

The Retail Analytics Advantage

A RACE TO PREDICTIVE AND PRESCRIPTIVE ANALYTICS

IHL GROUP

HARD DATA, SMART DECISIONS

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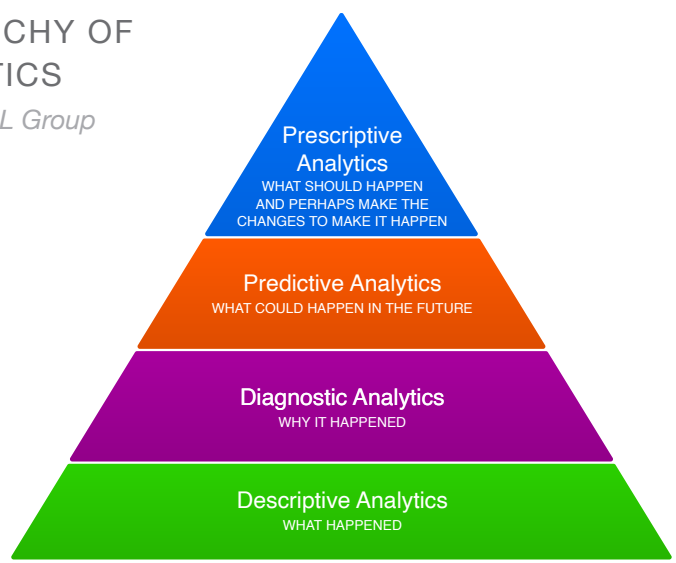
"In God We Trust; All Others Bring Data" *- W. EDWARDS DEMING*

This is a mantra CIOs have lived by for several years, but with the growth of analytics it has permeated the desire from other business units as well. And, despite the derision that radio hosts rain down on the use of analytics in professional sports for decision making, there is considerable momentum for more advanced analytics in retail and hospitality. *Why?* Because business leaders in retail are always being asked to do more with less and must understand what changes bring the most bang for the buck.

In recent research conducted by IHL Group and RIS News for the Retail Experience Study, retailers representing over 300 brands were asked about the types of analytics they used.

HIERARCHY OF ANALYTICS

Source: IHL Group



WE DEFINED FOUR DIFFERENT CATEGORIES OF ANALYTICS:

Descriptive Analytics These are more basic calculations that show to the user what happened. (Example: Sales increased, sales decreased, shipments came in or they didn't, etc.)

Diagnostic Analytics Going beyond just what happened, diagnostic analytics review the reasons why things happened. (Example: Shipments were late, weather impacted sales, the product was insufficient, employees called in sick.)

Predictive Analytics This level of analytics takes into consideration what happened and why it happened. It also allows you to look at different scenarios and expected impact if those changes are made. (Example: If we make Store A assortment match Store C instead of Store B, what is the expected sales impact?)

Prescriptive Analytics This level not only factors the scenarios but actually makes the recommendations on what to do. In the most advanced cases, the system will also initiate the changes in other systems. (Example: This item is priced 10% over competitors, the price should change to parity or below competitors to drive volume.)

Over the last several years, great advancements have been made in analytics and retailers are moving more towards the advanced level of analytics.

Categories Researched

In our research, we asked retailers for the level of analytics they currently use for a wide variety of functional areas. These areas included:

Loss Prevention

Employee Performance

Promotions Performance

Merchandising/Category Performance

Supply Chain Performance

Store Performance

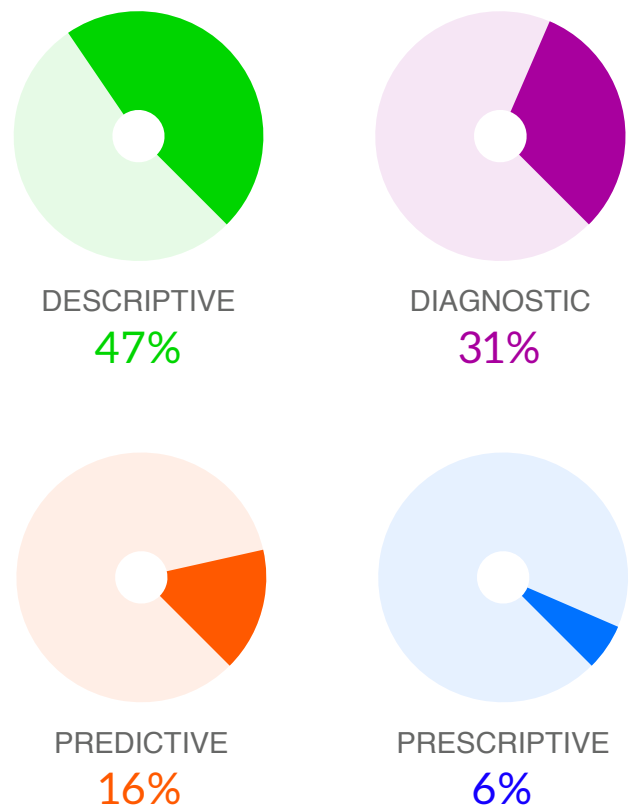
Vendor Performance

What is immediately apparent is that the more advanced analytics (Predictive and Prescriptive) currently being used are rare in most of the categories today. Descriptive Analytics (what happened) dominates in every category with an average of 47% per category and only 22% use Predictive or Prescriptive Analytics.

For Diagnostic-level Analytics (why it happened) at 31%, Merchandising/ Category Performance has the highest current usage at 37% with Customer Loyalty and Store Performance having similar numbers at 35% of our sample.

ANALYTICS LEVEL USED ACROSS ALL CATEGORIES

Source: IHL Group



As we move on to Predictive Analytics (what could happen - scenarios), two categories stand considerably higher than the others. These are Promotions Performance (21%) and Store Performance (21%) at the highest level of use and Employee Performance (11%) and Vendor Performance (13%) with the lowest level of use.

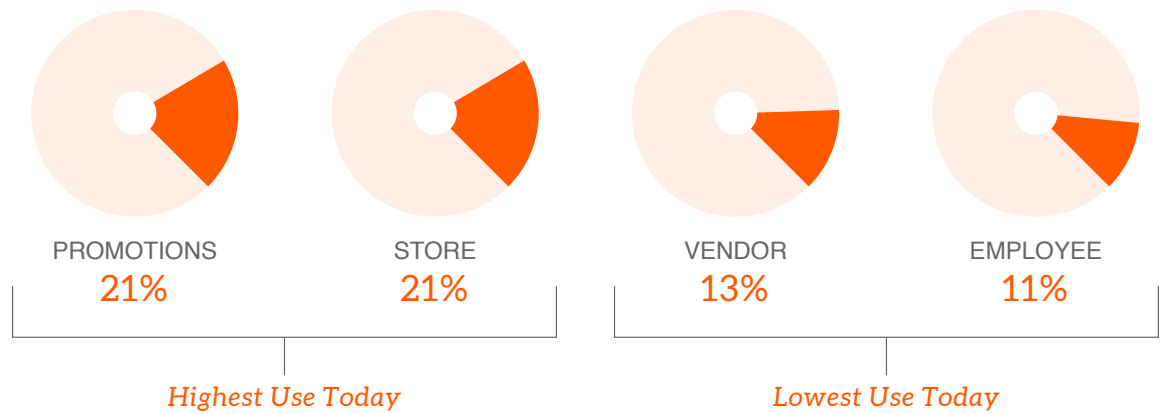
Finally, for Prescriptive Analytics (what should be done), all categories ranged between 4% and 7% except for Employee Performance (8%) at the higher end and Store Performance (3%) at the lower end.

Across all categories 78% of the sample reported less complex analytics vs 22% using Predictive and/or Prescriptive Analytics. Currently Promotions Performance is the highest in usage of Predictive and Prescriptive analytics at 27%, a full 23% higher than the average.

DIFFERENT SCENARIOS

Categories with the highest and lowest levels of Predictive Analytics

Source: IHL Group

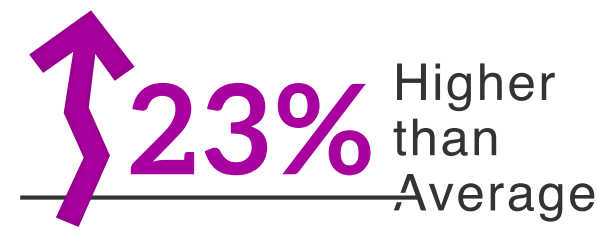


Benefits of More Advanced Analytics

As we look closer at the more advanced analytics, the first type is Predictive Analytics. Going beyond determining root causes, Predictive Analytics allows the user to see what could happen if changes are made. Examples might be changing prices and predicting demand or projecting what a raise might do for employee performance or turnover reduction. Large quantities of historical data are required to build the model used to predict outcomes. By adjusting various parameters within their data, users can view how those changes could impact outcomes, giving them a proverbial crystal ball to aid in decision making. The best part of Predictive Analytics is that with advancements in artificial intelligence and machine learning, many scenarios can be run in a relatively short time. The intelligence is in the scenarios, historical data, and algorithms used.

PROMOTIONS PERFORMANCE USES PRESCRIPTIVE ANALYTICS MOST

Source: IHL Group

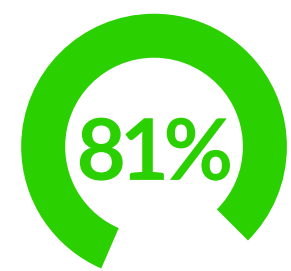


Benefits of Prescriptive Analytics

Prescriptive Analytics takes this further by not only simulating scenarios but also leveraging data science to recommend which scenario is best to achieve desired results. Then, if implemented with the additional connections to the core systems, will make the appropriate changes once given approval. Some changes can be automatically made based on the parameters set, others may require human approval. The best systems require relatively simple responses from the overseer. By harnessing the power of artificial intelligence and machine learning, these systems will continue to improve over time.

DRIVING HIGHER STORE SALES EXPECTATIONS

Source: IHL Group



81% higher sales growth expectations for 2023 for those using Prescriptive Analytics across all categories.

The Elephant in the Room

With the use of any level of analytics, but certainly with the more advanced, there are several key qualifying factors. First and most important, the historical data must be clean data that represents a single version of the truth. If the data is corrupted in any way or not configured the same from different systems providing input, the analytics simply will tell the wrong story. Or worse, will direct you to the wrong conclusion and decision. This single reason is holding back many companies from moving forward with Predictive and Prescriptive analytics. Dirty data from old or leaky systems, perhaps as the result of multiple mergers or inconsistencies from suppliers and/or employees, can derail attempts at using Predictive or Prescriptive analytics. You can use AI/ML to help clean this data as it arrives, but the bottom line is this data must be clean to get the best results. So those processes, procedures, and systems must be in place before using advanced analytics effectively. Otherwise, you simply make bad decisions faster.

Next, for Predictive and Prescriptive Analytics, you also need a great deal of data. The Predictive model is only as smart and varied as the data used to support the model creation.

Finally, for AI and machine learning to work at its best, the data types need to be tagged as to what type of data it is. Is it sales data, item codes, pricing, losses, employee numbers, etc.?

When all of these are in place, AI/ML can help achieve exponential gains. Thus, technology can create a hedge against rising inflation by being able to reduce costs and improve efficiencies.

3 CORE REQUIREMENTS FOR PRESCRIPTIVE ANALYTICS TO BE SUCCESSFUL

Source: IHL Group

- **CLEAN** data
- **ABUNDANT** data
- **TAGGED** data

Where Are Predictive and Prescriptive Analytics Adding the Most Value?

When scoping this study, we wanted to cast a wide net and better understand the analytics being used over quite a few areas. But as we began reviewing the data, certain categories showed significant financial improvements when using Predictive Analytics, particularly sales and profit growth for 2022 and projections for 2023.

The first of these categories is Customer Loyalty. Retailers that are already using Prescriptive Analytics are seeing a modest 5.6% higher profit growth for 2022. But when looking at 2023, they are expecting considerably higher sales than their competitors:

- 24.2% higher store sales growth
- 34.4% higher desktop ecommerce sales growth
- 30.4% higher sales growth in mobile ecommerce sales.

The second area showing significant impact going into 2023 is the use of Prescriptive Analytics in Supply Chain applications. These retailers are expecting a modest increase in store sales (2.2%), but much higher sales growth in their ecommerce initiatives with 26.2% higher desktop ecommerce sales growth and 10.3% higher mobile ecommerce growth than their competitors.

PRESCRIPTIVE ANALYTICS IN CUSTOMER LOYALTY PROVIDING RETURNS ACROSS CHANNELS

Source: IHL Group

For 2022
5.6%
Higher Profit Growth

For 2023
24.2%
Higher Store Sales Growth

34.4%
Higher Desktop Ecommerce Sales Growth

30.4%
Higher Mobile Ecommerce Sales Growth

Next is Loss Prevention (LP). There is no question that Organized Retail Crime and crime overall has increased significantly for retailers in recent years. There are clearly opportunities to be found for reducing consumer theft. But with LP Predictive or Prescriptive Analytics, there are also opportunities to improve performance by predicting and helping reduce employee theft, spoilage, inventory issues, and many others. Those already using LP Prescriptive Analytics are seeing 5.3% higher profit growth for 2022. Looking ahead to 2023, they are expecting 34.0% higher sales growth at the store level than competitors using only Descriptive or Diagnostic Analytics. Without question, these retailers believe they can react quicker to changes and recommendations from the system to preserve profits. In addition, the insight and visibility bring better sales opportunities at the store level.

The last category involves analytics related to Store Performance. This is a broad category and involves both consumer metrics (store traffic, heat maps, dwell times, conversion rates, cross channel conversions), but also includes the financial performance of the store financially. It is here where retailers have significantly higher expectations looking into 2023. In fact, those already using Prescriptive Analytics for Store Performance are expecting store sales growth 13x higher than those who do not.

IMPACT OF PRESCRIPTIVE ANALYTICS IN LOSS PREVENTION

Source: IHL Group

5.3%
Higher Profits in 2022

34.0%
Higher Sales Expectations for 2023

GREATER STORE PERFORMANCE

Source: IHL Group

13x Higher Sales Growth Expectations
in 2023 for those who have deployed Prescriptive for Store Performance.

Where Are Winning Retailers Investing in Prescriptive Analytics?

The impact of moving to Prescriptive Analytics has added to the performance of winners. We looked at two measures: Sales Growth Winners (Sales Growth more than 15% in 2022) and Profit Growth Winners (Profit Growth more than 15% in 2022). To review, we will look at each category of analytics to show the impact.

First is Loss Prevention Analytics. Sales growth winners are 34% more likely to be using Prescriptive Analytics already and 35% more plan to be using by the end of 2023. For profit growth leaders, the number of retailers planning to use Loss Prevention Prescriptive Analytics rises to 55% by the end of 2023.

Next, we looked at Employee Performance Analytics. This was tied for the highest level of deployment already among Profit Winners and is 38% higher than the average retailer. Further, 45% of Profit Winners plan to have Employee Performance Prescriptive Analytics installed by the end of 2023, 40% higher than the average retailer in our study.

Promotions and Pricing Analytics are seeing significant growth in the next year, with 3x more of the Profit Winners and 50% more of the Sales Winners choosing to deploy Prescriptive Analytics in the category. In fact, 53% of Sales Growth Winners plan to be deployed within the next two years.

ALL ABOUT PROFITS IN LOSS PREVENTION

Source: IHL Group



55% of Profit Winners plan to use Prescriptive Analytics for Loss Prevention by end of 2023.

It is the Merchandise/Category Management area where Prescriptive Analytics are seeing the greatest growth for 2023. Sales Winners are deploying at a rate 21% faster than others and Profit Winners 45% faster than average performers. A whopping 55% of Profit Winners are planning to deploy Prescriptive Analytics in Merchandise/Category Management in the next 12 months, a huge endorsement by some of the most profitable retailers.

The last category showing huge growth is Store Performance Prescriptive Analytics. Among Sales Winners, 53% plan to have installed by the end of 2023. Among Profit Winners the number is even higher, with 64% of Profit Winners planning to have Store Performance Prescriptive Analytics by the end of 2023.

GREATEST GROWTH IN PRESCRIPTIVE ANALYTICS

Source: IHL Group

Fastest growing retailers are deploying Prescriptive Analytics in Merchandise/Category Management at a rate of

21% HIGHER

than any other category.

Highest profit growth retailers deploying

45% FASTER

in Merchandise/Category Management than average retailers.

Key Solutions Being Deployed

Store Performance Prescriptive Analytics are the most planned analytics by the end of 2023. The areas where these are being deployed are the following. The first is store traffic, measuring not only the occupancy level but also the traffic patterns for staffing purposes. Next is leveraging queue analytics where algorithms and cameras combine to deliver scalable measurements of checkout performance so that retailers can make operational changes, watch how those changes impact sales, and then make objective, data-driven decisions that improve the overall performance of the stores.

The next highest level of planned deployment of Prescriptive Analytics is in Customer Loyalty. Whenever we do our annual study, personalizing the customer experience rates as one of the top priorities. Prescriptive Analytics in this category is what truly brings this about. For years, loyalty programs only offered blanket incentives or personalized offerings based only on previous purchases. Prescriptive Analytics allows for the inclusion of external data as well as historical data to provide offers for what they would have bought if offered, providing innovative solutions to their clients that they may never have considered. They allow retailers to unify their digital and non-digital strategies and engage customers on their own terms. In a retail world where it often seems the discounts are creating a "race to the bottom," Customer Loyalty Prescriptive Analytics can help not only increase the lifetime value of a consumer but help create that crucial word-of-mouth from consumers that says, "They get me."

PRESCRIPTIVE PROMOTIONS AND PRICING

Source: IHL Group

2022 profit winners plan to deploy advanced analytics in 2023 for Promotions and Pricing at a rate

3X FASTER

than average retailers.

As mentioned in the previous section, Pricing and Promotions Prescriptive Analytics are rapidly being deployed by both Sales and Profit Winners in the next year. There are several reasons for this. First, consumer behavior and demand due to inflation is changing faster than most retailers can react manually. Second, broad promotions are less effective and often unprofitable if not personalized. When done correctly, retailers can enjoy up to 12% higher sales and up to 20% higher profits. Third, growth in competition and cross-channel retail is bringing new challenges from which retailers must react in real-time. Thus, when deploying Prescriptive Analytics in Pricing and Promotion it's important to include artificial intelligence to apply intelligent pricing across zones and categories to maximize sales and margins. This allows the retailer to deploy a holistic solution of lifecycle pricing to highlight the benefits for optimal pricing, efficiency and greatest customer satisfaction.

Merchandising and Category Management Prescriptive Analytics are the next highest planned install by the end of 2023. Retailers are quickly focusing on items as broad as merchandise allocation and space planning optimized for regional or even neighborhood stores. But optimizing inventory in stores is just the beginning. Omni-channel fulfillment at scale requires staying on top of countless threats and opportunities in your supply chain, while managing to keep in stock what the consumer wants to buy, when they want to buy it. Prescriptive Analytics in this area allows for automatic recognition of anomalies anywhere along the inventory journey, directly assigning simple, prioritized tasks to the right team members to ensure that in-stock position.

PRESCRIPTIVE ANALYTICS USE BY 2024 FOR HIGHEST PROFIT GROWTH RETAILERS

Source: IHL Group

