

RETAIL

## How to stop too many SKUs from derailing your pricing optimization

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*Seeing the light on SKUs. Image credit: ActiveViam*

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Managing large numbers of stock-keeping units (SKUs) is a retail data challenge.

Most retailers handle anywhere from 20,000 to 200,000-plus SKUs, and each SKU tracked represents a variety of different data points such as detailed product data, other products on the market but not sold by the retailer, different prices for different chain store locations, historical data and competitors' SKUs.

For the average retailer, this represents thousands of gigabytes of data.

How to skew

The SKU for an inventory product includes data including purchasing price, size and brand, but it also includes specific products attributes.

For example, car tires have associated information with every model such as width, diameter, density, preferred terrain and a list of compatible cars.

While the product information SKUs are vital to the retail business, keeping track of competitors' pricing via their SKUs is important.

For retail chains maintaining all the SKUs representing different prices across different stores in the chain means multiplying the number of total SKUs to track by the number of stores.

Another consideration in SKU management is the pricing concept of "chaining" with rules that tie the price of one item with the price of other products.

The data management issue is instead of simply tracking SKUs retailers also must track all connections between the SKUs. In practice this means any new SKU will generate several new connections across the entire SKU dataset.

Adding up all of these SKUs represents a wealth of data for the retailer. The question is how to optimize and tap that data to increase both margins and sales.

## Dealing with GBs of data

SKUs may take up gigabytes of storage, but the space alone is not the challenge. For retailers, the challenge is making use of all that data and drawing value from it.

The first step is to load that data into an analytics platform.

This process can take hours unless the data transfer system has been optimized, and the workaround of leaving the system running at all times is not completely effective for a number of reasons. It is wasteful and the system will need to be rebooted on a semi-regular basis for maintenance.

Also, if the platform cannot stream in new data, updated price information will have to be uploaded manually.

Choices made at the platform level, such as pre-aggregating data at a very high level to reduce the data load, will impact the granularity of SKU data analysis. For example, calculating an average price at the national or state level rather than the store level.

With the state-level approach, a retailer will have 50 prices in their database for each SKU rather than one for each store. What happens with pre-aggregation is that retailer then loses the ability to optimize prices at the store level and compromises the ability to be more competitive and profitable.

## Coping with re-pricing

The most challenging aspect of pricing data is when a retailer re-prices, it is not just updating numbers in a long column. The process also entails calculating the impact of the re-pricing on key performance indicators (KPIs), such as the price index (new price versus competitors' price), raw margin rate, net margin rate and overall turnover.

These complex calculations have to be applied to millions of data points or even for a pre-aggregated dataset, tens to hundreds of thousands of data points.

These calculations can take six to 10 hours for a single price scenario depending on how many SKUs the retailer has, how many competitors they track, and the levels of aggregation calculated within KPIs.

Having the right analytics platform can make a huge difference for a retailer tracking a large number of SKUs.

A key platform element to look for is quickly performing aggregation calculations.

Some in-memory technologies, for example, can turn that six- to 10-hour process into two minutes or less.

What this means in practical terms is instead of only optimizing the most price-sensitive SKUs on a regular basis because the process takes so long, retailers can optimize all the SKUs, keep the data very granular rather than pre-aggregating at a high level, and quickly test price scenarios.

EFFICIENT SKU AND data management and the ability to quickly perform aggregation calculations represent millions of dollars in optimized margins and sales.



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