data, such as previous orders and calendar data.

Other personalized shopping experiences include dynamic discounts and options to purchase online and pick up in-store or purchase in-store and ship anywhere. Brick-and-mortar stores are also using analytics to offer real-time "recommended for you" suggestions in-store, duplicating the familiar online recommendation experience. Sales associates are armed with customer and product information at their fingertips, enabling them to interact with customers in much the same way "live chat" and call center operators do online. Some online-only retailers are opening retail storefronts, curating exclusive collections of items from their websites, and enabling customers to "touch, feel, and try" the products before they buy.

Retailers can further their ability to deliver personalized experience through situational awareness, which provides retailers with real-time information through the use of QR codes, RFID tags, NFC, beacons, and other sensors that gather helpful data, letting them deliver real-time coupons, product information, and even games and promotions to customers. For example, using the Wi-Fi signals on customers' smartphones, it's possible to track them through the store and send them personalized coupons and product information while they shop. QR codes and RFID tags enable customers to scan items or displays and get more information, or see similar items the retailer might have available in the warehouse. Situational awareness also provides retailers with information about the flow of customers through a store, including where and in what order they browse. This information can provide insights into how to better organize merchandise to drive purchases—for example, by grouping items that customers typically look for during the same store visit.

The key to offering a more immediate, personalized customer experience depends on a combination of diverse data, advanced analytics, and greater access to a wider variety of information. The insights that this combination generates can increase revenue by enabling executives to make decisions about promotions, pricing, inventory, and bundling that are predictive and prescriptive instead of reactive and disconnected.

Understanding how customers shop—and tracking customers' purchasing patterns—is important in ensuring that organizations promote the right product at the best time for the optimal customer experience.

Sales associates can access real-time information about products and customers to help drive sales. With the ability to store customer, inventory, and sales data inexpensively, everyone from executives to individual employees in retail locations can review historical data and also use real-time sales figures and inventory to make fast, well-informed decisions that can enable them to do their jobs better and increase sales.[22]

Today's loyalty programs

Retailers are also starting to see that what once worked to entice consumers, such as loyalty programs, no longer guarantees a sale. Today, an effective rewards program needs good data and analytics tools to function properly and is crucial to giving a retailer key insights into shopper behavior and the ability

to send personalized offers. In addition, retailers are able to directly address issues like cost, building a loyal customer base, and turning loyal customers into effective advocates for their brand. And, in terms of ROI, market capitalization for companies that greatly emphasize loyalty programs has outpaced that of companies that don't.[23]

Companies that have developed effective loyalty programs share some of the same traits:

• Integrating loyalty into the full experience.
• Defining data usage and targeting customer solutions based on data.
• Establishing partnerships with other vendors or suppliers for upselling/cross-selling and "loyalty points."
• Identifying and addressing customer pain points.
• Differentiating between perceived value and real cost.
• Allocating loyalty reinvestment to the most profitable customers.
• Developing personalized offers for online as well as in-store, according to customers' past purchase and browsing behavior.

According to a *Business Insider* article, "Loyalty programs are not only growing, but they are also becoming more tightly integrated with the supporting brand and shopping experience, offering consumers a seamless experience across point of sale, the Internet, phone, and mobile channels. Consumer-facing businesses must think beyond the concept of a me-too, points-based loyalty program. To reap the full benefits of customer loyalty, retailers need to create a differentiated experience that is consistent with their brand."[24]

By taking advantage of the diverse data retailers have access to today, along with advanced analytics tools, retailers can better analyze data with a customer-centric view and develop personalized solutions and loyalty programs that help grow the brand as well as a loyal customer base.

Key takeaways:

- Keeping customers happy and loyal by offering more of what they want, when they want it—or even before they know they want it.
- Using insights from data and technology to create an effective rewards program.

Leveraging analytics tools and models

What if retailers could better anticipate their business needs—and then meet them proactively? And what if stores could better understand customers' shopping habits so that they can arrange stores using a market basket analysis, identifying customer purchasing patterns and then arranging the types of products they purchase together on the store floor, which also increases impulse buying?

Furthermore, what if stores knew what their customers wanted—even before they did—and then could make on-the-spot recommendations? Great merchandising introduces customers to products they might not have seen or heard of before, according to related purchases or trends.

This type of predictive analytics is available with today's advanced analytics, which lets retailers create the products and services that customers are asking for (and may not even know they want) by harnessing all of their data. These tools enable retailers to predict outcomes and create solutions that anticipate the customer's next move, glean insights about high-value customers to maintain their loyalty, and learn which customer actions indicated an engaged experience so the retailer can create a more enticing journey for them.

Model – Test – Optimize

Today's advanced analytics solutions help retailers develop models on an ongoing and iterative basis to test presumptions about potential business outcomes. These tools enable data scientists to easily build a predictive model and transform data into rich visuals that can be easily organized and shared with colleagues. This data can also be exported into spreadsheets so the business leaders can immediately gain insights and take action, in real time. Advanced analytics solutions include prebuilt solutions and wizard-based interfaces, so it's easy to get started, without the need for programming.

In the past, it could take months to develop a model and retrain the data to ensure the analysis was accurate and up to date. But emerging technologies make it easier and faster than ever to build models and retrain the data that can then be turned into a practice of ongoing, iterative optimization of business solutions.

By leveraging analytics tools and models, retailers can boost customer loyalty by creating a personalized shopping experience that customizes offers to needs.
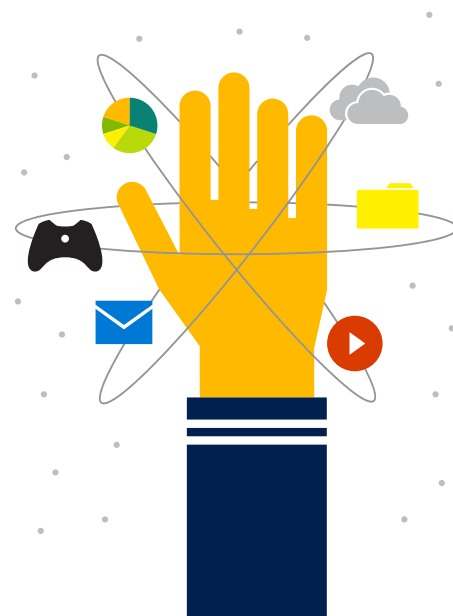
To take advantage of demand forecasting, retailers need to:

Forecast at the right level. When designing the database, it's important to define the right level of details for an organization to understand and act upon.

Review forecasts at aggregate levels. Aggregate level forecast review lets a company review the forecast compared to history and preferable company budgets.

Involve the right people. Make sure the right people with relevant market information add their intelligence to the forecast.

Review forecast by exception. Rather than reviewing the whole forecast, it's more insightful and efficient to identify products that have unusually high or low trending forecasts when compared to history.

Measure and report forecast accuracy.
Use dashboards and graphs to chart trends—from the beginning.

Turning data and intelligence into action

By better understanding demand forecasting, retailers will see higher returns, a decrease in the "showrooming" effect, better in-stock inventory to meet customers' needs, lower overhead and operating costs, and improved ROI.

But it's not enough to do better forecasting. It's also important that retailers are agile with how they use that data. Adopting basic tenets of the agile methodologies when addressing enterprise data and information quality is important. These tenets include a collaborative and cooperative approach, executive sponsorship, developing initiatives through incremental,

small releases and then iterating changes on an ongoing basis, breaking down the work by priority and time-boxing the activity, testing and validating on an ongoing basis, and ensuring transparency and visibility to improve data quality.

In addition to analyzing data, it's important for retailers to monitor social interactions to identify user interests, behavior, and engagement. This combined information can help retailers establish audience segments and identify their needs and expectations from the brand. Some of this includes public data, which is open and publicly available, and private data, which can be purchased from third parties.

By applying predictive and intelligence to demand forecasting, retailers can better manage supply and demand, gain timely insights, and enable more profitable engagements with customers. All while reducing costs.

Ziosk

Ziosk aggregates data from tables to dynamically present content, offers and experiences according to user actions—in real time. They offer personalized service across 1,400 locations, which resulted in a more tailored guest experience and drove up satisfaction, frequency, and advocacy in addition to increasing the average table turnover by seven minutes. It also creates real-time reports to managers for continuous improvement.

"We are using [Azure] to make our UX smarter and truer to its purpose: enhancing the guest experience."

– Kevin Mowry, Chief Software Architect

Read more about Ziosk

Key takeaways:

- Increasing forecast accuracy for higher ROI on inventory investment to ensure inventory meets customers' demand (demand forecasting).
- Addressing changes in demand through quick and agile course corrections.
- Creating more targeted and effective campaigns for sales growth.
- Delivering recommendation engines that drive upsell/cross-sell.
- Creating more targeted and effective campaigns to reduce customer churn and increase sales.

Conclusion: Getting the most from retail data

Advanced analytics lets retailers use affordable and easy-to-use technologies to collect, process, store, and use diverse data on an unprecedented scale. These technologies continuously monitor fast-moving structured and unstructured data, enabling retailers to develop a full range of data preparation, analysis, and distribution processes that are driven by the increasingly digitized interactions among people, organizations, and physical things.

With this abundance of data, it's not only about collecting information but it's about asking the right questions, using new data and analytics, and delivering insights at the right time. Today's advanced analytics technologies provide that opportunity to combine existing and new technologies, data sources, and analytics to embrace change and drive innovation.

But even as data and analytics are fundamentally transforming the business, many organizations are struggling with how to articulate, calculate, and maximize the value of their investments. With a complete advanced analytics solution that securely spans on-premises computers and servers, cloud-based storage and tools, mobile device applications, and customer engagement, retail businesses can solve the business problems of today while they anticipate and prepare for the innovations of tomorrow.

Retailers need to understand their customers, be adaptable, and implement connected interactions. They need to know how, when, and where their business works best using advanced analytics that forecast demand and optimize availability. Having the right merchandise, at the right place, at the right time is good for retail—and great for customers. And by applying predictive and perceptual intelligence to demand forecasting, retailers can better manage supply and demand, gain timely insights, and enable more profitable engagements with customers—all while reducing costs.

They key to offering a more immediate, personalized customer experience depends on a combination of diverse data, advanced analytics, and greater access to a wider variety of information. The insights that this combination generates can increase revenue by enabling executives to make decisions about promotions, pricing, inventory, and bundling that are predictive and prescriptive instead of reactive and disconnected.

By using the latest advanced analytics solutions, retailers can keep customers happy, loyal, and profitable by offering more of what they want, when they want it—or even before they know they want it. It also enables improved customer targeting by anticipating future actions using past learnings and an increase in graduation rates using predictive analytics to create personalized experiences. In addition, by harnessing all of their data, retailers can identify and acquire the most valuable customers for their business and create more targeted and effective campaigns with personalization that reduces customer churn and increases sales.

Coca-Cola partnered with an Internet meme to create a highly scalable, interactive experience where consumers engage with the Coca-Cola brand using perceptual intelligence. This resulted in 100 percent detection of the Coca-Cola logo, avoiding potential competitor disruption. In addition, the platform processes at least 2,000 images per second, with zero downtime.

"In this tool we saw an innovative way to capitalize on one of the most iconic brand moments."

– Simon Cowart, Global Social Media Strategist

Read more about Coca-Cola

1. Mearian, Lucas. "World's data will grow by 50X in next decade," Computerworld. June 28, 2011

2. Retail Insights Harnessing the Power of Data. Microsoft. 2015. http://download.microsoft.com/download/5/E/3/5E3D8381-DBCE-409F 8BB0-230F8FEA7610/Cortana_Analytics_in_Retail_white_paper.pdf

3. Columbus, Louis. "Roundup Of Cloud Computing Forecasts And Market Estimates Q3 Update, 2015." Forbes, September, 2015.

4. IDC and Microsoft Corporation, The Data Dividend

5. Statista: http://www.statista.com/statistics/264810 number-of-monthly-active-facebook-users-worldwide/

6. "Big data: The next frontier for innovation, competition, and productivity." McKinsey, May 2011.

7. Lunden, Ingrid. "6.1B Smartphone Users Globally By 2020, Over Basic Fixed Phone Subscriptions." Techcrunch.com. June 2, 2015. http://techcrunch.com/2015/06/02/6-1b-smartphone-users-globally-by-2020-overtaking-asic-fixed-phone-subscriptions/#.shsu13v:RPIH

8. IDC and Microsoft Corporation, The Data Dividend.

9. IDC and Microsoft Corporation, The Data Dividend

10. "Big Data, for better or worse: 90% of world's data generated over last two years." ScienceDaily. May 22, 2013.

11. "6 powerful facts about Big Data." ETCio.com. July 18, 2014.

12. Parature 2015

13. Sheldon, Jerry (analyst). "Unified Commerce: Modern Retail is Coming Together." January 2016. https://www.ihlservices.com/wp-contentuploads/2016/01/2016-Unified Commerce-Retail-Is-Coming-Together.pdf

14. Novellino, Teresa. "Holiday spending up nearly 8 percent MasterCard Pulse finds." New York Business Journal. December 28, 2015. http://www.bizjournals.com/newyork/news/2015/12/28/holiday-spend-up 8-percentmastercard-pulse-finds.html

15. Novellino, Teresa. "5 trends that shook up retail in 2015." New York Business Journal. December 29, 2015. http://www.bizjournals.com/newyorknews/2015/12/29/5-trends-that-shook-up-retail-in-2015.html

16. Regalado, Antonio. "It's All E-Commerce Now." Technology Review, November 4, 2013. http://www.technologyreview.com/news/520786/its-all-e-commerce-now/

17. Lunden, Ingrid. "6.1B Smartphone Users Globally By 2020, Over Basic Fixed Phone Subscriptions." Techcrunch.com. June 2, 2015. http://techcrunch.com/2015/06/02/6-1b-smartphone-users-globally-by-2020-overtaking-asic-fixed-phone-subscriptions/#.shsu13v:RPIH

18. "Digital Device Use Influences $1.7 Trillion in In-Store Retail Sales." http://www.emarketer.com/Article/Digital-Device-Use-Influences-17 Trillion-In-Store-Retail-Sales/1012599

19. "We Lost Australia! Retail's $1.1 Trillion Inventory Distortion Problem." http://www.ihlservices.com/product/inventorydistortion/

20. "Unified Commerce – Modern Retail's Coming Together." December, 2015 http://www.ihlservices.com/news/analyst-corner/2015/12/replay-unified commerce-modern-retails-coming-together/

21. "Machine learning helps food service supplier predict what customers want before they order." Microsoft IoT. January 28, 2015. http://blogs.microsoft.com/iot/2015/01/08/machine-learning-helps-food service-supplier-predict-what-customers-want-before-they-order/

22. Retail Insights Harnessing the Power of Data. Microsoft. 2015. http://download.microsoft.com/download/5/E/3/5E3D8381-DBCE-409F 8BB0-230F8FEA7610/Cortana_Analytics_in_Retail_white_paper.pdf

23. Retail Insights Harnessing the Power of Data. Microsoft. 2015. http://download.microsoft.com/download/5/E/3/5E3D8381-DBCE-409F 8BB0-230F8FEA7610/Cortana_Analytics_in_Retail_white_paper.pdf

24. Nideau, Marie-Claude, and Marc Singer. "The Secret To Creating Loyalty Programs That Actually Work." Business Insider. March 21, 2014. http://www.businessinsider.com/effective-loyalty-programs-2014-3

Microsoft