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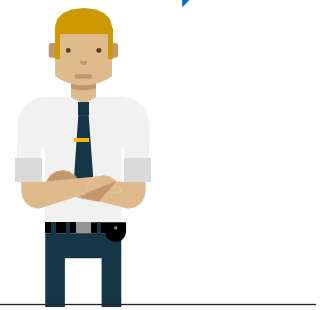
TRANSFORMING YOUR BUSINESS WITH DATA

SKU Max: Inventory Assortment Optimization

Managing inventory correctly isn't Easy

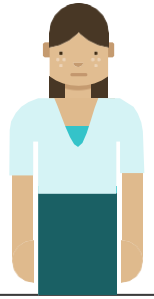
Technology provides solutions to existing and emerging problems

Keeping up with rapidly changing customer preferences feels out of reach with my current forecast methods



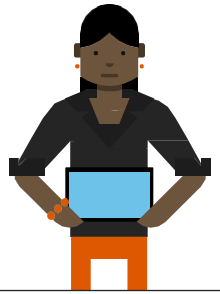
Merchandising Director

I need to be able to meet demand anywhere, on any channel, but I'm hindered by disconnected processes



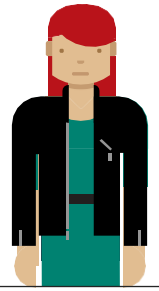
COO

I want products to delight customers, but we lack up-to-date insights into consumer baskets



Sales Director

Providing more personalized, relevant offers to clients would require mobile analytics that I don't have



Sales Associate

I want technology to be a growth engine for the business, but legacy systems hold me back

Analytics Director

18.5%

growth in the number of SKUs stored in distribution centers in 2015[4]

4.2%

increase in US manufacturers' and trade inventories from 2017-2018[3]

143%

of inventory per total sales is the amount of stock US retailers are sitting on[1]

44%

of CPGs don't have adequate resources to interpret analytics outputs[2]

1 http://www.scdigest.com/assets/newsviews/15 04 23 1.php?cid=9231

2 EKN Survey 2016

3 https://www.census.gov/mtis/www/data/pdf/mtis_current.pdf

4 http://www.supplychain247.com/article/2015_warehouse_dc_operations_survey_results

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SKU Max: Optimum shelf

Challenges

- Understanding customer preferences
- Limitations on traditional assortment
- Managing rapidly changing portfolios
- Ensuring the right SKUs are stocked

Analyze past SKU performance by market segment

Leverage latest market trends and SKU insights

Capabilities

- Identify best-fit products for markets
- Ensure the right distribution of SKUs
- Manage SKU lifecycles to reduce bloat
- Equip sales teams with SKU insights

Tailor store/outlet product assortment

Optimize category management, store and shelf space

Outcomes

Right products on shelves

Increased sales volume and revenue

Unique and **dynamic store assortments**

Interpretable **proposals for end users**

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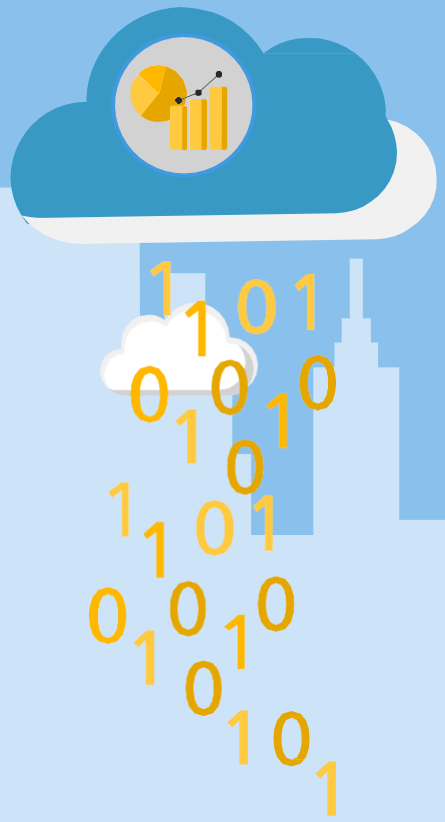
Solution Charter

-DELIVER IMMEDIATE BUSINESS VALUE THROUGH ADVANCED ANALYTICS
-REDUCE EXCESS INVENTORY AND MATCH PRODUCTS WITH EACH MARKET
-BUILD ANALYTICS INTO OPERATIONS

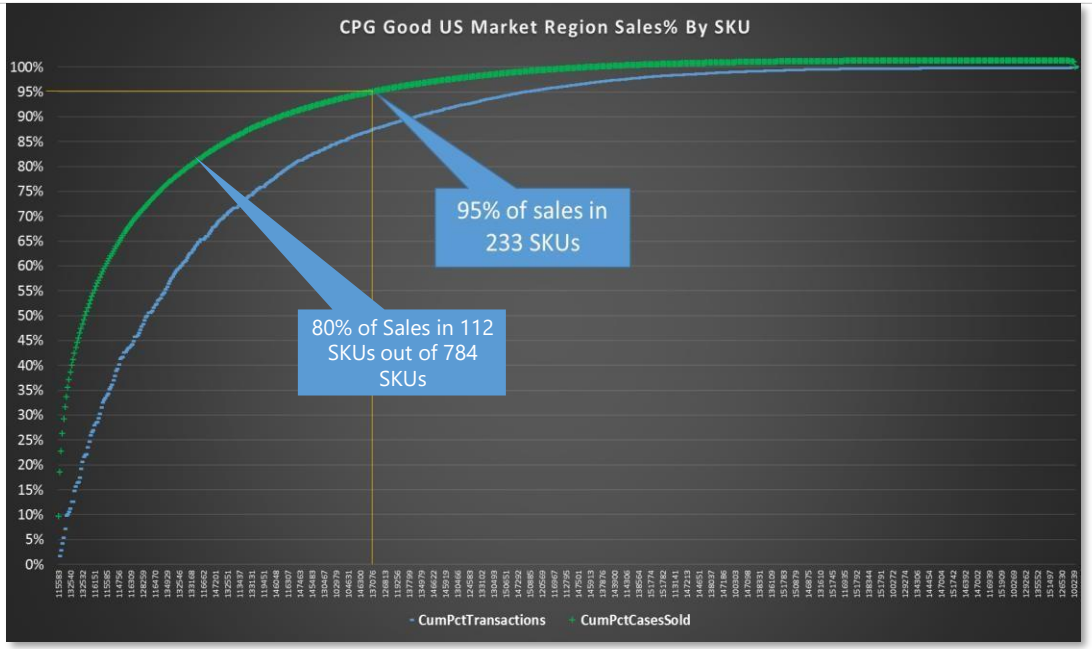


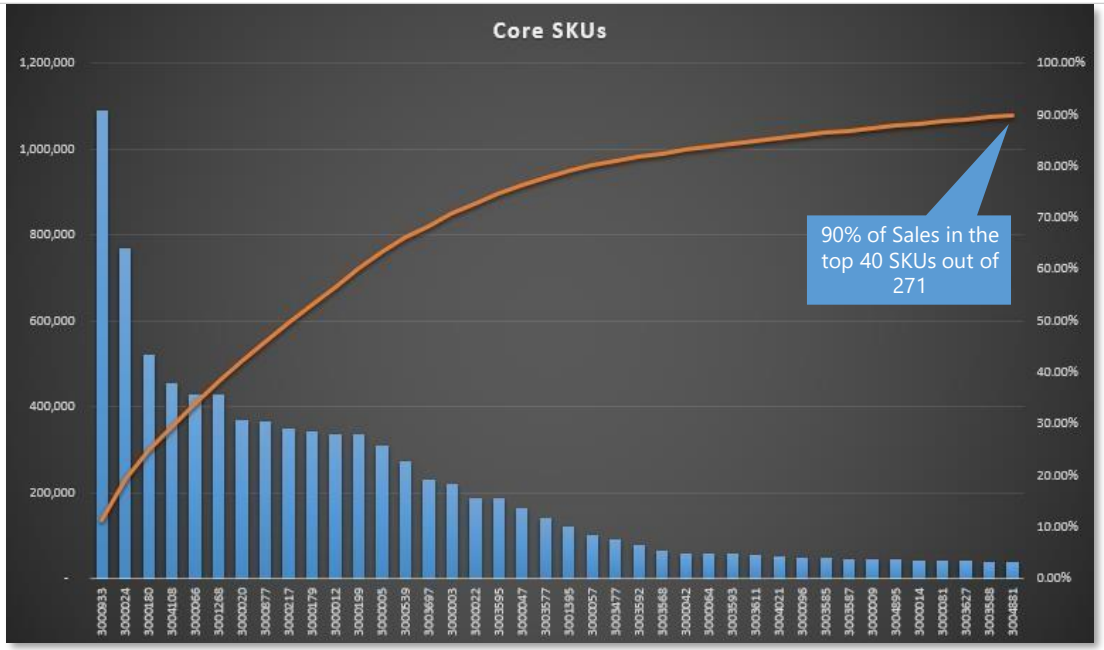
Leverage proven modeling techniques for immediate operational business value

Tap into Azure Synapse cloud analytics capabilities without worrying about integration and operations

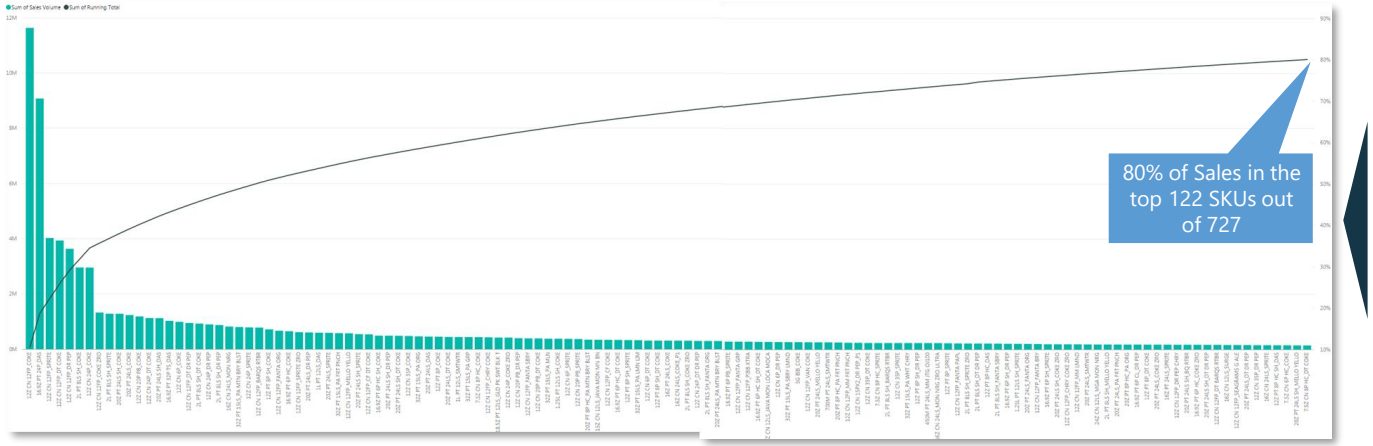
Ensure each outlet has the best portfolio of products to maximize sales and profit

Sales are not equally distributed across SKUs





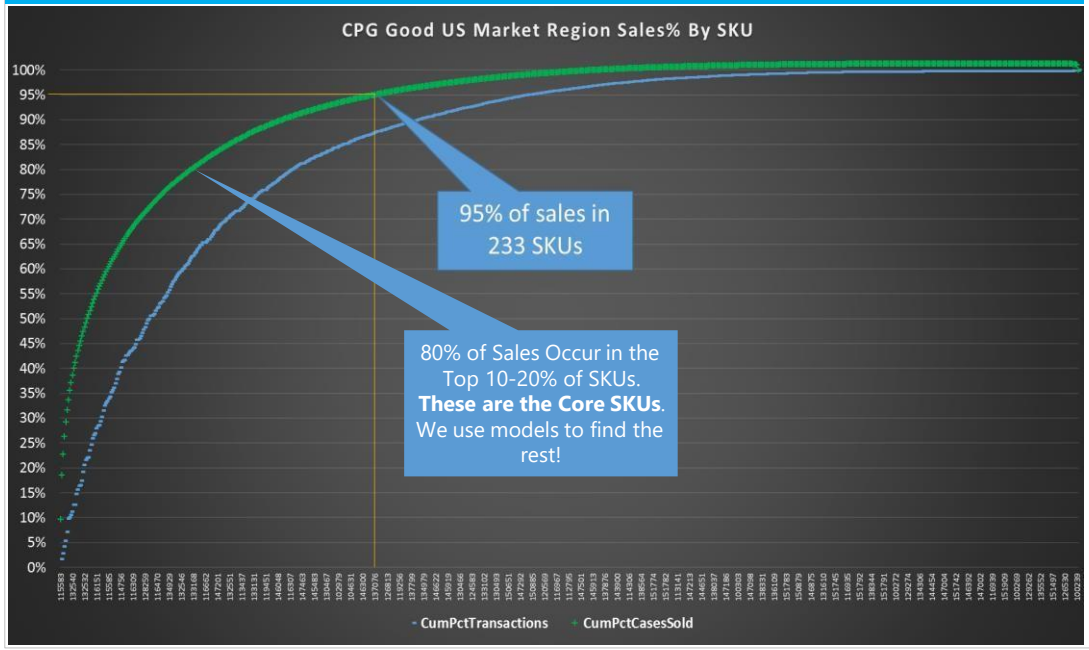
80-90% of SKUs generate nominal sales volume

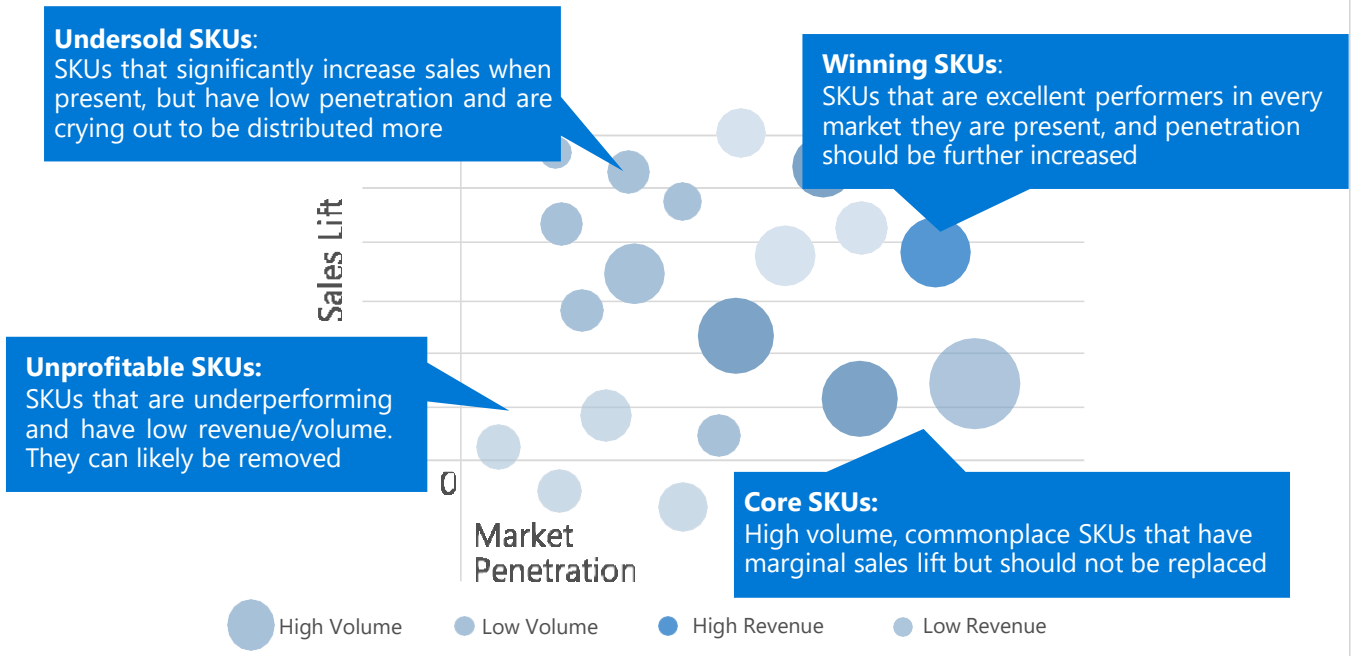


Even when filtered to only Core SKUs, sales are still very skewed!

SKU Optimization Classifies SKUs into 4 Groups

Sales Distribution by SKUs





Four SKU Categories

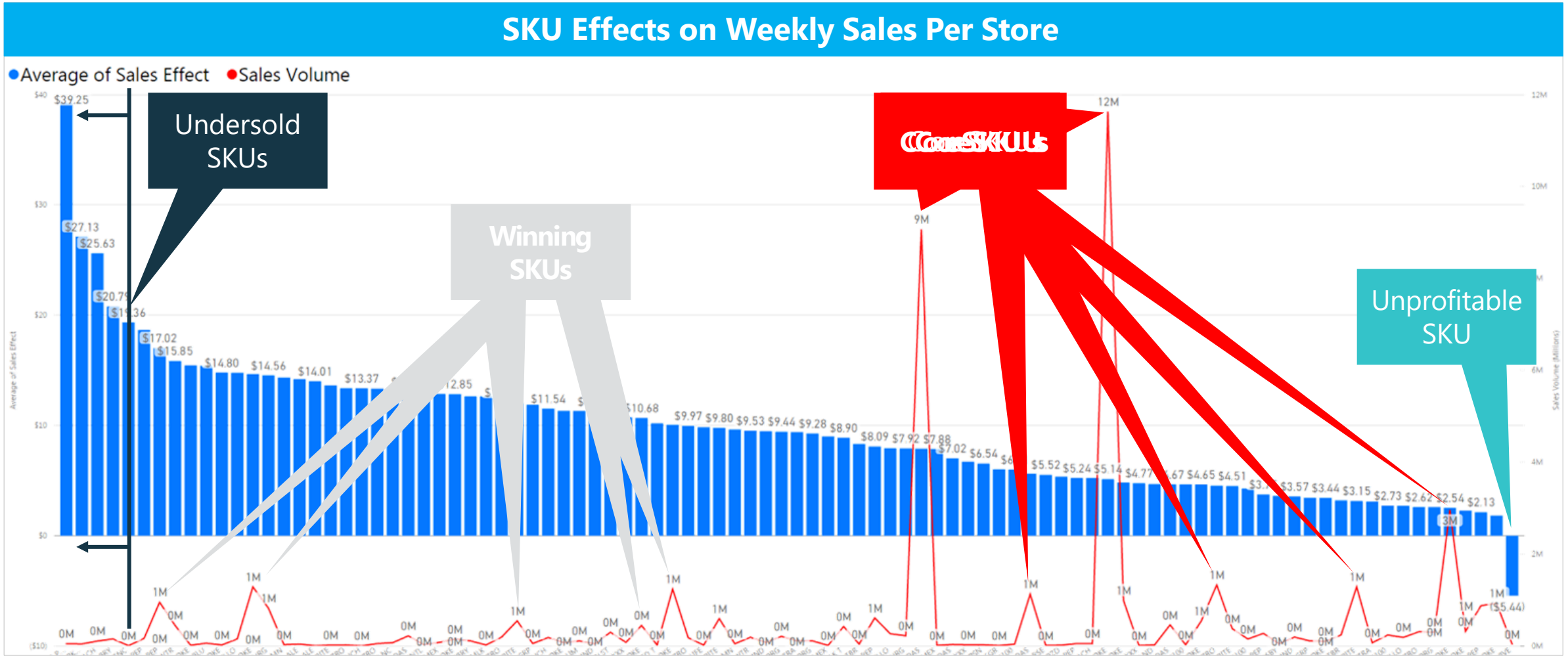
Core SKUs: Widely distributed, high volume SKUs

Undersold SKUs: Low distribution, high performing SKUs

Winning SKUs: Moderate distribution, high performing SKUs

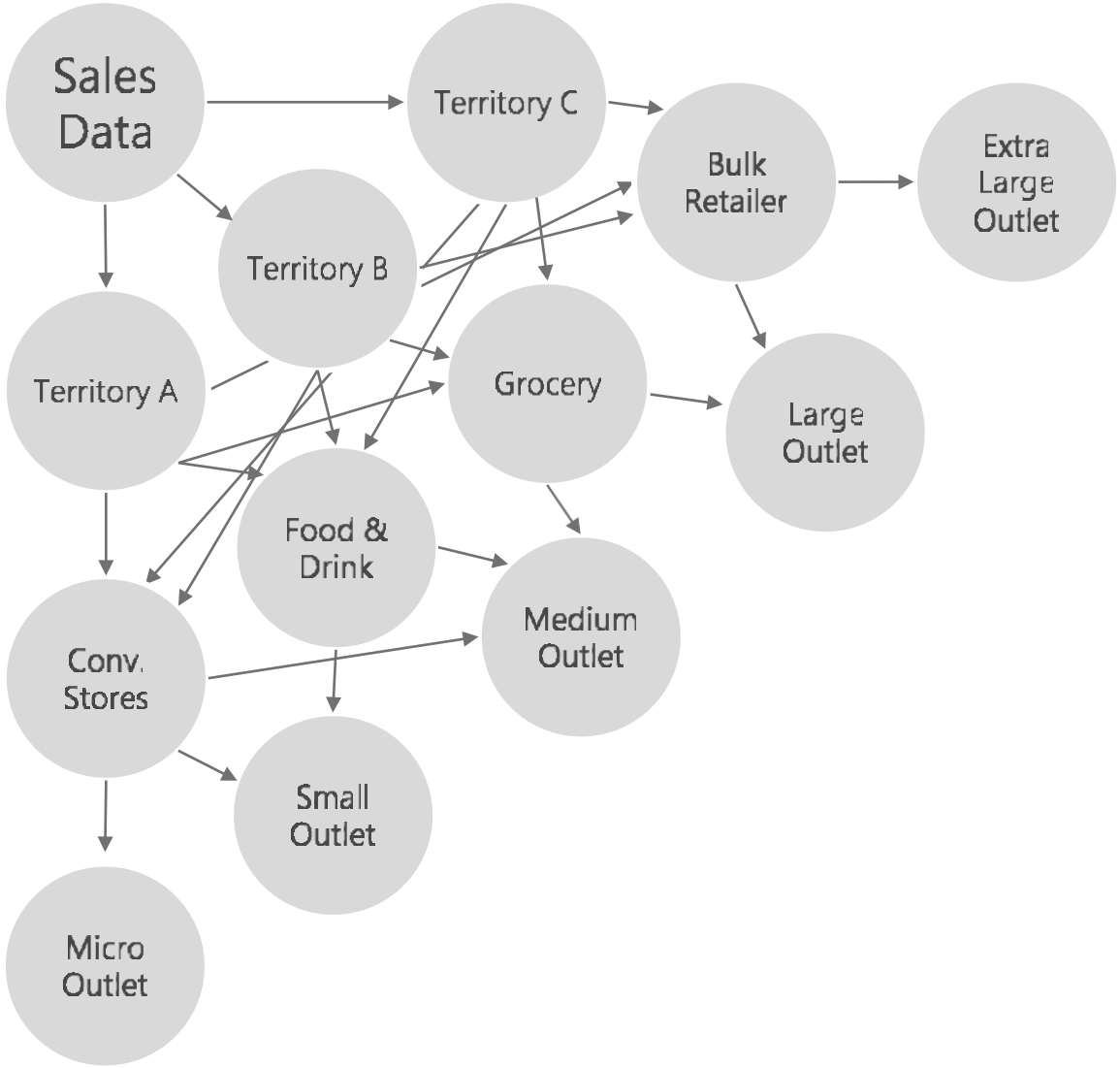
Unprofitable SKUs: Low distribution, low performing SKUs

SKU Sales Effects Identify SKU Categories



Example SKU Portfolio for Large Convenience Stores in California

SKU Optimization using Machine Learning

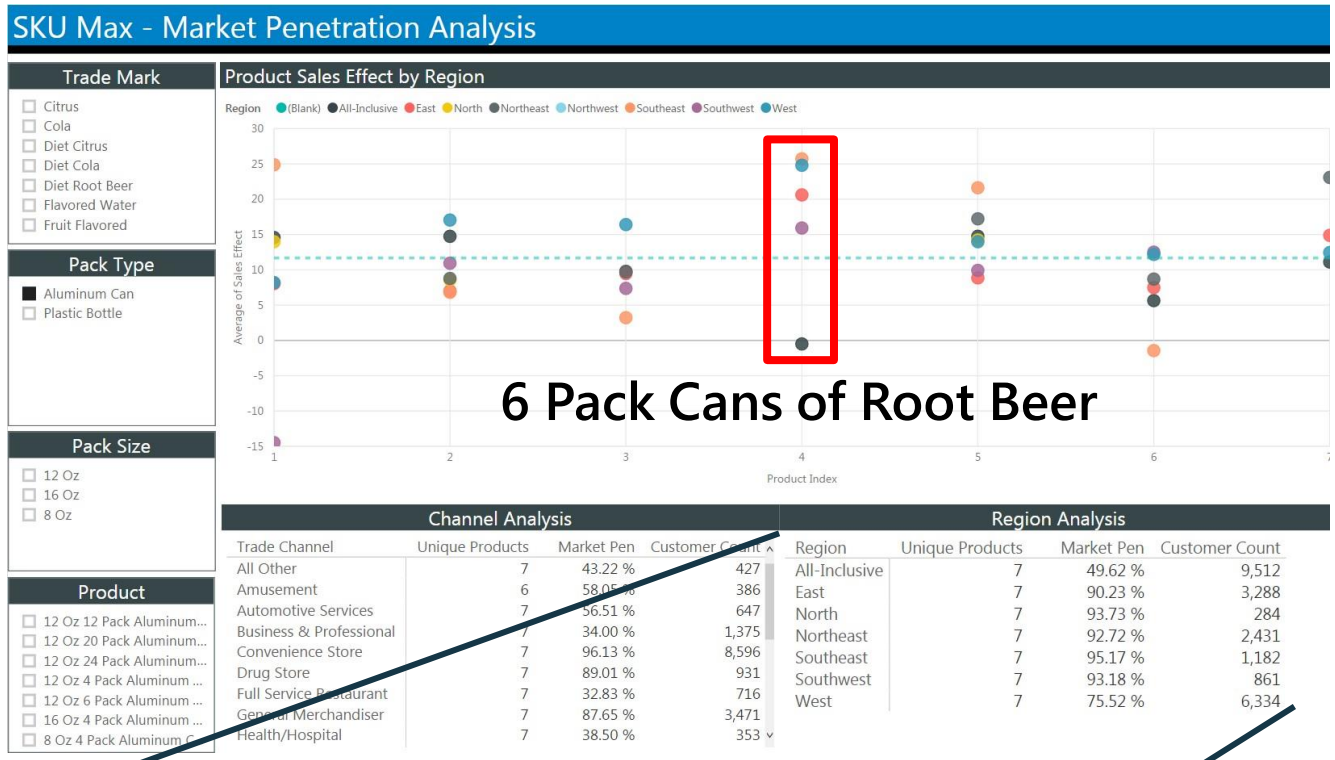


…It's common to optimize SKUs using sales analysis and Business Intelligence, but many SKU portfolios are too large and complex to be effectively managed using traditional methods, so we segment sales outlets using a variety of traits, then use Machine Learning to measure SKU performance

SKU Optimization using Machine Learning

Insights from analyst dashboards

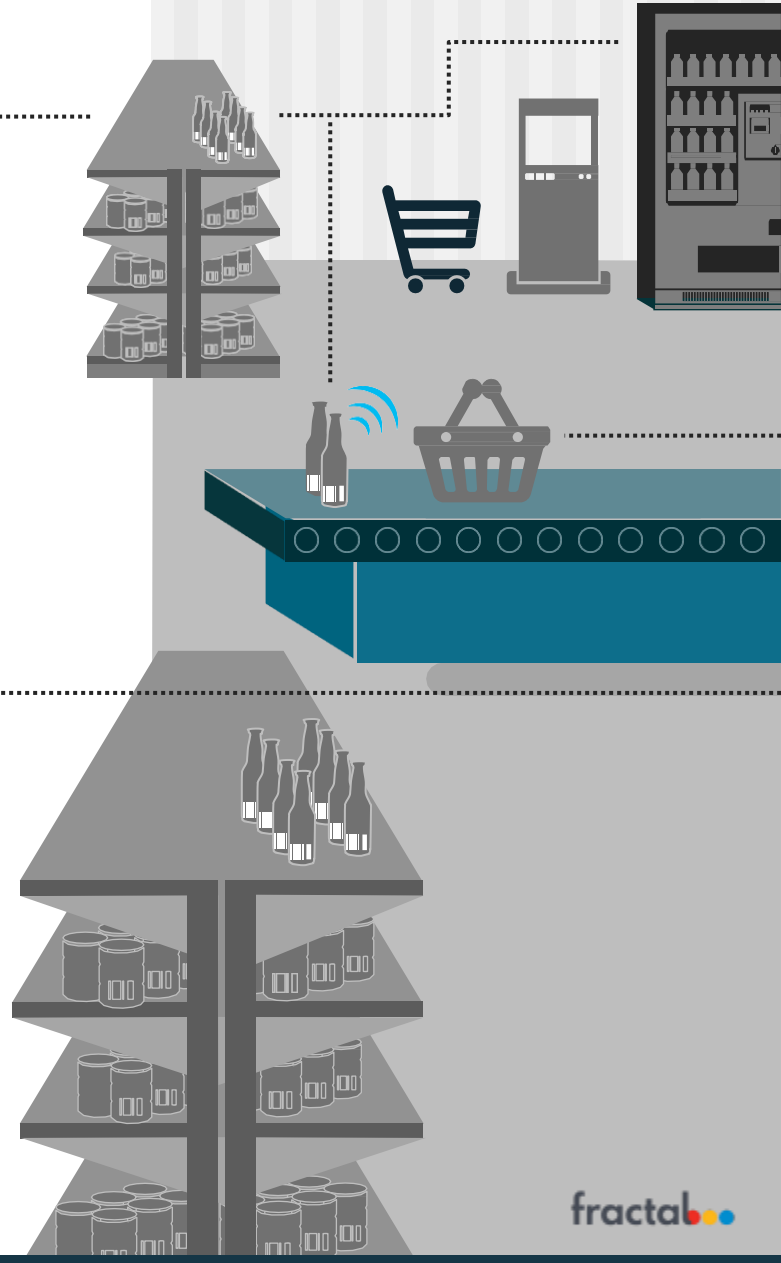
Analytics teams are equipped with new tools for decision making



Region Analysis

Region	Unique Products	Market Pen	Customer Count
All-Inclusive	7	49.62 %	9,512
East	7	90.23 %	3,288
North	7	93.73 %	284
Northeast	7	92.72 %	2,431
Southeast	7	95.17 %	1,182
Southwest	7	93.18 %	861
West	7	75.52 %	6,334

6 Packs are Significantly Outperforming Other Packages in Thousands of Stores



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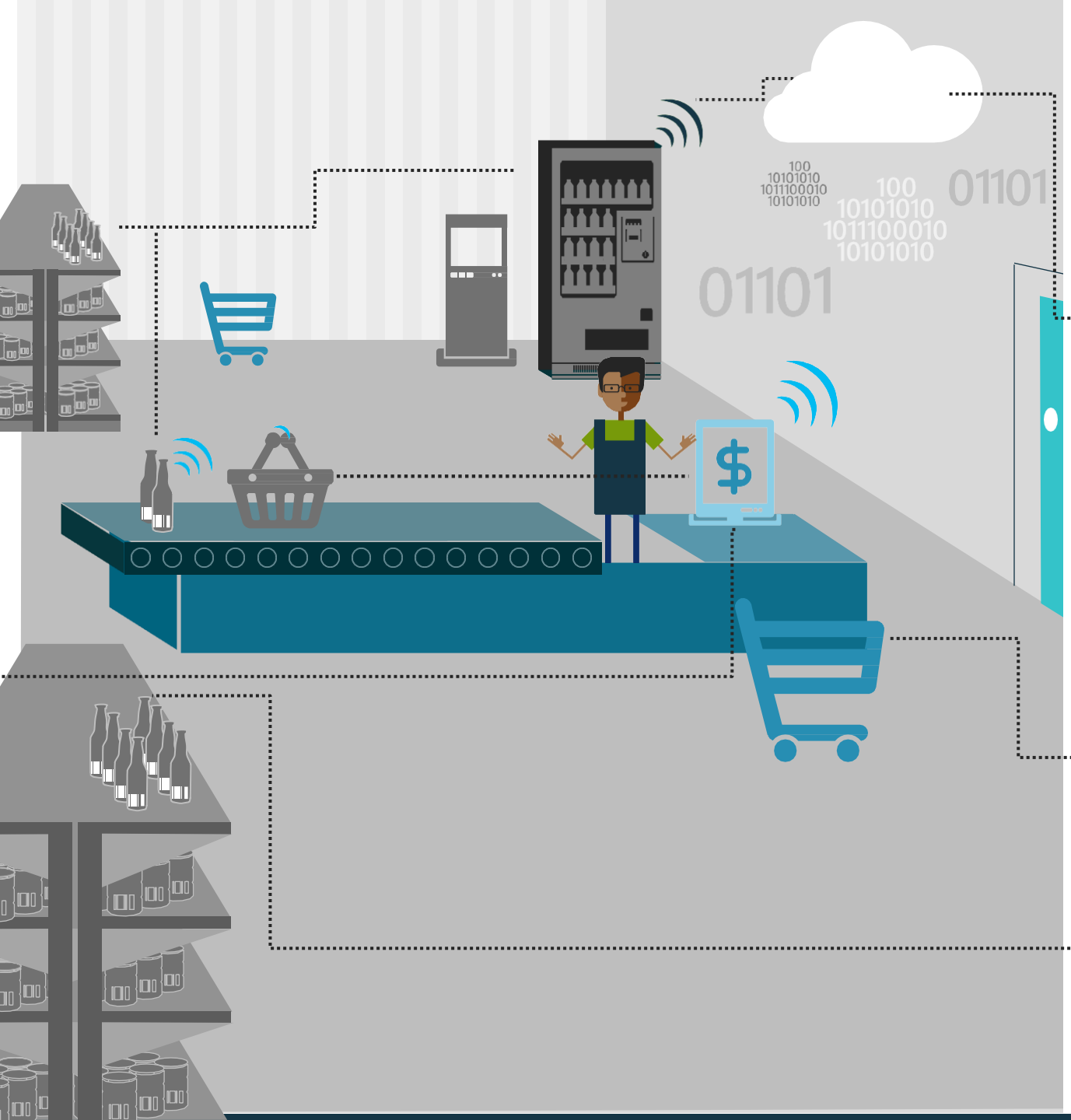
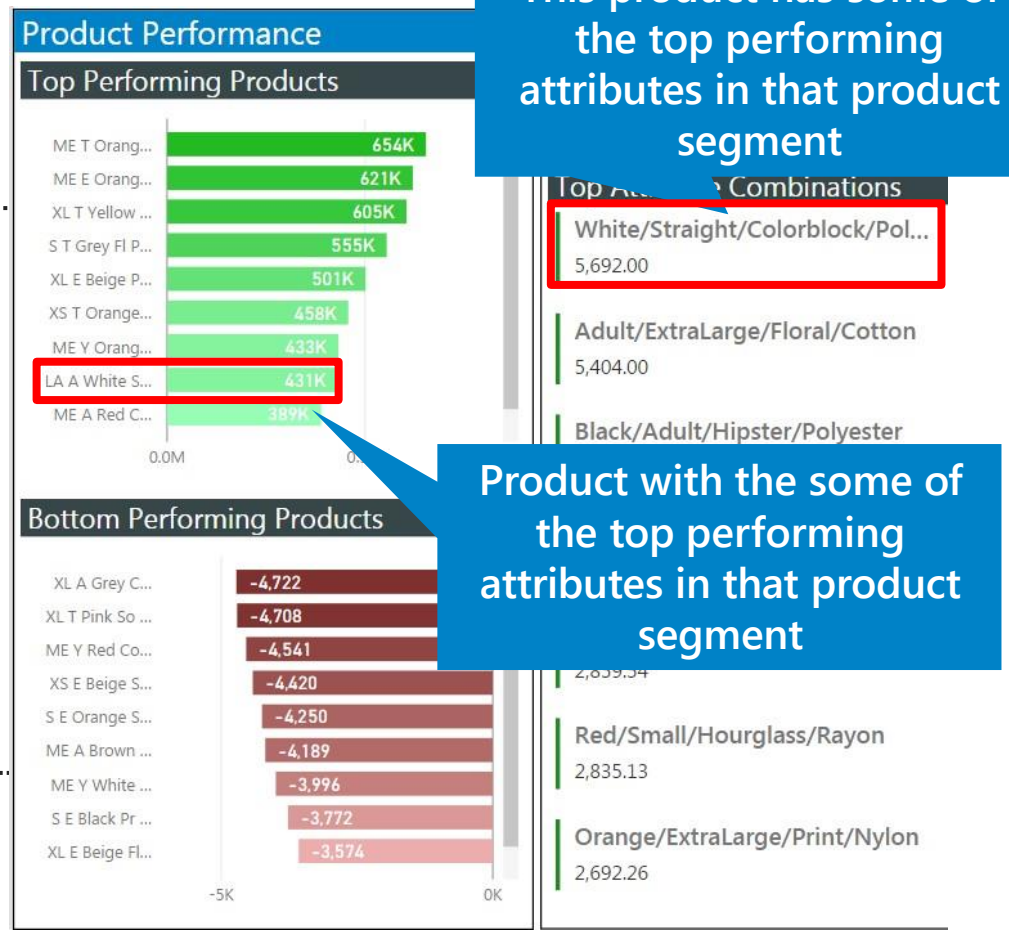
Dive into product DNA





This product has some of the top performing attributes in that product segment

Product with the some of the top performing attributes in that product segment

Now that the buyer knows which product attributes are trending, they can work with their suppliers to order products that meet the criteria

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Dashboards in the hands of sellers

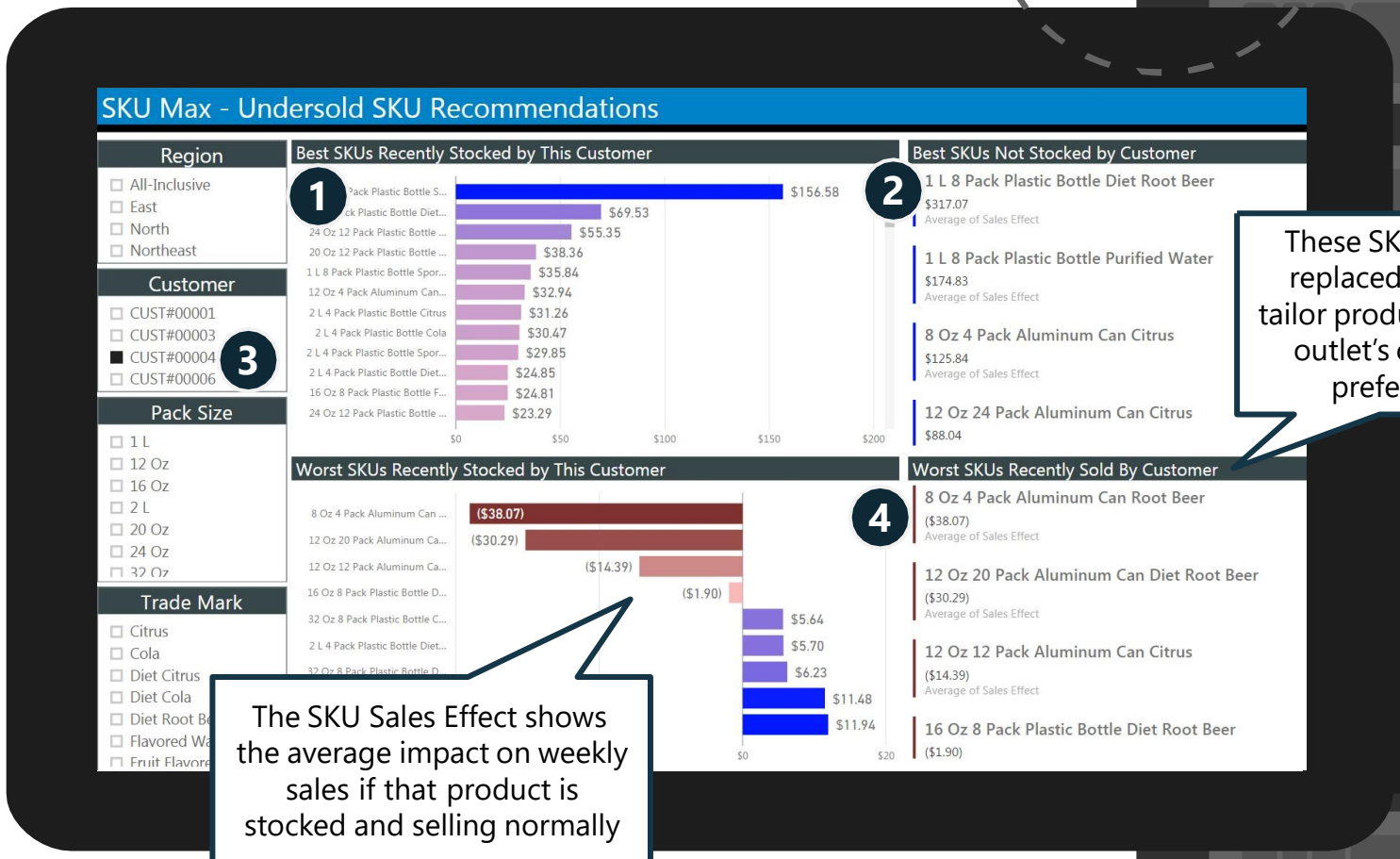
Each seller is equipped with a new tool to encourage sales

1 **Quickly identify top performing SKUs**
The dashboard provides an ordered list of the average effect on weekly sales for each SKU across the stores in each sales outlet group.

2 **Know exactly which good SKUs are missing**
The seller can quickly identify which SKUs are good candidates to replace underperforming products on the shelf.

3 **The customers for each day are easily selected**
With dashboards refreshed each day, the seller need only select from among the customers they are going to visit that day. (IDs are used here for anonymity)

4 **Low performer SKUs are ideal removal candidates**
These SKUs may just be a bad fit for customer preferences in that market, and are better stocked elsewhere or less frequently.



Dashboards for buyers and merchandisers

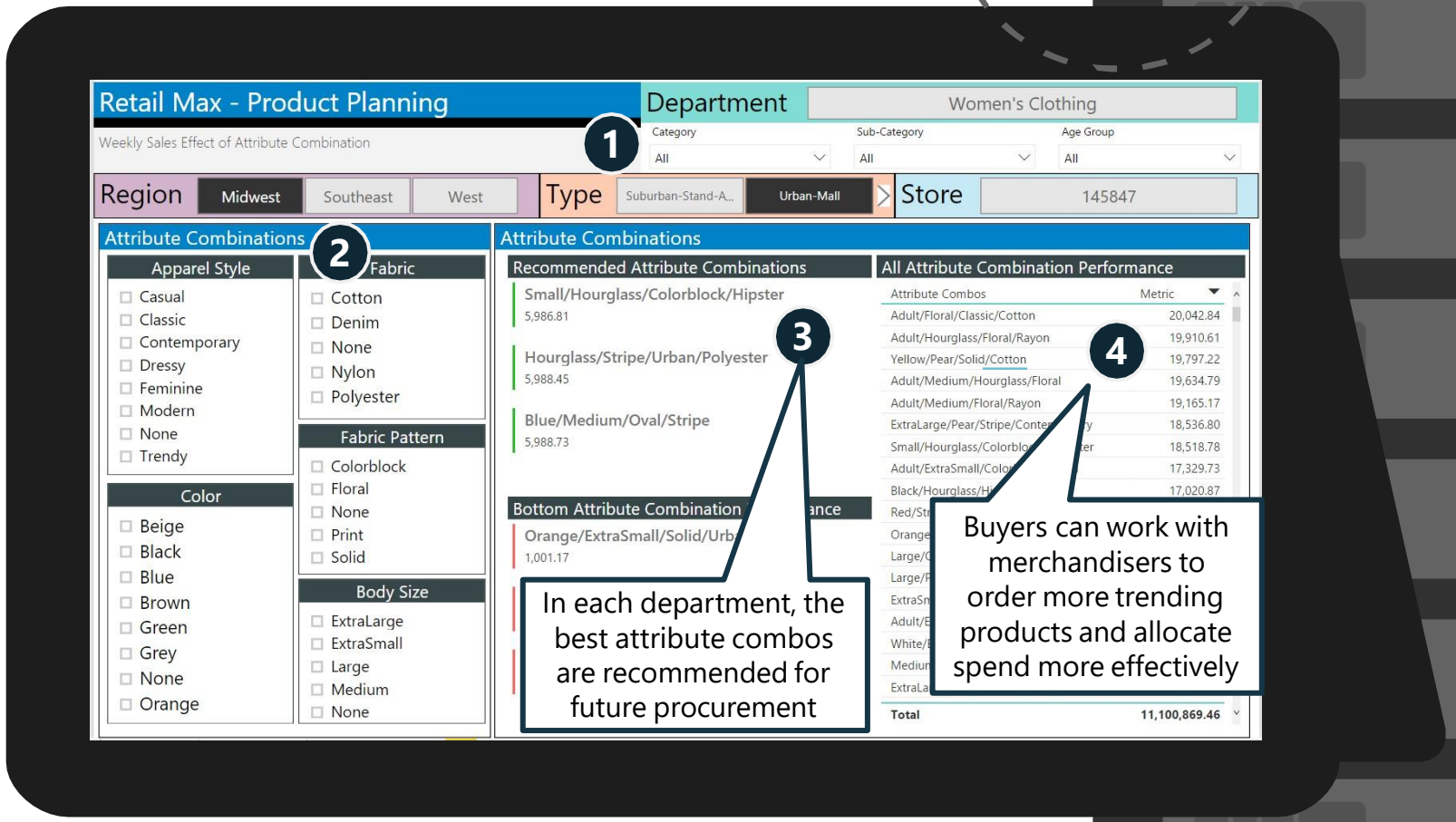
Retail buyers can quickly identify trending products to order

1 Quickly Analyze Each Market and Department
The dashboard equips buyers with the ability to drill into each market or product segment with tailored Machine Learning recommendations.

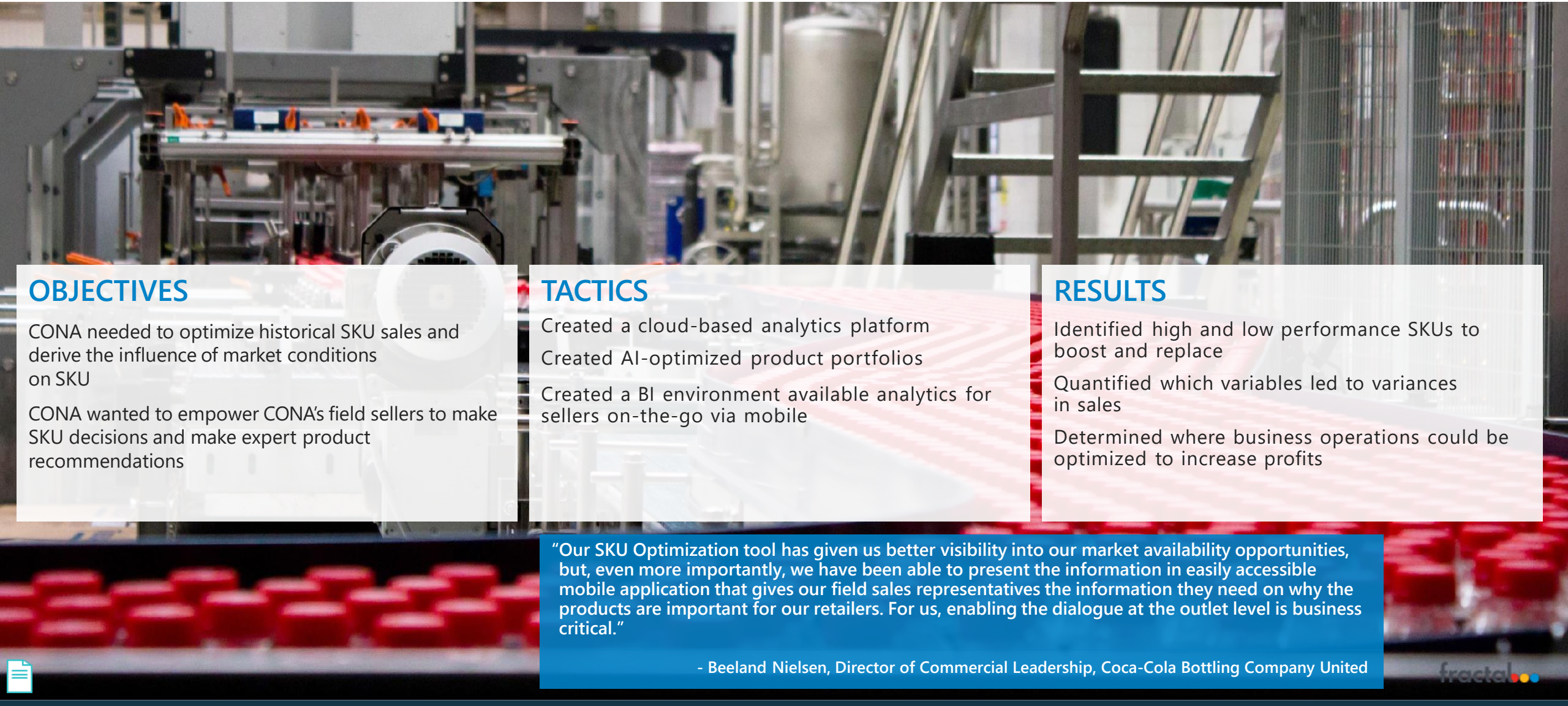
2 Identify Optimal Product Attribute Combos
SKUs in Retail may come and go, but by analyzing product attribute combinations, we sequence the DNA of successful products so new items with trending DNA can be ordered.

3 The Best Products Drive Recommended Buys
Successful products have common attributes, which can be grouped and modeled against other groups over time, recommending what is trending in a given market or department

4 Weekly Sales Effects
Every attribute combo provides an estimated sales impact if SKUs with those attributes are sold in the store, identifying winners, losers, and indicating recommended purchase volumes



North American beverage bottlers drive value by equipping sellers with Machine Learning



OBJECTIVES

CONA needed to optimize historical SKU sales and derive the influence of market conditions on SKU

CONA wanted to empower CONA's field sellers to make SKU decisions and make expert product recommendations

TACTICS

Created a cloud-based analytics platform

Created AI-optimized product portfolios

Created a BI environment available analytics for sellers on-the-go via mobile

RESULTS

Identified high and low performance SKUs to boost and replace

Quantified which variables led to variances in sales

Determined where business operations could be optimized to increase profits

"Our SKU Optimization tool has given us better visibility into our market availability opportunities, but, even more importantly, we have been able to present the information in easily accessible mobile application that gives our field sales representatives the information they need on why the products are important for our retailers. For us, enabling the dialogue at the outlet level is business critical."

- Beeland Nielsen, Director of Commercial Leadership, Coca-Cola Bottling Company United

Large Mexican and Latin American bottler leverages big data for business driver understanding and SKU optimization using Machine Learning and AI

CHALLENGES

Understand true reasons behind business performance

Quantify impact at a store level

Enable interventions for SKU assortment optimization & operations activities

Understand how to optimize business results

SOLUTIONS

Consolidated data from dozens of sources

Unified data in a single data model for testing the influence of hundreds of potential factors

Recommended SKUs based on models

RESULTS

Identified the top influencers of sales in each region, channel, down to the customer level

Improved SKU assortments in key channels

Week to week adjustments and interventions possible through powerful reporting and granular pulse of the business analysis in each market

"Over time, this advanced analytics solution with its statistical approach to big data will transform the way we take business decisions through all business processes."

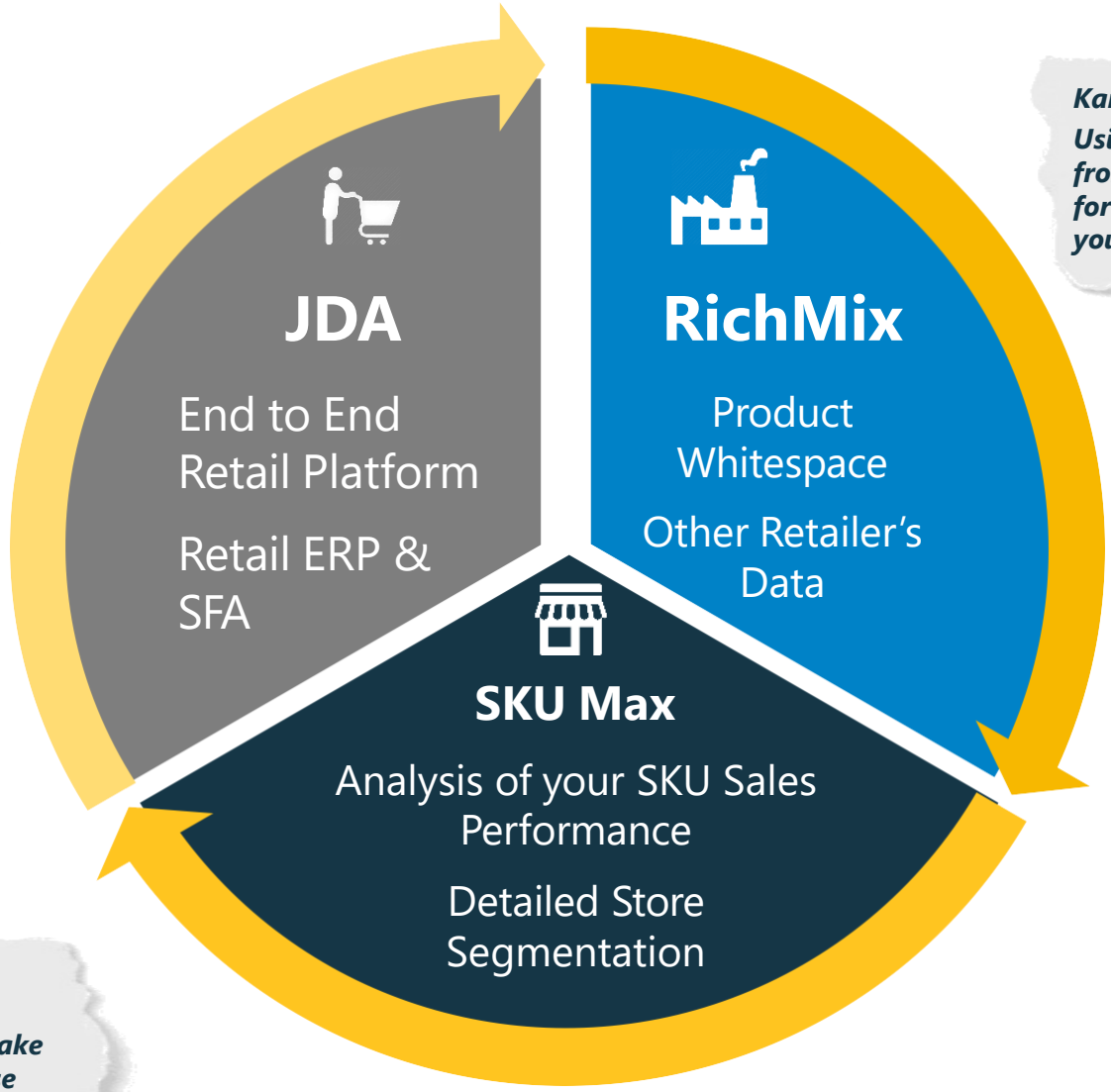
- Ruben Dario Torres Martinez, IT Manager, Arca Continental

"When we started with this project, we were searching for new and improved ways to serve our clients and consumers while boosting profitability. We needed to better use the data we already had and gain a more comprehensive understanding of sales variations and correlations between multiple variables."

- Lizeth Refugio Salas, Revenue Growth Management Chief, Arca Continental

How SKU Max differs from the competition

JDA's Value Proposition:
A retail focused platform for data and customer management, with various modules for analysis and specific workloads.



Kantar RichMix's Value Proposition:
Using "Transferrable Demand Curves" from other retailer's data, we can forecast the effect of a SKU change in your market.

Fractal's Value Proposition:
Using empirical analysis of your sales data, we can make recommendations of SKUs that have proven to increase sales in the stores in that market.

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Why is better SKU optimization needed?

Business Challenges

Managing SKU portfolios is typically done at a high level, on intervals, allowing for dog SKUs to sit on shelves not performing, and star SKUs to sit on trucks unable to shine.

Retailers often have little insight into what about their products makes them desirable in a particular market. Our understanding of Product DNA allows retailers to make more informed purchasing decisions for each market.

Organizations simply do not have the time or the manpower to model for every market and provide their sellers with up to date information on what products are trending and performing well with their customers.

Key Questions

Are there simple SKU decisions that can increase profits?

How can we see if each SKU “pulling its own weight?”

Do slow moving SKUs hurt, do nothing to, or help, total sales?

Is there a better way to measure SKU performance than looking at historical sales by SKU?

Frequently Asked Questions

Data Questions

Q: How much data do I need for this solution to work?

A: We look for at least 2 years of sell-in sales data, but beyond that, less data only means less segmentation

Q: I'm a retailer and all my stores are the same, why would I want to segment them? Does this still work?

A: Yes, we may use clusters of stores compare markets to see which products are preferred in that market, but the real answer is that we will tailor the data to you!

Q: I only have a few customers because I don't sell direct to the stores where consumers purchase them, how is this solution valuable for customers like me?

A: Our key goal is to generate enough data for our algorithm to segment your data and still work. That can be done even with as few as 10 customers.

Methodology Questions

Q: How does this solution compare to JDA or other providers?

A: SKU Max is not a complete platform, but addresses a specific, high business value problem in a differentiated manner

Q: Under the hood, what sort of algorithm do you use?

A: We use a multivariate regression model to analyze the presence and absence of various SKUs in each sell-in transaction

Q: What sort of information do you need from my team?

A: We need the overall size of the data, and to know how you would like to segment the data into peer groups for analysis

Q: What is the estimated timeline for implementation?

A: Could range from a few hours to a few weeks depending on customizations requested. Basic configurations are fast!

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Fractal | Intelligence for Imagination