NRF® NATIONAL **RETAIL**® FEDERATION®

5 Myths About the Weather & Its Impact on Retail

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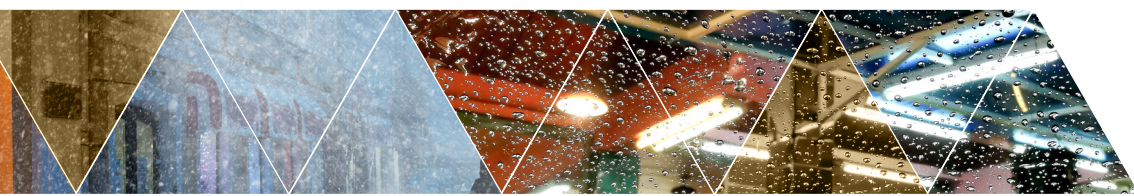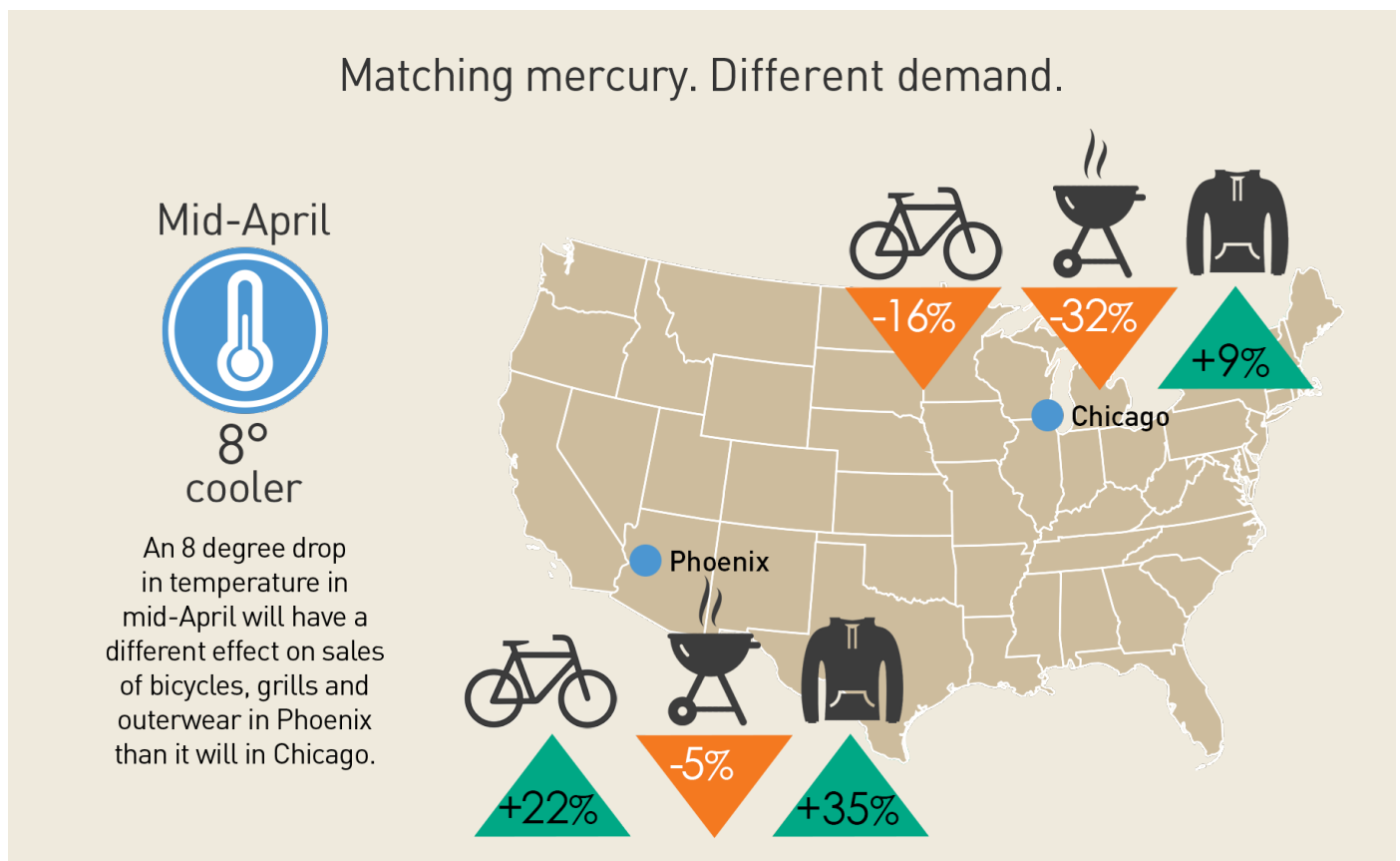
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ABOUT THE RESEARCH

5 Myths About the Weather & Its Impact on Retail was developed by NRF in partnership with Planalytics, a business weather intelligence firm, leveraging Planalytics data on more than 10 trillion sales transactions and historical analysis of the impact of weather on customer demand.

INTRODUCTION

What does 53°F and light rain mean for sales? The answer is different in Chicago than in Charlotte; it varies if it is a day in March or October. The answer will also differ depending on the retailer or sector — Walmart versus Costco, True Value versus Lowe's, mall-based versus online. Weather's influence on consumers is complex and nuanced; temperature or precipitation data is easily misinterpreted and misused.

As a result, many businesses believe planning for weather's impact on sales is an exercise in futility. After all, weather is a notoriously fickle and uncontrollable factor, and no forecaster can reliably predict the temperature beyond the next few weeks. However, ignoring the effect of something with such a profound impact on consumers' day-to-day lives can lead to severe miscalculations in everything from sales and inventory to markdowns and staffing levels. To help retailers understand how to anticipate and plan around the weather, NRF and Planalytics have identified five common weather myths that affect retailers and how to effectively incorporate weather considerations to make better decisions.

Matching mercury. Different demand.

Mid-April

8° cooler

An 8 degree drop in temperature in mid-April will have a different effect on sales of bicycles, grills and outerwear in Phoenix than it will in Chicago.

Chicago: bicycle -16%, grill -32%, outerwear +9%

Phoenix: bicycle +22%, grill -5%, outerwear +35%

5 Myths About the Weather & Its Impact on Retail

MYTH 1: YOU CAN'T PLAN FOR THE WEATHER

Because specific weather events — heat waves, snow storms, cold snaps, etc. — cannot be precisely forecasted in advance, it can be challenging for businesses to react to near-term opportunities or risks. This is particularly true for retail, where decisions around demand planning, supply chain operations, labor scheduling, marketing and more are determined weeks, if not months, in advance. However, viewing the weather as "a force that can't be reckoned with" can lead to significant miscalculations in sales or inventory forecasting. Instead, retailers should proactively account for weather's impact in three areas of business:

PLANNING: The weather — and its impact on business — only repeats from one year to the next about 15 percent of the time, though it's common for plans to be heavily based on or influenced by the prior year. This leads many companies to unwittingly embed the previous year's weather variations and sales impacts into their business forecasts. Retailers can remove much of this built-in error by "deweatherizing" their sales history. This process uses weather-driven demand calculations to systematically remove weather-based sales distortions and provide a cleansed, normalized baseline for planning. Weather-driven demand is the quantification of

Recognize that weather's impacts are embedded in last year's sales

REMOVE WEATHER VOLATILITY

IMPROVE PLAN ACCURACY

WEEK 21   WEEK 22   WEEK 23   WEEK 24

● LY Sales   ● Deweatherized Plan

the impact of weather — and weather alone — on demand for a product or service. Businesses that remove the historical impacts of weather can drive a 20-80 basis point annual improvement in profitability just in inventory management. This is accomplished by increasing total enterprise forecast accuracy between 2 and 6 percent on average, and up to 50 percent for specific product categories.
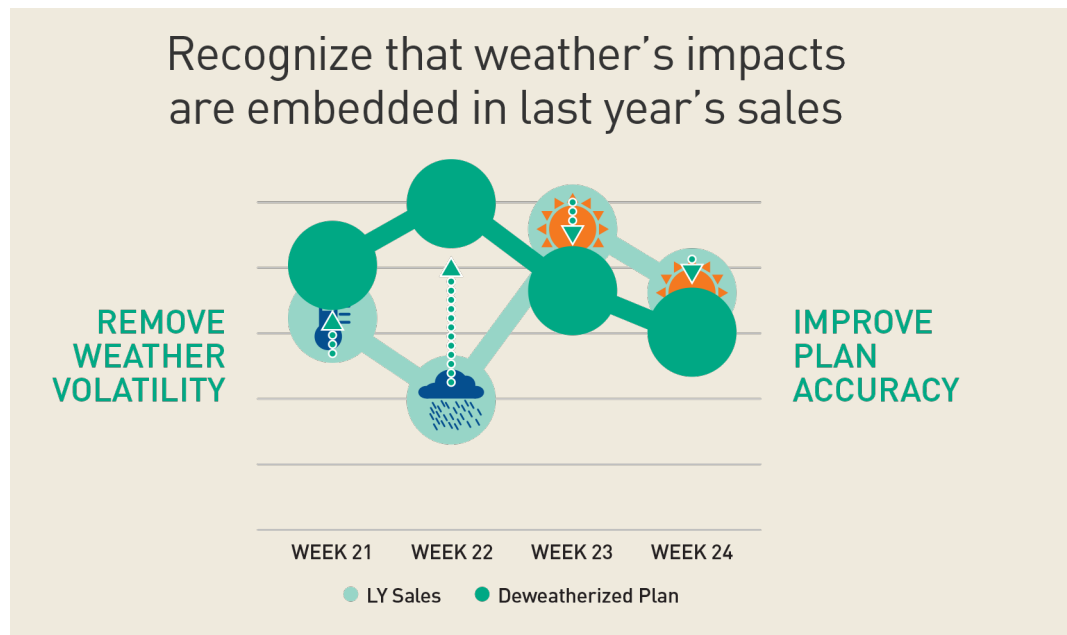
LOCALIZED STRATEGIES: There is a danger of creating false answers through an oversimplified approach. Without analyzing weather and sales information at both the market and the weekly level, it is easy to get the weather drivers and volume impacts wrong. For example, an assumption that every one-degree temperature increase delivers a 7,500-unit sales increase will be inaccurate when looking at different locations, distinct times of the year and various merchandise categories.

STAFFING: Retailers are not only managing the cost of carrying inventory; they are also charged with staffing stores appropriately to manage the influx of shoppers. Weather has a direct influence on store traffic. By utilizing weather-driven demand calculations, businesses can prepare for and quickly adjust store staffing to better accommodate varying traffic levels, maximizing the efficiency of individual stores and better managing to budgets.

MYTH 2: IT ALL EVENS OUT IN THE END!

"Sometimes the weather hurts me, sometimes the weather helps me." While this adage often rings true, it does not mean that positive and negative weather simply even out over the course of a selling season, fiscal quarter or even a year. The timing, location, strength and duration of favorable or unfavorable weather makes a big difference.

Consider the following examples:

PROFITABILITY: A negative 25-percent weather-driven demand impact on winter coats in November is not offset by a 25-percent weather-based demand boost in January. Further, there is a lot more profit in a November sale compared with the end of the season when merchandise is marked down heavily for clearance.

LOST SALES: When a winter storm keeps people at home, some sales are never made up. Yes, the weekly grocery run is often made a day or two later, but if someone doesn't stop for a cup of coffee on the way to work because a snowstorm keeps them at home, they don't buy two coffees the next morning to "make up for it." The same is true for other categories or for impulse buys.

TIMING: Warmer-than-normal temperatures in the early spring can be great for do-it-yourself retailers as consumers head to stores for live plants and other lawn and garden items. However, if these retailers have a less favorable start to the season, improved weather in May or June will not have the same effect. For many consumers, the optimal "window of time" has passed for certain outdoor projects (or other seasonal items like apparel or décor). DIY projects will be downsized or skipped altogether as the calendar shifts the consumer's attention to other priorities and activities.

Unlike Newton's third law of motion, there is not really "an equal and opposite reaction" when it comes to weather and its business ramifications.

Weather-adjusted sales

+3.2%

+1.7%

-2.1%

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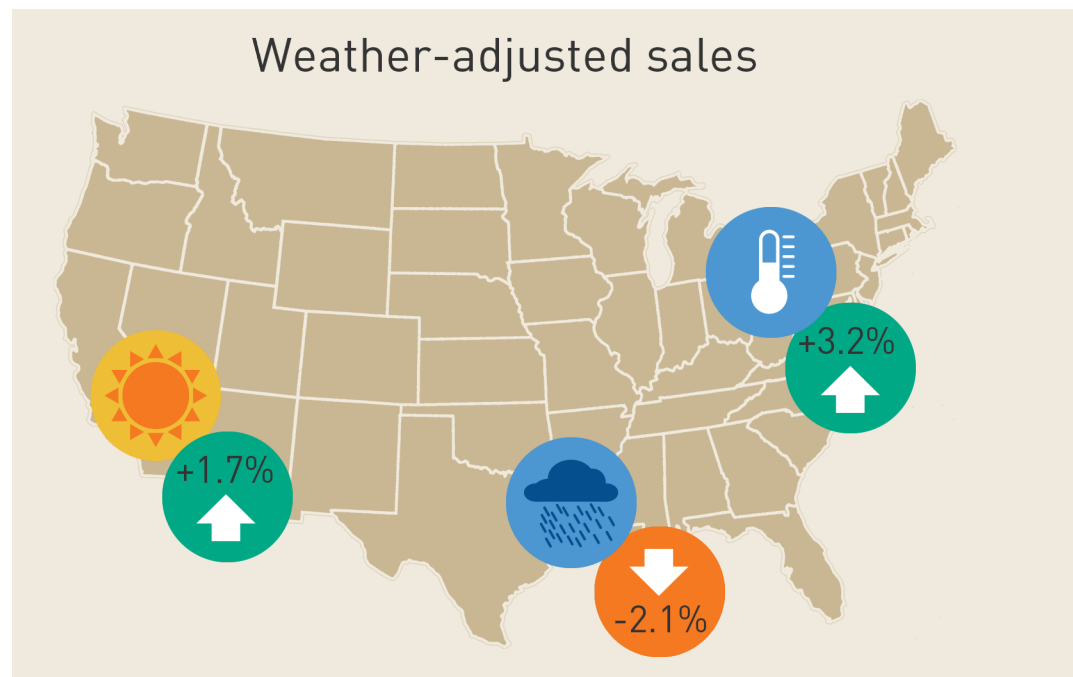
MYTH 3: CONSUMERS WILL SHOP DURING THE HOLIDAYS, REGARDLESS OF THE WEATHER

Just because sales peak for many retailers during the November-December holiday sales period doesn't mean weather's business impacts disappear. During the holidays, weather not only influences if a customer goes into a store, it also influences the items they place in their basket. For example, 18 percent of boot sales are influenced solely by the weather in December, while specialty apparel stores see sales fluctuate up to 4 percent on average, depending on weather conditions and location. Even a fluctuation of a few percentage points in sales is significant for any retailer during the highest volume months of the year.

When and where those weather-driven demand changes occur directly affects profitability. Slower sales earlier in the season often lead to earlier and/or steeper markdowns. Conversely, there is a much better likelihood of maintaining profits if the season starts strongly and inventory moves briskly.

Even hardware stores and home centers, which have their "holiday" season in the spring, feel the impact. In fact, December is the third most weather-sensitive month of the year (on a percent of sales basis) for this sector. Winter conditions bring shoppers in for ice melt and snow removal products; warmer and drier weather can extend windows for DIY projects and boost demand for outdoor lighting and holiday decorations.
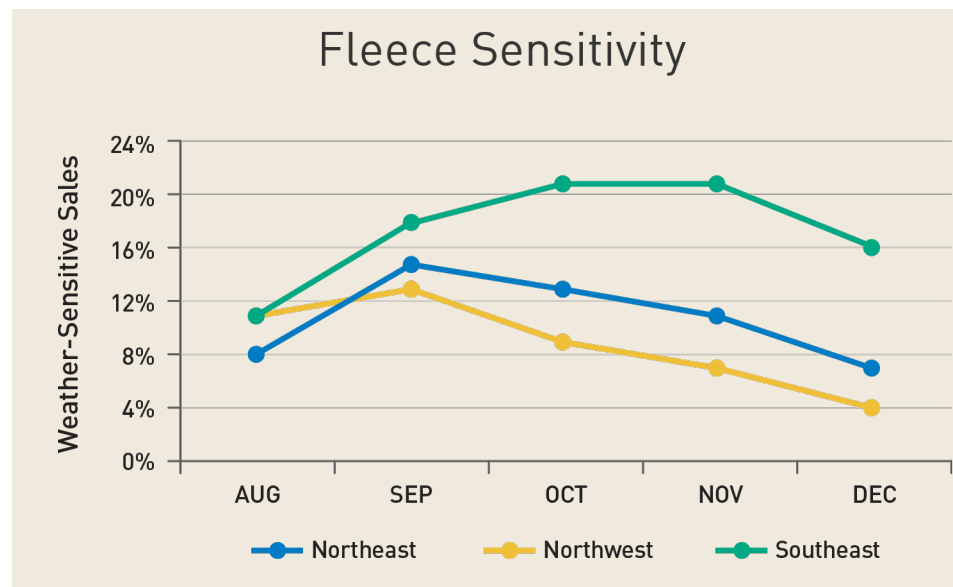
MYTH 4: MY PRODUCTS AREN'T SEASONAL, SO THE WEATHER DOESN'T AFFECT ME

Many categories — from lawn fertilizer to knitwear to sun care — are obviously impacted by the weather, but it can be surprising to learn how much non-seasonal products are also affected. Over 90 percent of a business's annual weather-driven sales come from day-to-day changes in temperature and precipitation that influence consumer shopping patterns and behaviors.

Weather-related traffic to a store or retail site can drive sales of non-seasonal items

Sales

$$$

Coats

Socks

Coats   Socks

$

Weather-Driven Retail Traffic
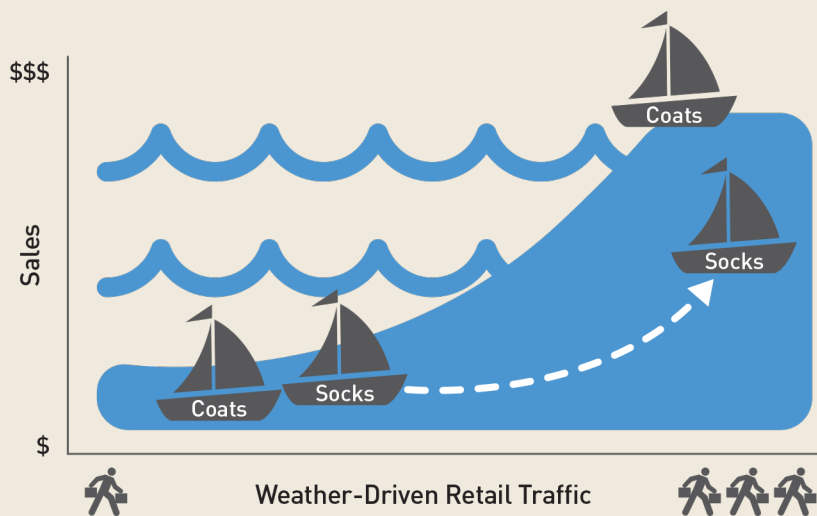
When analytics are used to isolate how much of a product's sales volatility is weather-related, some revealing insights emerge. Jewelry is three times more weather-sensitive in January than during the rest of the year. Why might this be? In January, consumers are often looking to redeem gift cards and take advantage of post-holiday sales. Favorable weather in January (typically warmer and drier than normal) can drive store traffic and lift jewelry sales in advance of Valentine's Day. Of course, when the inverse occurs and the weather is cold and snowy, jewelry sales can be limited.

Similarly, coffee — a daily habit for many — sees sales swings of 5 percent on average due to the weather. These swings vary based on the time of year and market; major markets in the Northeast can experience strong coffee demand of 10 percent above normal levels when cool weather extends into spring months.

When it comes to store or site traffic, "a rising tide lifts all boats." If favorable weather conditions bring customers into stores for a seasonal item such as charcoal, there is a good chance they may pick up additional items on their shopping trip (ketchup, shampoo, etc.). On the other hand, if poor weather keeps customers away, a mass merchant is going to see sales fall across the board, including in non-seasonal departments like home goods, toys and electronics.

Finally, deweatherizing sales histories to correct weather-based sales distortions drives forecast accuracy improvements. It is common for businesses to realize a 50-200 basis point accuracy improvement on non-seasonal, high volume, year-round categories. This results in measurable financial benefits by increasing in-stock levels and reducing inventory carrying costs.

MYTH 5: I'M AN ONLINE RETAILER — THE WEATHER DOESN'T IMPACT ME

Weather can impact website traffic, just as it does bricks-and-mortar store traffic. Extreme events, as well as simple day-to-day changes in weather, can drive consumers to stay indoors and drive spikes in website traffic. Conversely, a beautiful sunny day may bring more consumers into stores and away from their online shopping carts.

By leveraging weather analytics, businesses can understand the specific times and locations to deliver a product or brand-specific message to a consumer at the exact time they are realizing the need to make a purchase. For example, an online retailer can respond to uncommonly warm weather in a specific market by targeting customers with items like shorts and tee shirts before they would be able to find those items in stores. These same analytics can be used in paid-search campaigns to lead new customers to a retailer's site at a time when weather is driving demand.

Generally accepted web analytics (site hits, conversion rates, costs per conversion, etc.) can help validate the success of these campaigns.

Online clothing retailer took advantage of warm weather to promote certain products. As a result, featured product sales increased 267%.

Warmth in East	Targeted Messaging	Drove Sales

267%
INCREASE IN
DEMAND ON
FEATURED ITEMS
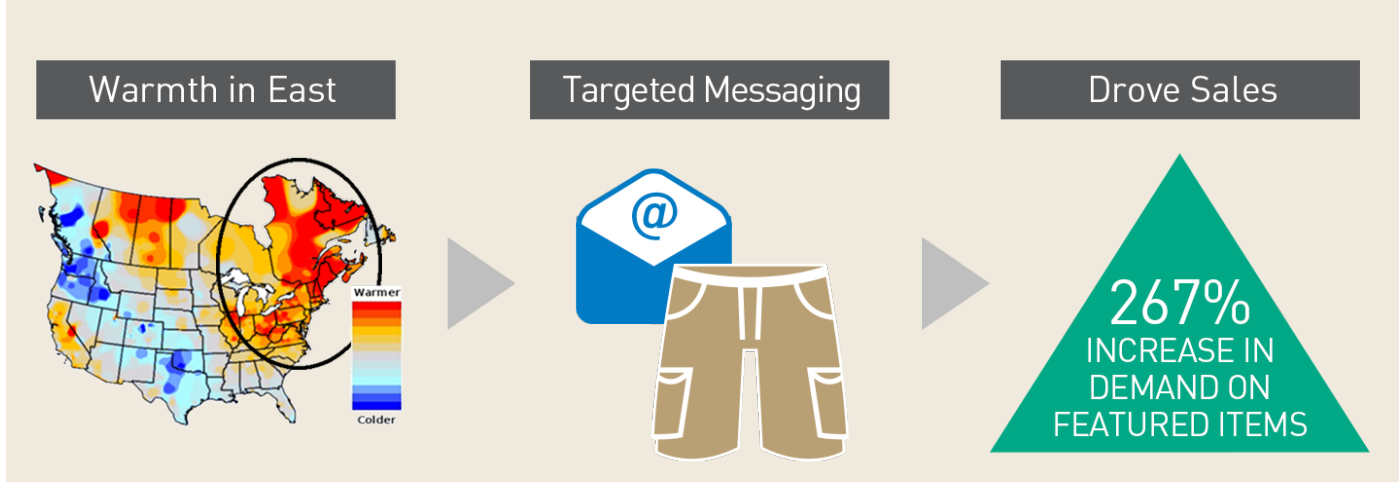
TAKING THE NEXT STEPS

STEP 1: MEASURE FIRST
The first step to managing the impact of weather is to measure it. A detailed analysis of historical demand, transactions and other relevant business metrics correlated to weather helps retailers understand how much weather typically influences demand across time and geographies.

STEP 2: IN-SEASON MANAGEMENT AND REPORTING
Once retailers measure the impact of weather, then they will have the opportunity to realize business benefits by monitoring and managing weather's impact throughout the season. Retailers often share this information with key suppliers to understand performance and collaborate on future actions such as replenishment, promotions and end-of-season inventory management. Near-term insights and analytics that incorporate daily weather forecasts are available to inform various in-season decisions.

Retailers can identify weather-influenced demand spikes and position inventory or other resources (e.g. marketing, staffing, etc.) to take advantage of sales opportunities and maintain healthy in-stock levels.

STEP 3: PRESEASON PLANNING
By removing the historical impacts of weather, retailers will build more accurate financial plans and demand forecasts. Removing weather's volatility from historical sales creates a weather-neutral baseline. As a result, instead of "chasing" last year's weather conditions, retailers will gain better visibility into the shape of their season to more effectively detect when, where and how much demand will shift. These statistically driven projections will enable their business to reduce forecast error rates.

CONCLUSION

The weather influences the decisions people make every day, from the clothes they put on to what they eat or drink, from leisure activities pursued to maintenance tasks performed. These daily decisions alter the overall flow of commerce and influence performance across the retail enterprise. The conditions outside will often determine if consumers are heading inside to stores or visiting websites, and how they shift their spending among certain products, services or entertainment options.

Analyses of historical category sales has proven that, after identifying the seasonal and trend elements in a sales curve, weather often comes up as one of the top two variables of the remaining residual drivers (price is the other). Most retailers consistently evaluate and address the influence of pricing in the business. Addressing the impact of weather should receive the same priority.

ABOUT NRF

The **National Retail Federation** is the world's largest retail trade association, representing discount and department stores, home goods and specialty stores, Main Street merchants, grocers, wholesalers, chain restaurants and internet retailers from more than 45 countries.

ABOUT PLANALYTICS

Planalytics Inc. is the global leader in Business Weather Intelligence. Through advanced weather analysis technologies, planning and optimization solutions and industry-specific expertise, Planalytics helps companies assess and measure weather-driven impacts and effectively manage the never-ending variability of weather. Leading retailers, food and beverage companies and consumer goods/services companies use Planalytics to "weatherize their business," taking advantage of opportunities to increase revenue while deploying strategies to reduce costs and protect margins during periods of risk.

Planalytics has analyzed over 10 trillion sales transactions across thousands of merchandise categories. Planalytics leverages this deep experience to provide companies with Weather-Driven Demand (WDD) indices that quantify how much demand increases or decreases due to changes in the weather. Planalytics' modeling process isolates weather's impact on sales from other factors and provides a business-friendly number (e.g. percentage change vs. last year or normal, etc.) companies can utilize and action.

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