



White Paper

The Weather Element

*A Primer for Retailers to Understand How to Incorporate
Business Weather Intelligence® in Common Business Practices*

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Table of Contents

The Weather Element	3
Why Should Retailers Incorporate Weather In Business Management Activities	4
How Can Retailers Incorporate Business Weather Intelligence in Management Activities?	5
<i>Pre-season</i>	6
<i>In-Season</i>	10
<i>Post-Season</i>	12
<i>Activities Throughout The Product Lifecycle</i>	12
Next Steps: How To Get Started?.....	13
Best Practices: What Are The Leaders Doing?.....	13
About Planalytics.....	15

The Weather Element

A Primer for Retailers to Understand How to Incorporate Business Weather Intelligence in Common Business Practices

On a regular basis, every company evaluates and reports on their performance, either internally within their organization, or externally to the investment community. Weather is often cited as having an impact on these results. Most companies would agree that weather can have a direct and indirect impact on consumer behavior. Weather can help shape what consumers buy, when they purchase it, where they make their purchases, and how much to pay for a product or service. For each of the situations above, there is an opportunity to understand and define the magnitude of impact that weather has on a retailer's business. Equally, if not more important, is that retailers can utilize information about the weather in a proactive fashion to optimize common business practices during pre-season, in-season, and post-season timeframes. This information is herein called "Business Weather Intelligence".

Today, it is common for many retailers to acknowledge that they are impacted by weather; however, this is often utilized as a means of post-season evaluation and analysis. Employing Business Weather Intelligence *in a proactive fashion* can provide retailers with a sustainable competitive advantage throughout the year.

Why Should Retailers Incorporate Weather In Business Management Activities?

It is a common practice for retailers to use results from a prior season as the basis to begin the planning process for the same season next year. If you are planning next year based solely on last year, you are making a number of assumptions. First and foremost is that the weather will be the same year over year. Based on historical performance, weather is apt to repeat itself less than 25% of the time in any one particular time/location combination year over year. Understanding that year over year weather is often not the same; the impacts to a retail business can be significant. For example, the start of key selling season is likely to vary. In addition, demand for products at each location is likely to differ week over week when compared against last year. Given this, a company which *proactively* uses forecasted weather compared to a company which does nothing will be better positioned to reap the benefits of weather changes, regardless of the specific decisions made.

A core metric of Business Weather Intelligence is *Weather Driven Demand (WDD)*. WDD is represented as a percentage change of year over year weather related to consumer demand of a specific product. WDD is 'digitized weather' in that it represents, in numeric fashion, the impact that weather has on a specific product at a location/timeframe combination.

On a monthly basis, weather has been shown to be more volatile than the economy, gasoline prices, interest rates and unemployment. In addition, weather helps drive consumer behavior patterns based on a variety of subtleties.

- *Weather can improve traffic in stores but not necessarily sales of a specific product.*
Consider a cold, wet weekend in March in New England. A mall-based apparel retailer who is hoping to sell spring seasonal merchandise such as shorts may experience an upside in traffic due to the poor weather. This increase in traffic may not directly correlate to an increase in sales of spring merchandise if the conditions remain cold.
- *The degree of positive/negative impact of weather can largely depend where the consumer lives.*
Consider a temperature high of 60°F on a March afternoon. In New York City, this temperature is likely to spur sales of spring seasonal merchandise such as shorts; however, in more tropical climates such as Miami, this same temperature is likely to drive sales of non-seasonal products such as light jackets.
- *When weather occurs is important to consumers.*
Favorable weather early in the season can stimulate buying, while favorable weather late in the season may postpone buying of certain products. Favorable weather coinciding with a Holiday/Event can have an additional impact on demand for your products.

How Can Retailers Incorporate Business Weather Intelligence in Management Activities?

The utilization of Business Weather Intelligence needs to be carefully considered and well-defined from a strategic perspective. This planning and foresight will drive the definition of the tactical steps required to apply and act on information. Business Weather Intelligence should be viewed as information which, when applied properly, can optimize the existing decisions, processes, and technologies that a retailer already has in place. This primer will consider the application of Business Weather Intelligence in the following context:

Timing

When Should I Apply Business Weather Intelligence?

We evaluate three common timeframes associated with the application of Business Weather Intelligence: Pre-Season, In-Season, and Post-Season.

Business Area

Which functional area(s) of the business should have access to Business Weather Intelligence?

This primer defines the functional areas that commonly are cited as the primary beneficiaries of Business Weather Intelligence.

Business Process

How do the functional areas defined above incorporate Business Weather Intelligence into their common business practices?

This primer defines the traditional activities and associated business processes which utilize Business Weather Intelligence.

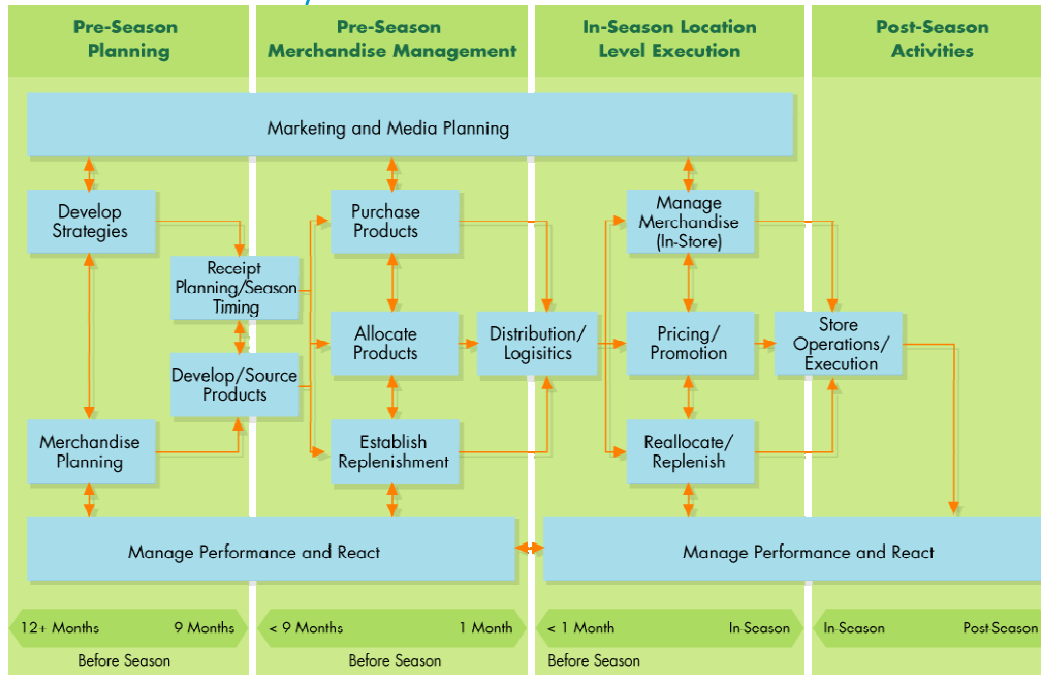
Results

What are some key performance indicators that are utilized to validate the success of actions taken?

This primer will cite common practices used to help confirm and measure results of the application of Business Weather Intelligence.

The application of Business Weather Intelligence can be accomplished for both retail and CPG/manufacturing segment, any number of products, locations, and store types. To illustrate the application of Business Weather Intelligence, this primer is going to use the example of a fictional department store retailer, herein called 'Nationals', which operates stores throughout the United States and has a sustained web-based channel of operations. 'Nationals' utilize Business Weather Intelligence throughout the business; however, we will focus on understanding how they use it to maximize the seasonal results associated with the ladies sweaters category during a fall selling season. The graphic on the following page depicts a traditional product lifecycle associated with a retail organization.

Traditional Product Lifecycle



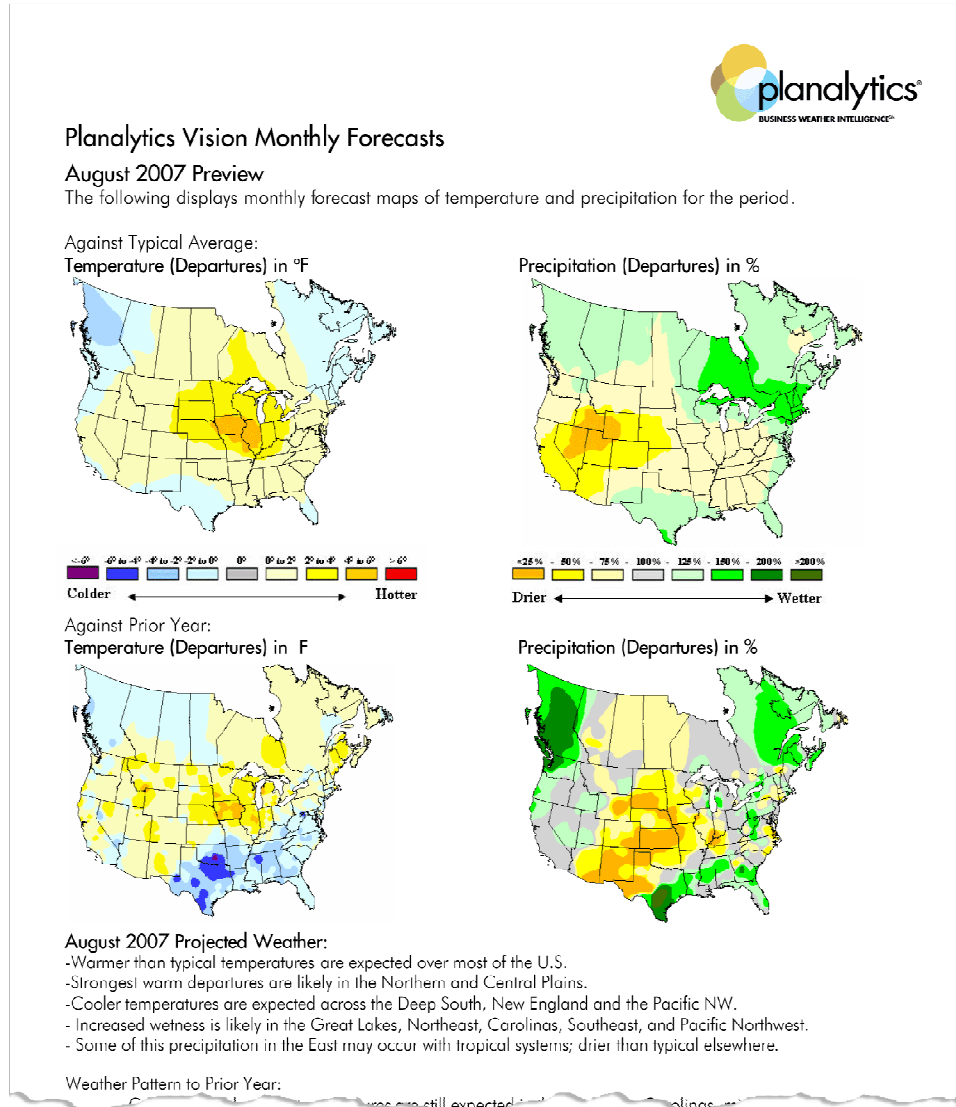
Pre-season

Pre-season is defined as the timeframe when the selling season for a particular product has not started, however, there are a number of activities taking place to help retailers prepare to execute.

Strategic and Financial Planning

'Nationals' is initiating its internal planning process for the Fall, which they do approximately eleven (11) months prior to the start of the selling season. Senior level company officers as well as planners and merchandise managers help define the high level merchandise strategies related to ladies sweaters. As part of the planning process, Business Weather Intelligence is applied. The information provided to 'Nationals' indicates the regions of the country (and related timeframes) where the weather will be warmer than last fall, colder than last fall, wetter than last fall, and drier than last fall. The information is displayed by month. 'Nationals' uses this information to adjust and validate existing decisions, including the following:

- Validate the overall enterprise and financial plans associated with the ladies sweaters category.
- Validate the high level merchandise plan for ladies sweaters.
- Adjust the overall weight/composition of some products within the ladies sweater category to account for weather variations.



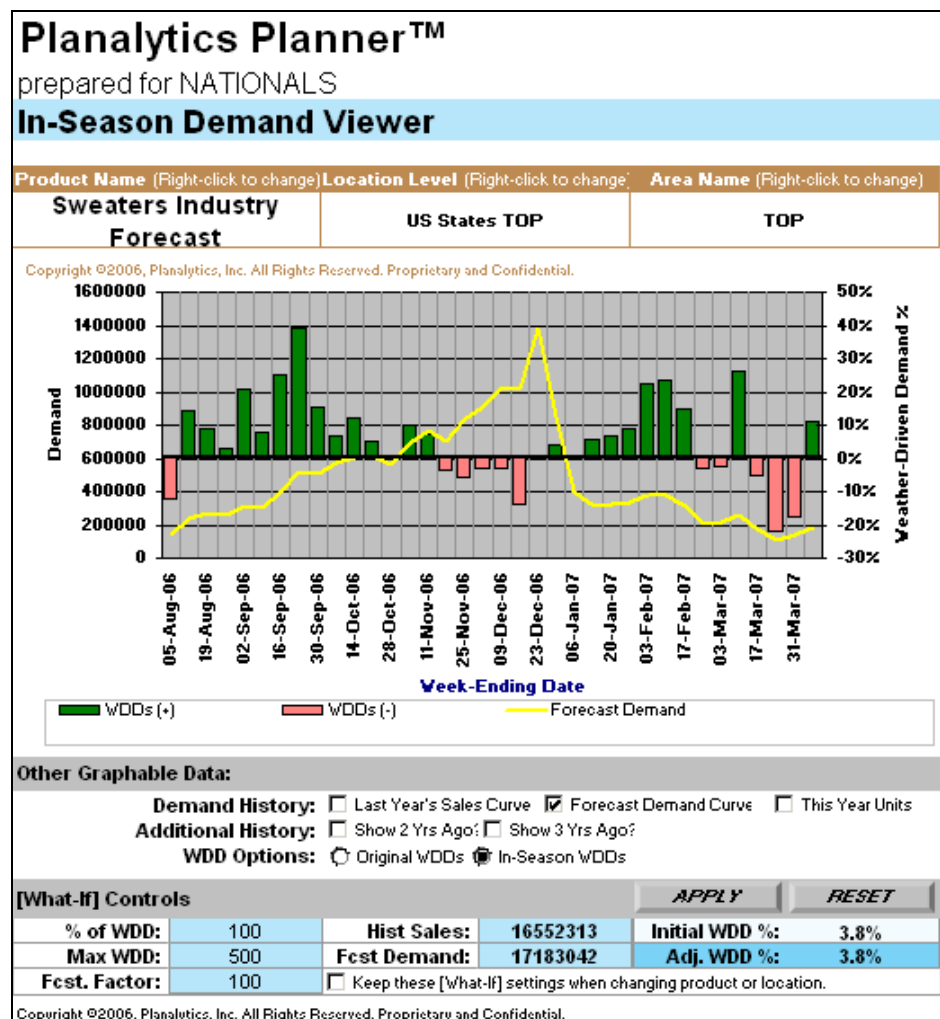
Merchandise Planning

Once the strategies and financial plans have been finalized, individual buyers and planners need to determine the optimal product mix necessary to realize the overall business goals and objectives associated with ladies sweaters. Traditional merchandise planning processes (top-down and/or bottoms up) includes the overall definition of lines (subcategories), products (styles), and individual items (SKU's) necessary to meet the plan. To complete and finalize the overall merchandise plan, 'Nationals' utilizes WDD information to help validate and/or make the following adjustments to ladies sweaters at a product/time/location combination:

- Total merchandise commitment.
- Adjust and alter the high level Merchandise Plan by week/month.
- Markdown plans.

Purchasing Products

After the merchandise plans have been defined and approved, the buyers go to market to purchase the ladies sweaters that map to the defined plans. 'Nationals' has an understanding of high level weather trends across the fall season, so when they are placing orders with suppliers (including private label manufacturers), this information is used to help drive initial delivery dates of products. It is also used to shift quantities of products to focus on opportunities. If the northeast is planned for a significantly warmer fall compared to last year, some quantities of heavyweight wool sweaters may shift to more light weight cotton sweaters. Adjustments to purchasing plans can impact sourcing decisions. Note that CPG companies can utilize the same information to help validate the need for a retailer to purchase specific quantities of product.



Allocation/Distribution

After the purchasing phase of the product lifecycle has been completed, it is the responsibility of allocators/distributors to help determine the right amount of products to send to each location (DC, region, store, etc.). This activity can take place at multiple times during the season based on the quantity of shipments being received in

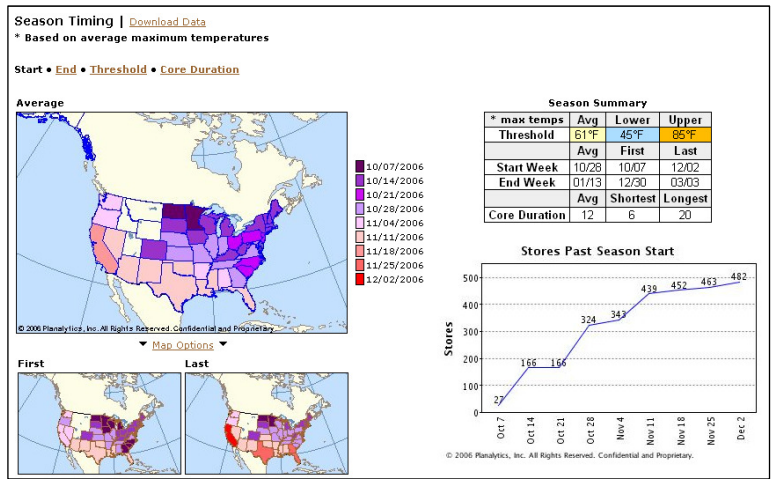
from each supplier. Equally as important, the allocators and distributors are tasked with determining the 'right time' to have the products delivered. The timing of these decisions can, and often does, vary for each retailer. It is common practice for retailers to source products from overseas, in many cases via boat. Given this fact, product allocators have a defined timeframe to pre-allocate merchandise before the goods arrive on land. 'Nationals' allocates sweaters once a month and can ship to stores five days a week. These shipments include new products as well as replenished goods. From an allocation perspective, 'Nationals' uses Business Weather Intelligence to help optimize the right amount to ship to each region and store. For our example, 'Nationals' knows that the weather is going to be significantly positive in relation to the sale of ladies sweaters in the Pacific Northwest in September and October, but not necessarily in November and December. Product allocators will 'weatherize' allocation/distribution plans and send additional pre-packs of the top 3 anticipated best selling styles to all stores in the Pacific Northwest Region during both September and October. Because weather in the Midwest region is the least favorable for the sales of ladies sweaters during this timeframe, the product will be taken from the allocation initially provided to the DC serving these stores and sent to the DC serving the Pacific Northwest. 'Nationals' makes this shift with the understanding that it is optimizing product allocation while still making sure that every location will continue to have enough stock to maintain appropriate presentation and service levels.

US Retail Base Level Regions Retail Base Level Regions		Historical Sales	Initial WDD Demand	Initial WDD %	Forecast Demand	Opp/Risk %	Unit Opp/Risk	Rank Opp/Risk %	Rank Opp/Risk Demand
eastern north central		351355	405382	15.4%	405382	15.4%	54027	1	1
northeast		665743	698788	5.0%	698788	5.0%	33045	6	2
northwest		100397	112441	12.0%	112441	12.0%	12044	2	4
south central		227344	239215	5.2%	239215	5.2%	11871	5	5
southeast		290112	310436	7.0%	310436	7.0%	20324	3	3
southwest		88875	94637	6.5%	94637	6.5%	5762	4	6
southwest coast		386215	379861	-1.6%	379861	-1.6%	-6354	8	8
western north central		103360	107799	4.3%	107799	4.3%	4439	7	7

Season Timing/Changing Floors

In 'Nationals' stores, the floor space used to display ladies sweaters during the fall season is the same space allocated to display ladies tee shirts and tank tops in the spring and summer months. While the fall season begins in August, the sales of ladies sweaters do not begin in earnest for some time. 'Nationals' uses Business Weather Intelligence to help determine the right transition time to make sure that each region maximizes current opportunities and has appropriate inventory positions for their key

products at the necessary time. Business Weather Intelligence identifies the weeks/months when each location should see a spike in demand for sweaters. These specific weeks are defined as threshold times when the consumer has a significant reaction to weather conditions. Each product and location combination will have its own unique threshold time where sales will spike. 'Nationals' utilizes Business Weather Intelligence information to make sure that each store has a full assortment of required sweater programs (and related sizes/colors) on the floor prior to its identified 'spike' timeframe.



In-Season

Replenishment

'Nationals' houses products in several distribution centers around the United States to replenish goods throughout the season. In addition, they often make 'opportunistic buys' in season to capitalize on recent trends. 'Nationals' uses Business Weather Intelligence to help adjust replenishment values for its top styles in ladies sweaters which represent their best sellers. Each week, when replenishment values are systemically calculated based on a combination of historical sales, seasonal profiles, and current inventory positions, 'Nationals' used a systematic input of WDD to help adjust and optimize these calculations. This technical integration enabled maximum use of Business Weather Intelligence.

Location	Chart	Actuals												Current			
		Mar 06	Apr 06	May 06	Jun 06	Jul 06	Aug 06	Sep 06	Oct 06	Nov 06	Dec 06	Jan 06	Feb 06	Last Week #8 03/31	This Week #9 04/07	Next Week #10 04/14	
TOP		+6	+8	+6	+20	+8	+2	+40	+18	+14	+7	0	+12	+9	-1	+39	-2
albuquerque, nm		-10	-16	-10	+14	+51	+40	-13	+10	+2	+24	+14	+19	+8	-13	+2	-1
syracuse, ny		0	+1	+10	+44	+31	+31	+19	-4	-9	+12	-14	+26	+8	+7	+9	-5
riverside, ca		+84	+37	-5	-10	+9	+10	-6	-6	+1	+13	+1	+1	-35	-64	-40	-5
binghamton, ny		-15	-1	+5	+74	+40	+30	+20	+21	+12	-1	-8	+14	+11	+3	+30	+5
el paso, tx		-15	-2	+3	+6	+61	+49	+52	+9	+6	-2	+67	-2	+16	-10	+4	-7
portland, me		-9	-10	+29	+11	+11	+3	+38	-13	+2	-8	+16	+3	+5	+1	+40	+4
palm springs, ca		+32	+4	0	-10	+18	0	-1	-5	-4	+2	0	+2	-25	-24	-11	-5
grand rapids, mi		+12	+22	+4	-4	+7	+4	+50	+93	-24	+36	-12	+1	-2	-1	+91	0
flagstaff, az		+7	-4	+1	+7	+20	-4	+20	+48	-3	+20	+23	+17	-10	-26	-8	-2
taos, nm		-1	+3	-9	-5	+66	+18	-7	+8	-2	+6	-14	+6	-3	+2	-7	+3
caribou, me		-17	-16	+8	+37	+4	+11	-15	-13	-1	-1	-20	+4	-2	+24	+3	+11
phoenix, az		+14	-2	0	0	0	+1	+11	+3	-9	+3	+25	+10	+2	-39	0	-8
bakersfield, ca		+74	+3														
tampa, fl		-15	-														
houston, tx		-16	+3														
albany, ny		-13	-														
miami, fl		-12	-														
north bend, or		+58	+3														
reno, nv		+34	+3														
brownsville, tx		+2	-														
buffalo, ny		+1	-														
dubuque, ia		+60	+3														
boston, ma		-9	-														
cleveland, oh		-2	-														

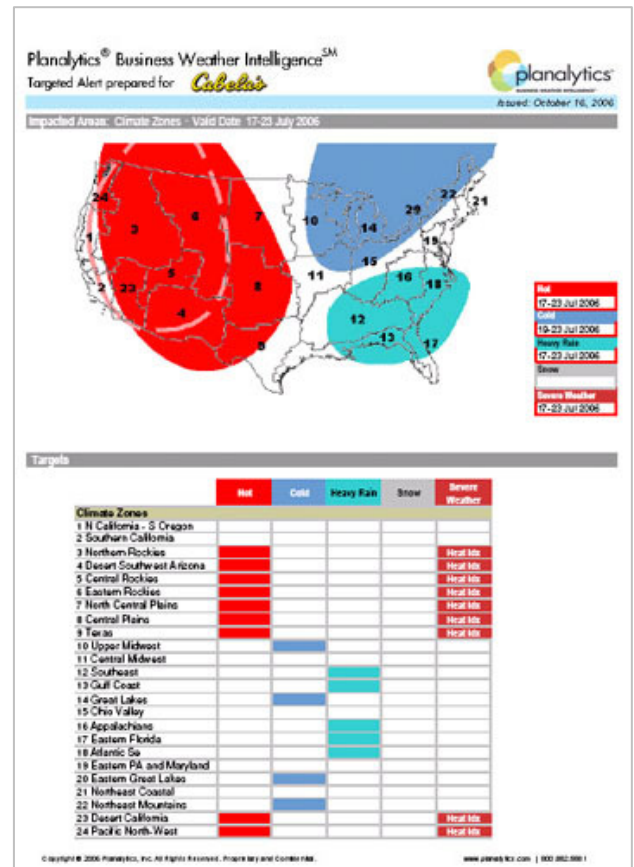


Test Stores				Control Stores				WDD	Multiplier
32 STORE	ADD2	ST	VOL	32 STORE	ADD2	ST	VOL		
9059 SOUTHFIELD	MI	B	9063 NOVI	MI	B	-36	1.00		
9060 DEARBORN	MI	A	9064 Sterling Heights	MI	A	-36	1.00		
9072 MESQUITE	TX	B	9073 PLANO	TX	B	-33	1.00		
9074 HOUSTON	TX	B	9075 HOUSTON	TX	B	-15	1.00		
9076 ARLINGTON	TX	B	9421 FT WORTH	TX	B	-33	1.00		
9081 GLENDALE	CA	B	9738 W LOS ANGELES	CA	B	18	1.05		
9082 NORTHRIDGE	CA	A	9703 LAWNSDALE	CA	A	18	1.05		
9084 COLUMBIA	MD	B	9225 GLEN BERNIE	MD	B	-7	1.00		
9120 OAKBROOK-TERRACE	IL	B	9119 HOMETOWN	IL	B	-41	1.00		
9142 HANOVER	MA	B	9185 MEDFORD	MA	B	-10	1.00		
9161 SAUGUS	MA	A	9160 DEDHAM	MA	A	-10	1.00		
9181 BALTIMORE	MD	B	9509 ANNAPOLIS	MD	B	-7	1.00		

Pricing and Promotions

'Nationals' is a highly promotional department store which advertises in print, Internet, radio and television media channels. Merchants in the sweaters department meet weekly to discuss recent historical results and determine what, if any, price changes should be implemented to stimulate demand. Business Weather Intelligence is used in two separate elements of the business.

- First, from a target marketing perspective. 'Nationals' sends targeted email campaigns each week to its core customer base. When a significant weather event is targeted for a specific location, the marketing department sends emails to this customer base *ahead of the weather event* to help stimulate demand for ladies sweaters. For example, when the Northeast region is forecasted to experience its first cold snap of the season, 'Nationals' uses Business Weather Intelligence to send a targeted email campaign to these customers within two weeks of the weather event. The focus on this email will include cold-weather products, including ladies sweaters. 'Nationals' calculates the success of this campaign by measuring the lift in sales relative to planned sales.
- Second, to capitalize on sales margin opportunities. The selling season for ladies sweaters is confined to a limited timeframe, primarily September through January. 'Nationals', like many department store retailers, is highly promotional and has a limited "full price" selling season. 'Nationals' uses Business Weather Intelligence to help validate pricing and promotion based decisions. For example, if the weather has been relatively warm early in the season, it is common for merchants to reduce prices in order to stimulate demand. Business Weather Intelligence is used by the ladies sweaters merchants at 'Nationals' to evaluate and compare the suggested price changes relative to upcoming weather. The result is often high margins and increased sell through percentages in locations where pricing is successfully aligned with weather.



In Store Merchandise Management

Having an understanding of the demand for a particular product during the season can have a significant impact on how and when merchandise is managed within a store. 'Nationals' uses Business Weather Intelligence to help understand the demand

for sweaters over the immediate days and weeks. This information is used by several personnel at 'Nationals' to make sure that they are in stock with the right assortment levels in key styles at top performing locations during those peak business times when it matters most.

Store Operations

Weather can have a significant impact on the traffic at 'Nationals' stores. Business Weather Intelligence is used to help shift store staffing on a weekly basis to ensure that proper personnel are in place to service customers during peak days and times. This information is considered in conjunction with other intelligence such as marketing and promotions.

Post-Season

Managing and Evaluation Performance

Retailers are consistently looking backwards in time so that they can learn from recent events in an effort to help adjust future performance. This typically occurs on a weekly, monthly, and seasonal basis. Understanding how your business performed includes having the necessary expertise on how the product was received by your customers, how promotions correlated with results, and other external factors. Weather is an important component in this evaluation. By having an understanding of key weather metrics such as temperature, precipitation levels, and days of rain by location, helps management draw conclusions about results for this year compared to last year in an effort to begin planning for the future. 'Nationals' uses Business Weather Intelligence to understand not only recent weather events, but also compares the weather to 30-year historical averages to get an understanding of how the customer "felt" relative to the weather in each market.

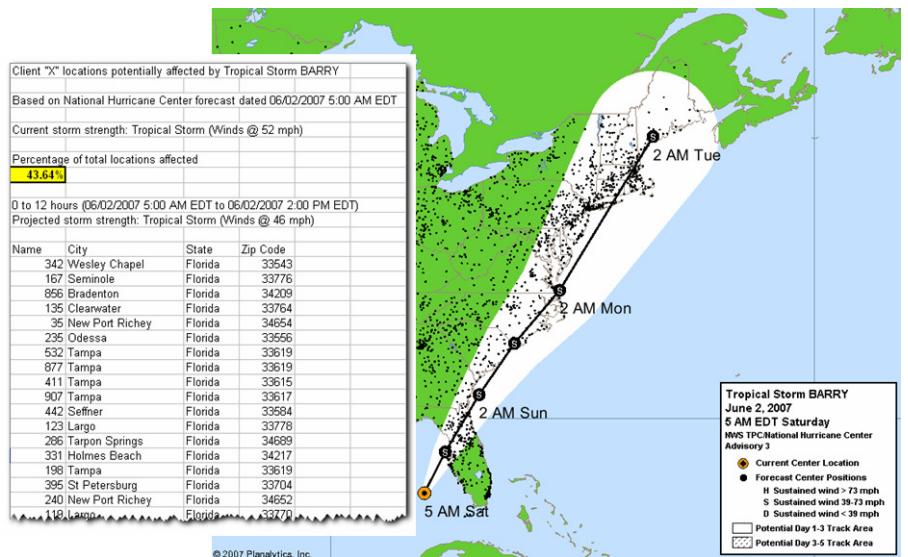
Activities throughout the Product Lifecycle

React to Anomalous Weather Events

Throughout the lifecycle of the product, there are external events which take place which, in many cases, can not be specifically planned for at a time/location level.

Having plans in place to react to these events is what differentiates one retailer from another.

Anomalous weather events can occur in the form of winter snowstorms, hurricanes, floods, drought, etc. These are often classified as events which are relatively short in time duration; however, they are



significant in how they impact consumers. 'Nationals' receives winter storm alerts and performs a number of activities based on the location and severity of the event. Typically provided up to one to two weeks in advance, 'Nationals' ensure that sweaters (and other cold weather products such as boots, gloves, hats, etc.) have increased levels of inventory and are positioned prominently on selling floors within affected stores. As the event nears and the severity and geography of the event becomes clearer, 'Nationals' often adjusts store staffing as these events have a significant impact on customer traffic to the impacted stores.

Next Steps: How to Get Started?

Most retailers would agree that weather has an impact on their business. Determining how much of an impact and what to do about it is often a question that goes unanswered. This primer provided examples of how a retailer can use Business Weather Intelligence in a pre-, in-, and post-season fashion. Each retailer is unique, and has its own business processes, organizational structures, and technological infrastructure. Therefore, the application of Business Weather Intelligence to a specific retail or CPG organization will also be distinct as it should support the individuality of each business. In most cases, retailers 'start small' by understanding the weather driven demand associated with a specific product/category/location combination to determine to appropriate level of Business Weather Intelligence to apply. Over time, this information is expanded to help support additional merchandise categories and business functions. Planalytics client services team helps retailers determine the appropriate areas of the business to realize 'quick wins' using Business Weather Intelligence. Decision tools, derived out of Business Weather Intelligence, are provided to translate WDD information in support of specific business processes. These tools help retailers and CPG companies understand, plan for, and react to, the customer response relative to specific weather conditions in unique locations. While only Mother Nature can create and control the weather, successful retail and CPG companies use Business Weather Intelligence to proactively manage and evaluate how it affects their business.

Best Practices: What Are The Leaders Doing?

Integrating Business Weather Intelligence into Supply Chain Systems

Most retailers and CPG companies quickly realize that there are numerous uses for Business Weather Intelligence. Once this realization is made, Planalytics works with clients to

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Location	Chart	Actuals													
		#10	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20	#21	#22	
		04/14	04/21	04/28	05/05	05/12	05/19	05/26	06/02	06/09	06/16	06/23	06/30	07/07	
TOP		-29	-17	+8	+1	+25	+8	+7	-2	+4	-1	-5	0	-3	
eastern north central		-39	-10	+5	+7	+63	+39	+17	0	+1	+16	+2	+4	-3	
northeast		-48	-25	+17	-1	+48	+19	+26	+8	+26	-6	-9	+12	-9	
northwest		+2	-14	-14	-17	+26	-24	+18	+31	-4	-8	-4	-24	+1	
south central		-26	-21	-3	-4	0	-6	-15	-6	-10	-7	-8	-12	-9	
southeast		-22	-19	+3	+9	+18	+6	-5	-6	+1	+2	-1	+4	+1	
southwest		-20	-6	0	+2	+1	-9	-14	0	-8	-1	+1	+5	-8	
southwest coast		+3	-9	+13	-2	+20	-20	-4	-21	-13	-6	-7	-14	-4	
western north central		+6	+7	+3	+13	+4	-10	-13	-16	+5	-6	0	-3	-7	

maximize the use and value of this information within the business. A key methodology to realize this value is through **systemic integration of Business Weather Intelligence**. Retailers and manufacturers can import weather-driven demand values directly into merchandising and supply chain systems including **JDA** (E3 Replenishment, Arthur Planning and Allocation, Manugistics), **Oracle** (Demand Forecasting), **SAS** (MarketMax), **Altametrics** (eRestaurants), and other to support core functionality such as planning, replenishment, and labor scheduling. These values are used to help improve systemic calculations which flow down to the SKU/location/time level. Initial merchandise plans are enhanced to incorporate weathers impact for the season. Within the season, weather driven demand values are integrated into allocation and replenishment systems to ensure that service levels are met, stock outs do not occur, and retailers do not have to “chase” business.

About Planalytics

Planalytics, Inc. (<http://www.planalytics.com>) is the leading global provider of Business Weather Intelligence. Our products and services are designed to enable companies to understand and manage the impact of weather on their business. We are not a data provider or simply a weather forecaster. Our full-service platform provides the actionable information a company needs to make essential decisions during pre-season and in-season planning, as well as in merchandise management, execution and post-season analysis. Clients such as Ace Hardware, Nestle Waters, Payless ShoeSource, Ross Stores, Cabela's, and Jamba Juice use Planalytics business weather intelligence for improved decision-making in pre-season planning and in-season merchandise management and execution. Business Weather Intelligence is essential in every business to support more effective financial planning, merchandise management, advertising, promotion timing and operational effectiveness.

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