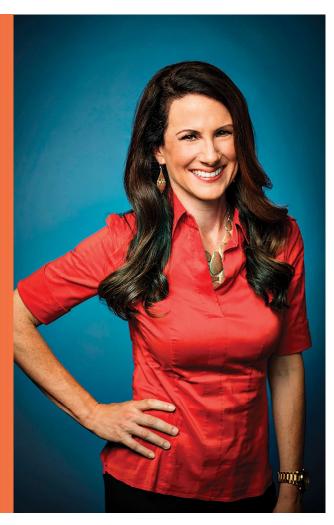# HOW YOUR BEHAVIOR SHAPES THE WEATHER FORECAST

NORA ZIMMETT, EVP AND CCO OF THE WEATHER CHANNEL

Nora Zimmett and her programming team at the Weather Channel recently trusted an unconventional data source to inform its lineup: social media comments.

Zimmett, the company's recently promoted chief content officer and executive vice president, was determining the next show the network would pick up, poring over hard numbers from Nielsen ratings and internal viewer data. But she wanted a more holistic impression of what the channel's audience might want. Through social listening, Zimmett's team researched which episodes of old shows still received watches and commentary online, measuring viewer sentiment.

The analysis served up a surprising top choice: a show that had been off the air for almost a decade.

"There was this massive outcry to bring back *Storm Stories*," Zimmett says of the series, which premiered in 2003 and explored some of the most bizarre manifestations of the weather, featuring live footage of tornadoes, hurricanes and blizzards. "We thought this was an old show, that we'd been there, done that," she says. "The answer was no."

As a result of this combination of quantitative and qualitative data, the Weather Channel, Zimmett says, has decided to pick up another season. While her colleagues predict the weather, Zimmett's team — armed with a growing cache of user data — is increasingly predicting how people will relate to it.

GLOBAL NEWS, LOCAL SHOUTOUTS

Forecasting and communicating the weather can be complicated business. Not only can a viewers' habits and interests be hyperlocal, but so can the weather. The more a broadcast speaks to one specific region, the more it might alienate others. That's where the Weather Channel strategizes with local mentions during national broadcasts.

"We not only program to the time zones but we make city callouts where we know the biggest viewers are watching," Zimmett says. If the Weather Channel sees a concentration of viewers in Toledo, Ohio, tuning in, the broadcaster might zoom to that location. "We've really seen an increase in ratings as a result. Every month we re-examine where those viewers are and make sure we're programming to them."

Zimmett's team of meteorologists also analyzes upcoming weather for the best ratings opportunities, determining how much attention the network will give any event. A blizzard in Bismarck, North Dakota, might be larger, but it likely won't get the same coverage as one in New York. "Is this a storm we should double down on and deploy more resources?" Zimmett asks. "Or, because so few people are going to be impacted, should we do our standard coverage plan?" That's a balance, of course. If a giant storm's causing a crisis affecting just a few people, it's still necessary to put it on the news.

UNDERSTANDING INDIVIDUALS THROUGH APP HABITS

The Weather Channel app culls from a much more intimate data source: users' swipes, taps and searches. Its forecasts are tailored to an audience of one.

Tracking these habits lends a personal touch to the Weather Channel app, which is actually not owned by its namesake network but by IBM. IBM bought the Weather Channel's digital counterparts in 2016, forming a separate entity, the Weather Company, which sits on a treasure trove of data. Hurricanes, tornadoes, droughts, thunderstorms, clear skies and every manifestation in between — the Weather Company crunches **400 terabytes** of data daily into models about what's happening in the skies and delivers the results to its family of apps and sites.

A single forecast at the Weather Company leverages its own models plus more than **150** government and private models. It employs more than **175** meteorologists and draws data from **140,000** home-built weather stations globally. This allows the Weather Company to customize forecasts to the "microclimate" level. Married with individual user data, those insights enable the delivery of

LOCAL WEATHER SHAPES HOW WE SHOP

The Weather Company's data-driven insights about how weather impacts behavior help advertisers geotarget consumers and anticipate their needs.

Charcoal sales are highest in the summer. But in the **South** and **Northeast,** people tend to stock up when a higher minimum wind chill is forecast.

Bug spray sales, which spike in the summer, are highest in clear conditions in **West North Central States** and in foggy conditions in the **Northwest.**

Dandruff shampoo sales go up on muggy days in the **Central U.S.** and on days with high wind chill in the **Southeast.**

Sales of chocolate candy bars go up in cold months. In the **Northeast**, they peak when muggy conditions are called for at night. But in the **Southwest,** a higher heat index will boost sales.

personalized and dynamic weather reports. An app on the user's phone tells the Weather Company its position. As the user walks around, say, a city like San Francisco, the temperature and forecast can change — sometimes one side of San Francisco is blanketed in fog, while another is bright with sunshine — and the app will adjust accordingly.

HOW YOUR PHONE FEEDS THE NATIONAL FORECAST

User data doesn't just inform the user experience; it can also inform the national forecast. The Weather Company receives 80-100 million barometric pressure reports from smartphones every day — atmospheric changes picked up by user devices around the world and used to inform its models.

Of course not all data's good data. Quality assurance is crucial for any company strategizing around analytics, as insights are only as sharp as the data itself. Bachstein says the Weather Company keeps its data unpersonalized and stored "on the edge," outside of its servers. "That data has to be scrubbed and verified," she says. "Not every piece of data will make it in. There's a pretty rigorous quality check."

THE WEATHER COMPANY

RECEIVES 80-100 MILLION

barometric pressure reports from smartphones daily, which help fine-tune national forecasts.

Smartphones are just one type of edge device put to work by the Weather Company. Bachstein says sensors on airplanes and connected devices like smart appliances or home weather stations — with user permission — can also be critical sources of weather data. Someday, the company hopes to pull from driverless cars. These fire hoses of data provide insights into climate, user behavior and how the two are connected.

That has advertisers salivating. By adding third-party consumer data to the mix, the Weather Company can offer retailers the opportunity to "know" when and where certain buying trends will occur. Dandruff shampoo sales increase as it gets muggy in the central United States. Chocolate candy bar sales are high in the cold months, though in the southwest U.S. they peak when a higher heat index is forecast. The more the Weather Company understands how people react in certain weather environments, the sharper the consumer feedback loops become.

TURNING DATA INTO STRATEGY

How do large organizations better understand small behaviors? For media companies and app developers, the answer to that question determines viewer engagement. At the Weather Channel, Zimmett scrutinizes ratings to see how each tweak affects the number of weather checks each week. "If you can get the time watched up a few minutes each month, then you're starting to win the battle."

To that end, Zimmett explains, it's important to tap analytics-driven insights but also include humans — key players in getting viewers excited about the weather — in the process. "We believe that using this incredibly visceral storytelling method — putting our talent in the weather — will lead to engagement."

With so many discussions around data, from government privacy to social network security to ad targeting, it's easy to

forget the applications of analytics are still in their infancy. Zimmett had just returned from the National Association of Broadcasters' annual conference when she spoke to Forbes. Many of the participants were small startups doing intricate analysis of viewers' emotional responses to programs. To Zimmett, this seems like the next frontier.

"It's a whole new type of research we're getting very interested in," she says. "It's not just whether a person watches programming but understanding how they feel when they watch it. That, to me, is the next generation."