

# Employee Engagement & Rewards Company Utilizes Advanced Analytics to Perform Market Basket Analysis



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# The Challenge

## Large Volume of Point-of-Sale Data Limited Analytic Capabilities

An employee engagement and rewards company consults with clients to identify ways to drive customer and employee loyalty through planning, organizing, and executing incentive programs, travel, and events.

This company looked to expand service offerings to include performing data analysis on customers' data. Analyzing data would provide these customers with actionable insights that they could not previously obtain, speeding up the customer's return on investment and strengthening this company's customer relationships.

One particular customer provided this company with a large amount of point-of-sale data. The rewards company proposed performing a market basket analysis on the data to identify purchasing trends, allowing the customer to better understand consumers and influence purchasing decisions. The rewards company's previous attempts to analyze the 185 million rows of sales data were cumbersome and limited:

- ▶ Only a **subset** of the data could be analyzed, which required the assumption that the sampling was a proper representation of the dataset as a whole.
- ▶ It was extremely **time-intensive**; Even from the limited subset, an analyst could only process a further limited number of rows at a time, so the analysis required multiple iterations, reviews, and deduplication to actually derive the baskets needed to attempt to identify trends.

## The Solution - Data Analytics

This employee engagement and rewards company partnered with Zirous to evaluate current limitations and determine how to **quickly** deliver a custom solution that would provide new analytic possibilities and operational insights.



The teams worked together to:

- ▶ Understand business goals and current architecture
- ▶ Identify all data sources and formats
- ▶ Assist and empower the company's in-house resources
- ▶ Implement a sustainable data analytics solution

The forward-thinking development resulted in a flexible design that allows for additional sources to be added in the future with minimal impact on existing processes.



# The Impact

Improve Efficiency

## Increased Resource Availability

Data analysis previously took hours, required a lot of manual effort by data analysts, and was only performed on a subset of the data. By utilizing the processing power a Big Data platform offers, the entirety of the **185+ million rows** of point-of-sale data was analyzed in **under 10 minutes**.

Additionally, filters now quickly recalculate market baskets on segments of the data based on date range, store number, product type, and more.



## Increased Revenue

This company's new data analytics architecture opens up **new revenue streams** and enables them to offer value to customers they were unable to provide before.

It also provides the company with a sustainable architecture to perform their own internal analytics that can tangibly prove the cost benefits of their services. All of this additionally contributes to strengthening their customer relationships.

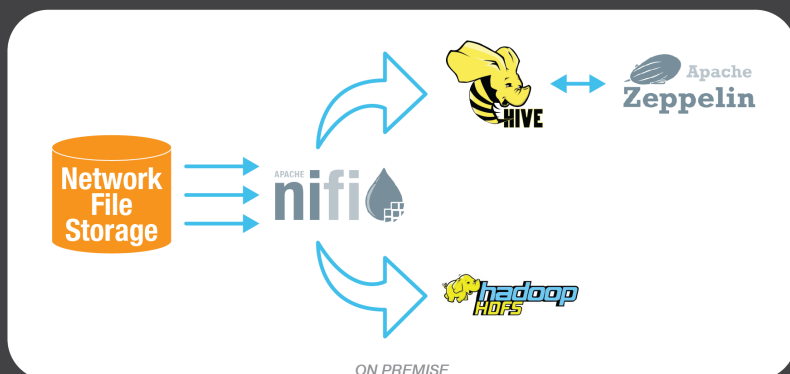


## Flexible Architecture

The development of this platform was done in modular form to allow the addition of future data sources without disrupting the current design.

### Architecture Details

*Implementation of a Hortonworks platform provided a predictive and prescriptive analytical tool.*



**Nifi** continuously ingests Point-of-Sale data into **Hive** from the company's network file storage location, and then also stores it in **Hortonworks Data File Storage (HDFS)**.

Once imported, the **Zeppelin** notebooking tool performs analysis over the entire dataset using SQL queries that run against the **Hive** tables.

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