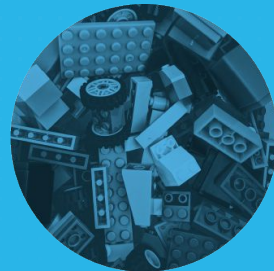




MARKET BASKET



AGENDA

Introductions

Overview: Optimizing Market Basis Analysis for Slowflake

Live Demo

Conclusion / Q&A

TEAM SNOWFLAKE



Rosemary Hua
Global Head of Retail & CPG
Snowflake Computing



Robert Guglietti
Principal Architect
Snowflake Computing
frostbyte



Vernon Tan
Manager
Snowflake Computing
frostbyte



RETAIL & CPG LANDSCAPE AT SNOWFLAKE

Consumables



Home



Electronics



Retail & eCom



CONTINUED



Fashion

URBAN OUTFITTERS
asics Neiman Marcus
RENT THE RUNWAY



Enthusiast

Office DEPOT  YAMAHA



Fulfillment


DOORDASH
 instacart



Retail Data Services

 Numerator  ATLAS
Strength in Numbers
Rakuten **ibotta**

Multiple Sub-Industries

Build a 360-degree view of customers across all channels to personalize experiences, increase conversions, and improve loyalty

Improve supply chain planning and inventory management

Anticipate item availability and forecast demand with predictive analysis

Determine and optimize pricing models

Retail and Wholesale

Perform in-store and regional reporting on performance and inventory levels

Analyze and share promotional data with CPG partners

Reduce costs related to product waste and staffing

Consumer Packaged Goods

Increase revenue through targeted marketing and in-store execution

Integrate shopper, retail, social media, and advertising data to understand consumer trends

Exchange data with retail and advertising partners

Ecommerce

Track and analyze buying processes and shopping cart abandonment

Offer real-time recommendations and promotions

TRENDS AND DYNAMICS SHAPING RETAIL

Marketing & Customer

**Pressure to deliver
personalized experiences
to the customer**

Customer 360
Marketing Activation

Merch Analytics

**Inconsistent, incomplete
or outdated performance
reporting methods**

Daily Sales Reporting
Competitive Price Dash
Add-To-Cart Conversion %

Supply Chain

**Channel choices change
day-to-day**

**On-demand delivery is
now expected**

COVID19 Out-Of-Stocks
Inventory Turnover Rate
Item Availability %

LIVE DEMO

**WHAT IS
MARKET BASKET?**

**I'LL TELL YOU WHAT
MARKET BASKET IS!**





In the retail business, it's important to understand consumer behavior to make the best decision about how to sell and promote products



This enables retailers to make informed decisions about cross aisle promotions, promoting sales across categories, and ultimately influencing a customer's average basket size



Understanding that people tend to buy plastic cups and ping pong balls, retailers can group these items together, across aisles or sections that may otherwise be very separate - helping customers find these products faster, and increase their likelihood of purchasing them together



Sometimes Market Basket Associations are obvious - other times they are not - and sometimes they are influenced by global or economic trends



In order to stay on top of these things, it is important to have not just all of your data in one place, but even data that you would source externally that can improve the analytic value of your market basket associations

DATA DRIVEN PRODUCT PLACEMENT :



MARKET BASKET 101

Rule Based Association - Key Concepts

Rule: {beer, cups} → {ping pong balls}

Support:

Frequency of item set

ie. how many times beer and cups are found together

Confidence:

How often the rule has been found to be true

ie. % confidence that when people buy beer and cups, they also buy ping pong balls

Lift:

Prediction of antecedent and consequent - a score for whether one product has a positive or negative association with the other

ie. beer and cups has a positive association with ping pong balls

Conviction:

Ratio of expected frequency that event 1 occurs without event 2

ie. beer and cups have a low conviction because ping pong balls are seldomly bought with beer and cups randomly

REQUIREMENTS AND CHALLENGES

Lots of Data

Long history, transaction level detail for statistical significance

Computing Power

A collection of 10,000 items can generate 1,000,000,000 rules

Scalability

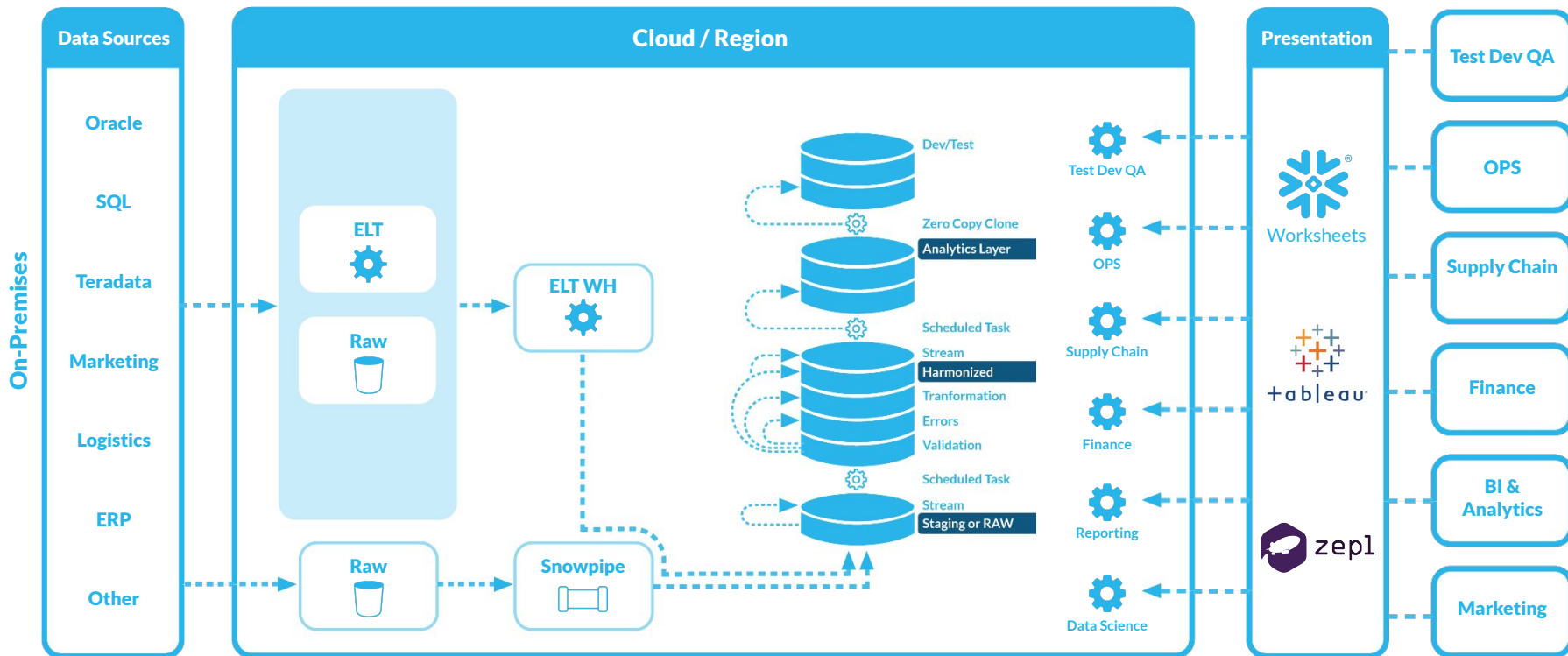
Be able to bring in PoS / online transactions, and derive associations as they come in, even on peak shopping periods like Black Friday

Time to Value

Doing all of the above fast enough to deliver associations and trends to decision maker

REFERENCE ARCHITECTURE

Industry



DEMO: THE DATA CLOUD

(The Original - Dec 2020)



A Single Consolidated Source For All Data

Query all data with ANSI SQL

Instantly and automatically control costs with PER-second billing
Basket size trend month over month

Secure Access To 3rd Party Data

Enrich internal data and improve analytics for faster and better-informed decisions
Analyze customer purchase
Simplify data sourcing: No ETL/FTP/API, no copying or moving data
Compare Sales against industry trends
Live and up-to-date, straight from the Data Provider

Data Driven Insights

No time wasted on bottlenecks
compute resources
Review strong association rules
No resource over-provisioning
placement differences in 2020
Accelerate data science workflows: more data, faster feature engineering, and direct integrations to leading ML tools like Zepl

DATA DRIVEN PRODUCT PLACEMENT :



The image features a solid blue background. In the center, the text "Q&A" is written in a large, bold, white sans-serif font. Behind the text are two overlapping speech bubbles of a lighter blue color. The larger bubble is on the right, and the smaller one is on the left, partially overlapping the larger one. The text "Q&A" is positioned over the intersection of the two bubbles.

Q&A

THANK
YOU