LOOKING FORWARD

THE EVOLUTION OF CONSUMER GOODS FORECASTING

A JOINT REPORT FROM

nielsen AND prevedere

LETTER FROM THE AUTHORS

This year has been tough for manufacturers and retailers alike. Both of our companies have been consistently asked, “What drove growth?” and “Why?”. However, looking back is only good if you look forward too.

Working together, Prevedere and Nielsen have explored a few categories to answer those very questions.

In the following pages we’ll not only discuss why growth happened - or not - but how you can find growth in the future. More importantly this paper will show you that finding increasingly elusive growth requires you to look holistically at your business. You need to look within the context of your company and within the broader marketplace: look specifically at your category and across an entire channel.

2018 will be another challenging year, but hopefully with some of the lessons and best practices laid out here you’ll start off on a better foot.

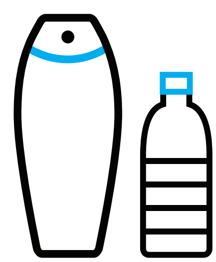
INTRODUCTION

It feels like it's getting harder to predict where retail is going, doesn't it? By some measures, 2017 has been one of the most difficult years for retail in recent memory. From stores selling electronics to those selling apparel, closures are happening at a record pace. In fact, over the last 10 years nearly 10,000 mass, electronics, apparel, toy and home stores have closed their doors[1]. This year alone 5,300 stores closed by the end of June as reported by think tank Fung Global Retail & technology. And while that number is likely much higher across the entire U.S. retail landscape, that's a startling amount only half way through the year.

Disruption may be the driving factor, causing change faster than ever, however the retail landscape has always been driven by a complicated tangle of factors. Marketing, promotions, and product innovation play an integral part in driving sales: but external factors, such as consumer confidence, gas prices and discretionary income - among many other factors - also heavily shape demand. As consumers become more connected, and businesses become more global, you can't survive doing what you've always done. You need to look beyond the four walls of your company.

> IF YOU FOCUS JUST ON YOUR BUSINESS YOU'LL MISS THE REAL DRIVERS OF CHANGE, GROWTH AND CONTRACTION.

To find that, you'll likely have to look in places you've never considered before. If you're selling meal kits to consumers, do you know who you're competing against? Grocery stores? Restaurants? What about movie theaters, or other places that people might look for an evening of entertainment with the family? If you're in the hand and body lotion category, do you know how Google searches for "morning sickness" are trending? You should, because it turns out that search trends for morning sickness are a great leading indicator of demand for hand and body lotion. Many of those searches will be followed a few months later by peak dryness of skin caused by pregnancy.



Connecting these dots will always be a challenge, however Nielsen and Prevedere, a member of the Nielsen Connected Partner Program, have collaborated to examine some past trends, identify what caused them and uncover connections you might never have thought of. Most importantly, however, we will answer how you can plan, and predict what's ahead.

[1]Nielsen TDLinx

THE FMCG LANDSCAPE

It's easier than ever for consumers to choose another brand, another product, another category or another store. The next best option is always a swipe or a tap away. All of this means it's harder and harder for you to know where category growth will come from. And where your next competitor may pop up.

So, do you know where your business is heading? Do you know where your growth is going to come from?

Today consumers can seemingly snap their fingers and make a purchase: everything from razors to mattress are ordered in one click and delivered to front doors. It may seem like we're headed back to a time when milkmen delivered door-to-door, but online consumption is merely one disruption amongst many.

The American retail landscape is in flux: more consumers demand great value and premium experiences, and also shop at stores that fill their immediate needs. At the same time that new digital retailers and platforms are emerging every day, deep discount retailers like Lidl and Aldi are forcing all retailers to re-evaluate their value proposition to consumers. With this two-front war emerging, many American retailers are being forced to confront two existential battles at the same time.

The disruption doesn't stop for brands and manufacturers. While the largest FMCG manufacturers work to maintain flat growth, the smallest companies and store brands are seeing hope. In fact, as of August 2017, contractions from the largest 200 or so FMCG companies[2] erased all but $1 billion of the $5 billion in growth driven by the smallest 20,000 FMCG companies and store brands. And this is not a uniquely American trend. The same dynamics play out across most of the developed and developing world.

So, do you know where your business is heading? Do you know where your growth is going to come from?

[2] Source: Nielsen Answers, Total U.S., 52 weeks ending Aug 26 2017 vs. year ago. UPC-coded. 52 week sales exceeding ~$70k.

ARE YOU MANAGING OR ARE YOU GUESSING

In recent years, consumers' responsiveness to promotions has declined dramatically. In fact, Americans have become 5.3% less likely to respond to a promotion than they were three years ago. It makes sense when consumers have any brand or product available at the tap of a finger that promotion and distribution may not be the only differentiators. The tried and true levers you used to pull to capture the growth you believe is out there aren't working like they used to.

So, when reality doesn't play out as you've forecasted, you're left trying to explain "why did this happen" versus understanding "what will happen." And the costs are staggering.

The Institute of Business Forecasting and Planning (IBF) report found that the average one-year food and beverage forecast is off by 17%. For consumer products as a whole, the same forecasts are off by 20%. And not surprisingly, these forecasts are even more problematic at the product level. So are you managing your business or just guessing?

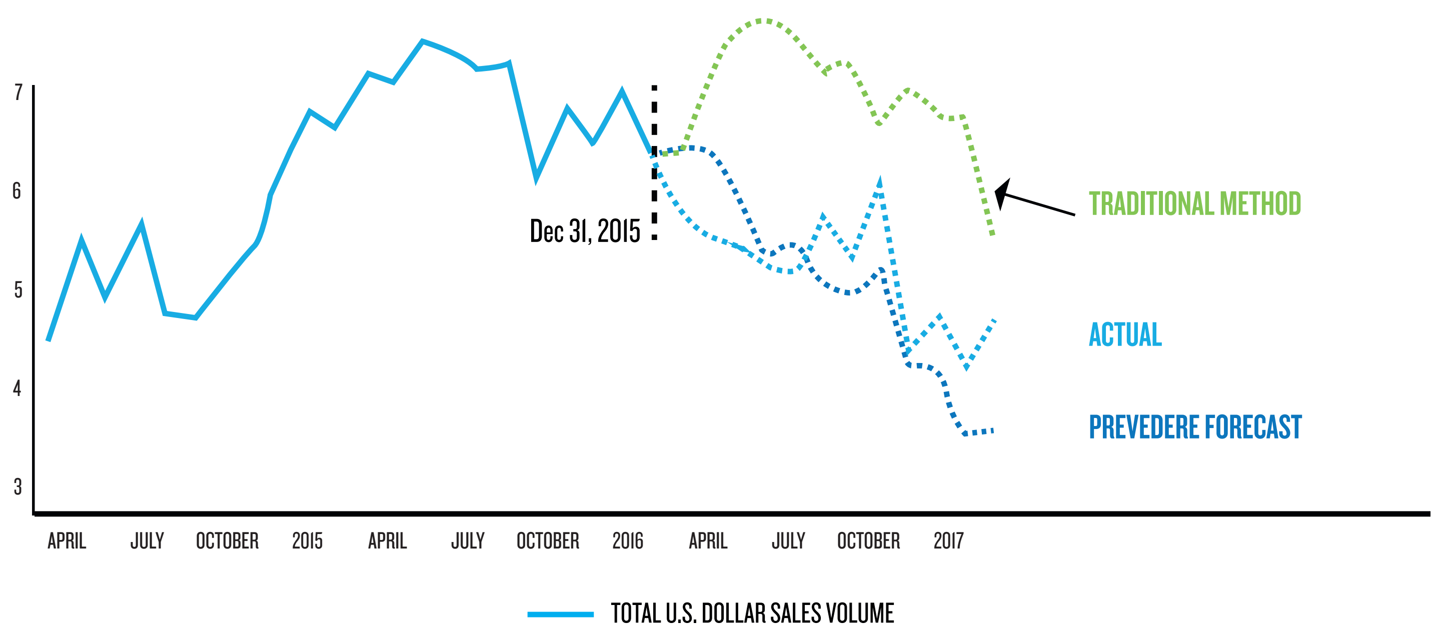
IF THE CONVERSATION BELOW SOUNDS FAMILIAR, YOU'RE PROBABLY GUESSING.

THE DANGERS OF RELYING ON THE PAST

A bad forecast won't just deliver late and incomplete answers. It will also drive up losses. In fact, the financial cost of over-forecasts is staggering. The IBF estimates that for every $1 billion in sales, a 1% over-forecast error can result in losses between $5.5 million to $7 million annually. The primary reason is that many companies rely on past internal performance to try to understand the future. Analytics methods that are nearly 100 years old and rely on historical trends and assume an unchanged economy are still in use today. This, however, is not a reality. Let's look at the dangers of relying on the past in three different categories.

SPIRITS

SPIRITS SIX MONTH Y/Y % GROWTH



Source: Prevedere Category Forecast - US Spirits, Nielsen

Assume it's coming to the end of the year in 2015 and you're planning for the next six months. Commonly used forecast methods that rely on historical trends and assume an unchanging economy would have predicted you'd see growth by the middle of 2016.

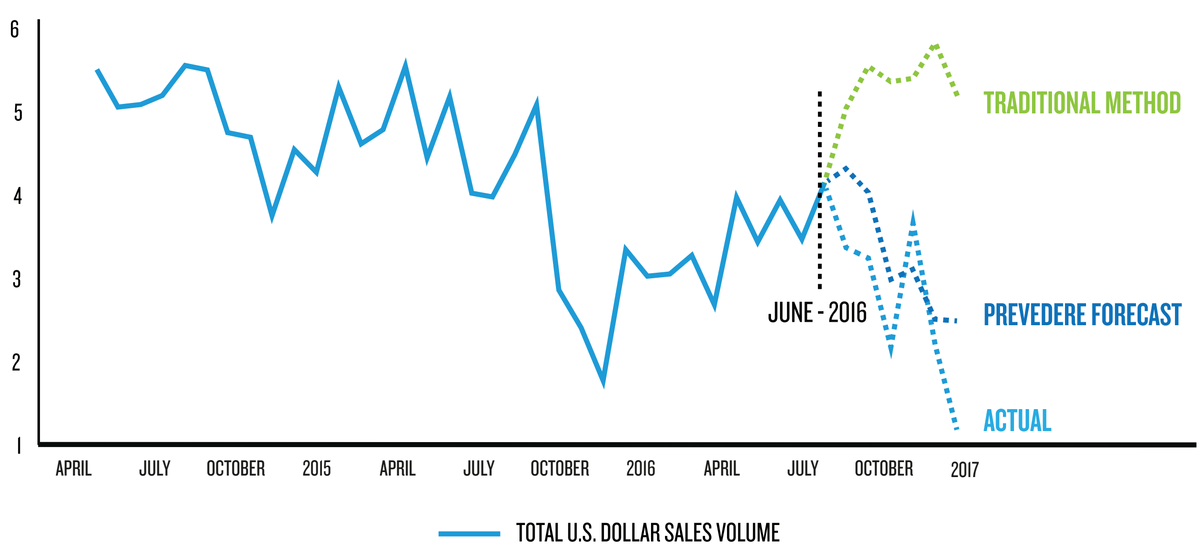
So when growth starts slowing in April 2016 and management starts asking why your brand is not living up to expectations you go down every rabbit hole to understand how your best predictions could have been wrong. **"Are people not drinking as much because of marijuana legalization?" "Are millennials not drinking because they're too tired?"**

> IF YOU CAN EVEN FIND THE ANSWERS TO THOSE QUESTIONS, AT BEST YOU'LL HAVE ANSWERED, "WHAT HAPPENED" TO MAKE YOU MISS YOUR NUMBER. BUT WHAT ABOUT UNDERSTANDING "WHAT WILL HAPPEN NEXT?"

SALTY SNACKS

Over the last three years, sales of salty snacks have slowed tremendously. Even though salty snacks are one of the largest packaged food categories that's still growing, growth in his category over the last year has halved from the 5% growth enjoyed in 2014. Again, imagine if you were developing your 2H plan in June of 2016. Traditional forecasting methods would show a strong end-of-year finish, but what actually happened was much less favorable.

SALTY SNACKS SIX MONTH Y/Y % GROWTH



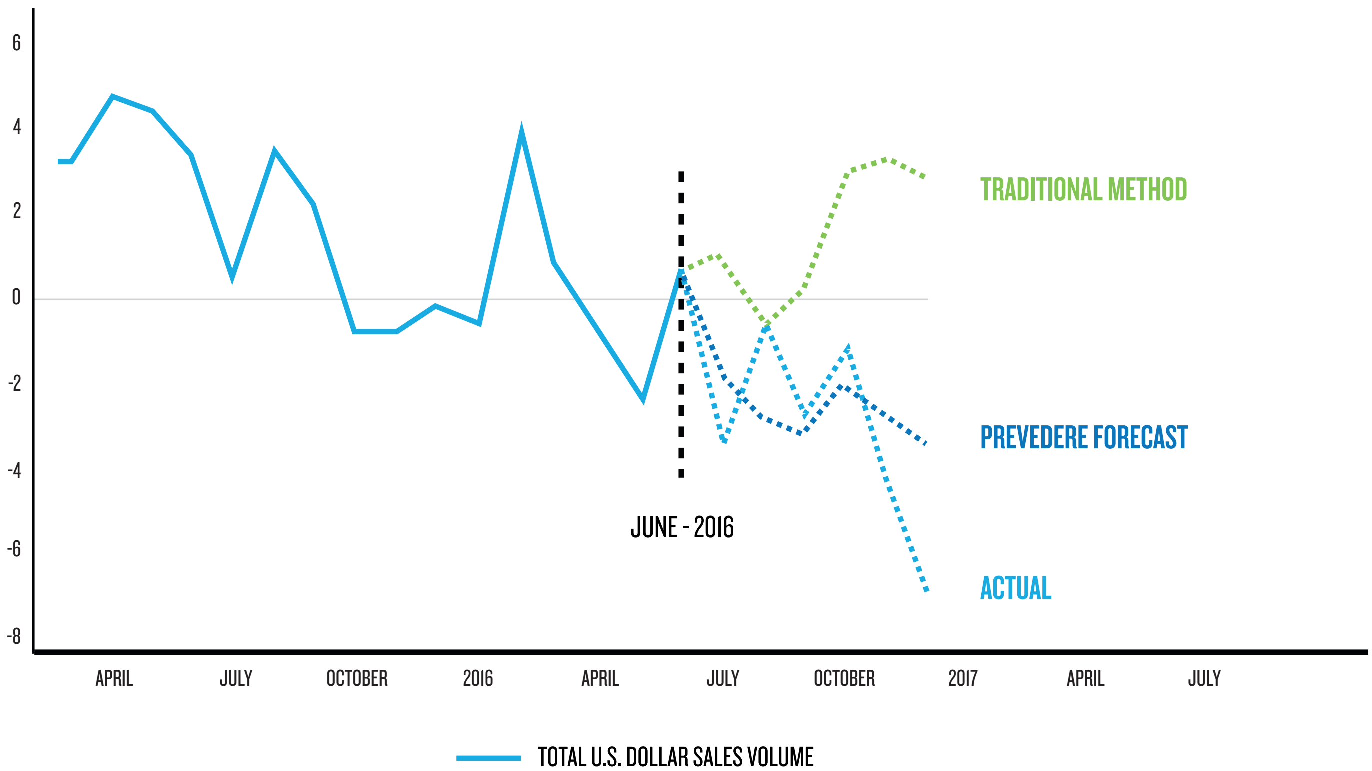
Source: Prevedere Category Forecast - US Salty Snacks, Nielsen Total XAOC Incl Conv - Salty Snacks, USD Volume

DIAPERS AND TRAINING PANTS

Non-food categories are also vulnerable to the dangers of relying on the past to predict the future. Diapers and training pants have seen gradual decline over the years. With many young families having kids later than their parents and their parents before them, our population is growing too slowly to naturally yield growth in diapers sales. On top of that, many busy parents are increasingly buying their diapers online. Over the last year, one in five dollars spent on diapers was spent online. So, the places you'll have to look for growth are changing.

If traditional methods of forecasting show a year-end lift in 2016 based on seasonality or historical trends, what actually happened tells a different story.

DIAPER AND TRAINING PANT SIX MONTH Y/Y % GROWTH



Source: Prevedere Category Forecast - US Disposable Diaper and Training Pant, Nielsen Total XAOC Incl Conv, USD Volume

A PATH FORWARD

The good news is that there is a path forward. Technologies such as cognitive computing and predictive modeling can easily deliver forward-looking insights, so you don't have to move mountains to know what your consumers want, or where your category is going. We're at a point where you can get a glimpse of that earlier, better and faster. You just need to use the right tools for the right kinds of questions.

ANALYTIC TOOLS HAVE EVOLVED TO DELIVER INSIGHTS

What Happened?			How Did It Happen?		What Will Happen?	
Excel	Data Warehouse	BI Tools	Data visualization	Stats packages	Predictive modeling	Cognitive computing

THE THREE A'S OF PURCHASE BEHAVIOR

Advances in analytics now allows retailers and manufacturers to predict demand with a more holistic view of the consumer. There are three major elements that affect consumers' current and future purchase behavior. Understanding all three can accurately predict what, when, and where consumers will buy..

- ***Affinity*** – how well do they like your brand, product, store experience. This is the majority of work done manufacturers and retailers. Getting the product just right, optimizing marketing, getting feedback, etc.
- ***Ability*** – no matter how much people love your product or brand, they won't buy unless they have the means to do so. This is a factor of how much they are earning, if they are employed, other costs that impact discretionary spending, and other priorities to their hard earned money.
- ***Attitude*** – finally, even if people love your product and have money, they STILL may not purchase if they don't feel confident about themselves, their financial situation, certain social trends, politics or the economy. Regardless if their attitude is warranted or not, it greatly impacts their decision to buy.

With this in mind, let's examine those categories previously mentioned to see the external factors that have been proven to drive future demand.

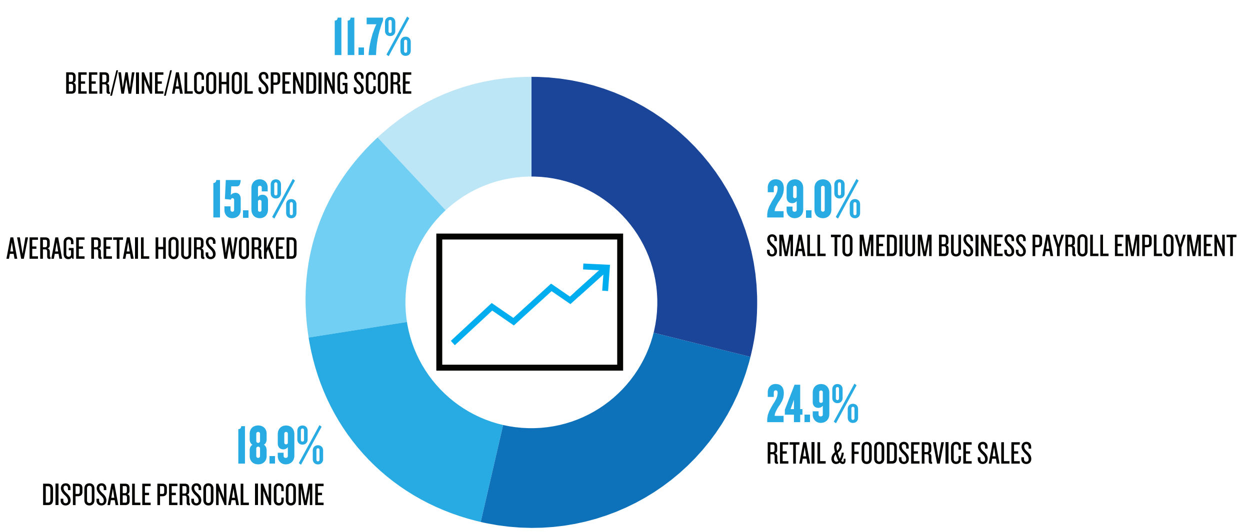
SPIRITS

Spirits sales will ebb and flow with the rise and fall of discretionary spending, which is why the major leading indicators of spirits sales have something to do with income and labor. Retail and small business employees comprise a substantial percentage of hourly wage workers. The more they are employed and the more they work, the more spending money they have in their pockets. Factoring in survey scores about their attitudes to spending more on beer, wine, or alcohol adds more granularity to future spirits demand.

SPIRITS SALES INDICATORS

Percentages indicate leading indicator weighted importance

Spirits Sales Leading Indicators



Source: Prevedere Category Component Report

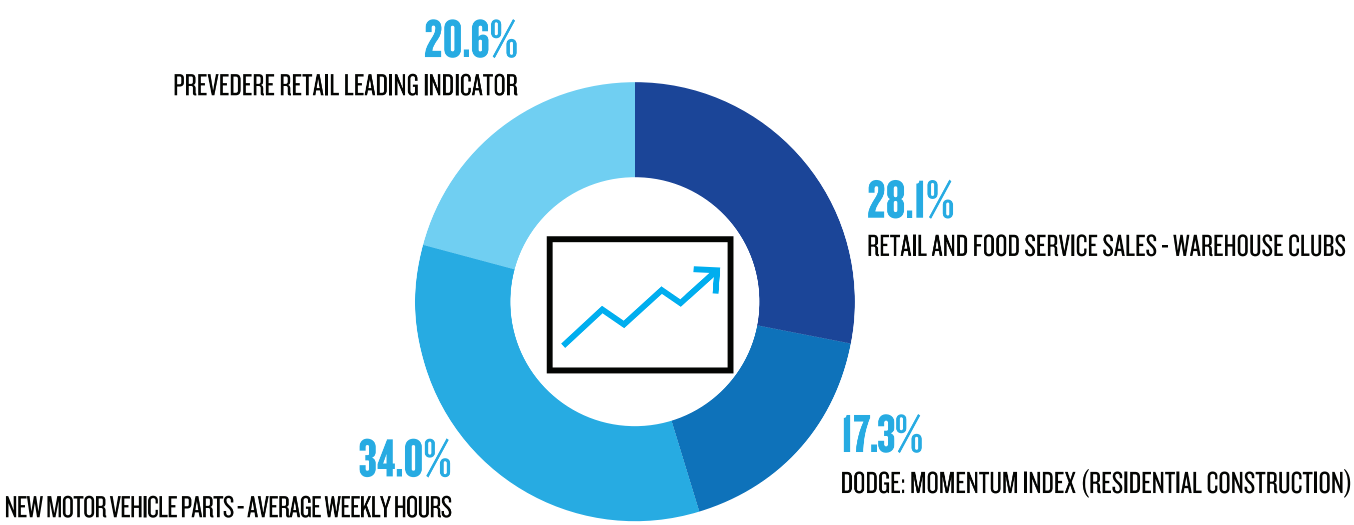
SALTY SNACKS

Like the Spirits category, future demand of salty snacks is strongly linked to discretionary spending, which can vary month-to-month for those not on a fixed income. The automotive and construction industry comprise a large portion of the US hourly workforce. Unlike spirits, salty snacks are purchased in large quantities at warehouse clubs and superstores. Factoring in the overall health of the retail industry with the Prevedere Retail Leading indicator provides a holistic view of demand for salty snacks.

SALTY SNACKS SALES INDICATORS

Percentages indicate leading indicator weighted importance

Salty Snacks Sales Leading Indicators



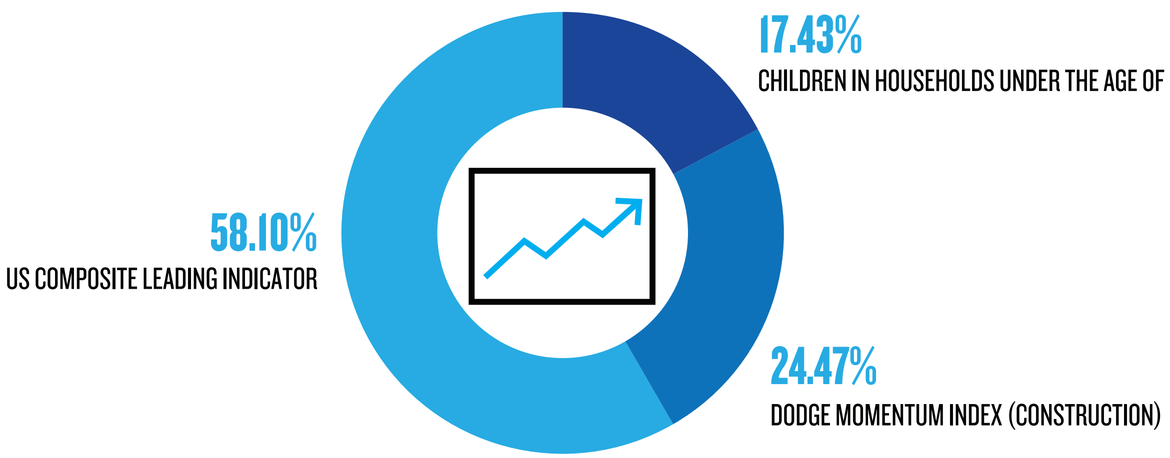
Source: Prevedere Category Component Report

DIAPERS AND TRAINING PANTS

For this category, you'll notice a much different set of external factors that impact future demand. Since diapers and training pants are so strongly tied to infants and toddlers, you need to consider broad reaching leading indicators that affect population growth and the general economy. Of course, as more households who have children under 5 increase, so will diaper purchases. But the decision to start a family appears to be based on the overall health of the general economy (the US Composite Leading Indicator) and the purchase of a new home (Dodge Momentum Index).

DIAPERS AND TRAINING PANTS SALES INDICATORS

Percentages indicate leading indicator weighted importance



Source: Prevedere Category Component Report

NEXT STEPS

Retailers and manufacturers in the FMCG space have many challenges ahead. Fortunately, there are new methods and technologies to provide fast, reliable, and data-driven insight by category and region. You can start managing the future of your business instead of guessing, all without having to rip and replace any existing systems or processes. Instead, use external analyses to augment your day-to-day decisions with a quick, yet reliable view of what's next. Use those analyses to validate your current plans and strategy. Use them to discover hidden performance drivers. But also use the analyses to get support from your stakeholders to experiment with something new.

So, let's work together to identify what's coming next for your business. We hope you'll get in touch to learn more.

ABOUT THE NIELSEN CONNECTED PARTNER PROGRAM

The Nielsen Connected Partner Program is an industry first, offering an open ecosystem for companies servicing the retail and CPG industry. By opening up data pipelines, partner companies and Nielsen clients can find each other and collaborate in an open data ecosystem; remov ing the most common and burdensome barriers to connecting applications and data sets at scale. With Nielsen's data as the DNA of this program, Nielsen clients and partners will harness more efficient and accurate analytics that drive better industry results from all angles.

Through the Connected Partner program, a client's Nielsen data and Prevedere's real-time external insights engine, which analyzes millions of global economic and consumer behavior leading indicators, can be used to develop highly accurate predictive sales models of many fast-moving consumer goods (FMCG) categories.

ABOUT PREVEDERE

Prevedere is an industry insights and analytics company helping business leaders make better decisions by providing a real-time view of their company's future. While most companies can easily report on internal performance, Prevedere's external real-time insights engine constantly monitors the world's activity, identifying future threats or opportunities to business performance. Along with a team of industry experts, data scientist, and economists, Prevedere helps business leaders make the right decisions in an ever-changing world. For more information, visit www.prevedere.com and follow @Prevedere on Twitter for timely industry insights.

ABOUT NIELSEN

Nielsen Holdings plc (NYSE: NLSN) is a global performance management company that provides a comprehensive understanding of what consumers watch and buy. Nielsen's Watch segment provides media and advertising clients with Nielsen Total Audience measurement services for all devices on which content — video, audio and text — is consumed. The Buy segment offers consumer packaged goods manufacturers and retailers the industry's only global view of retail performance measurement. By integrating information from its Watch and Buy segments and other data sources, Nielsen also provides its clients with analytics that help improve performance. Nielsen, an S&P 500 company, has operations in over 100 countries, covering more than 90% of the world's population. For more information, visit www.nielsen.com.

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